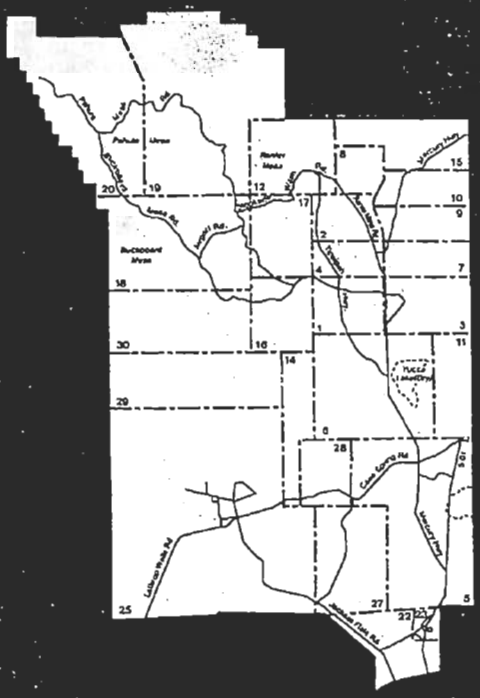
FY 2007 NNSA/NSO Ten-Year Site Plan



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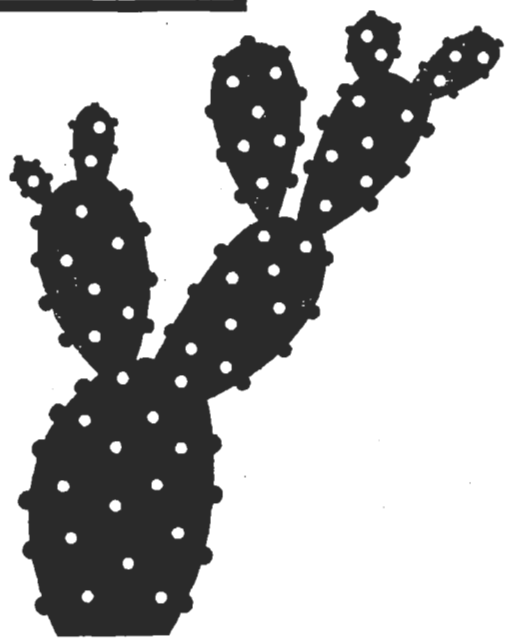

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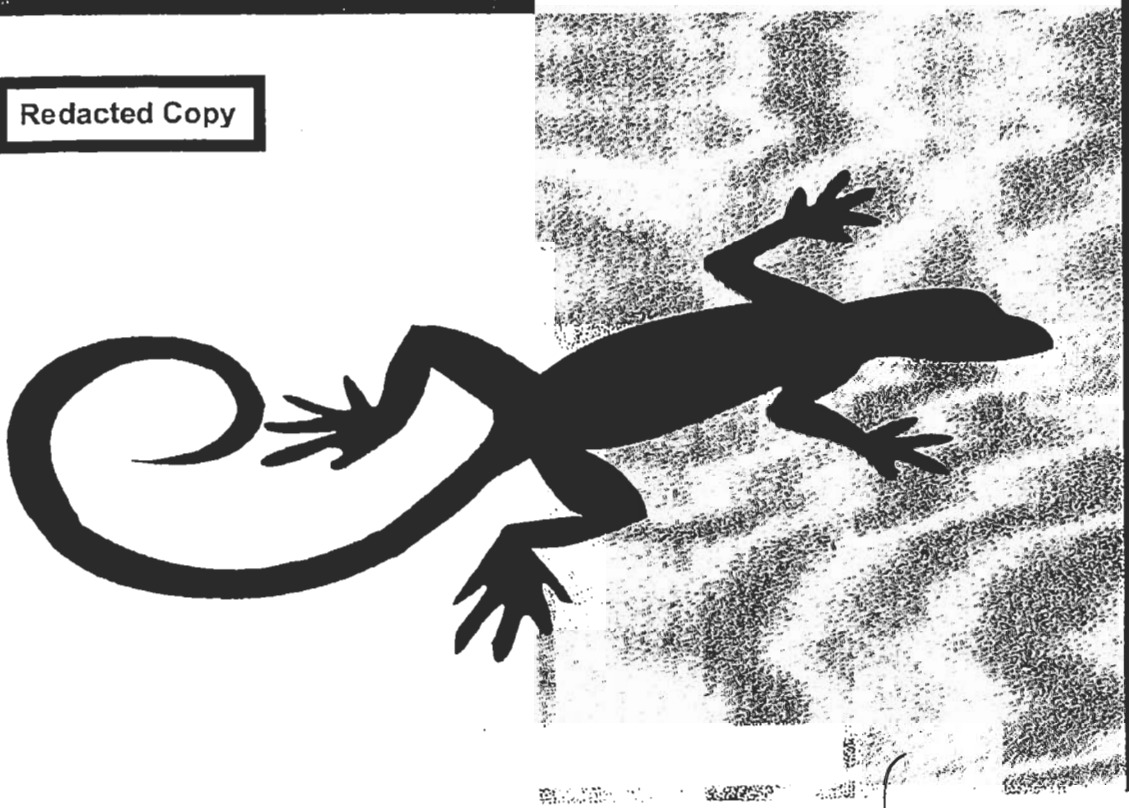

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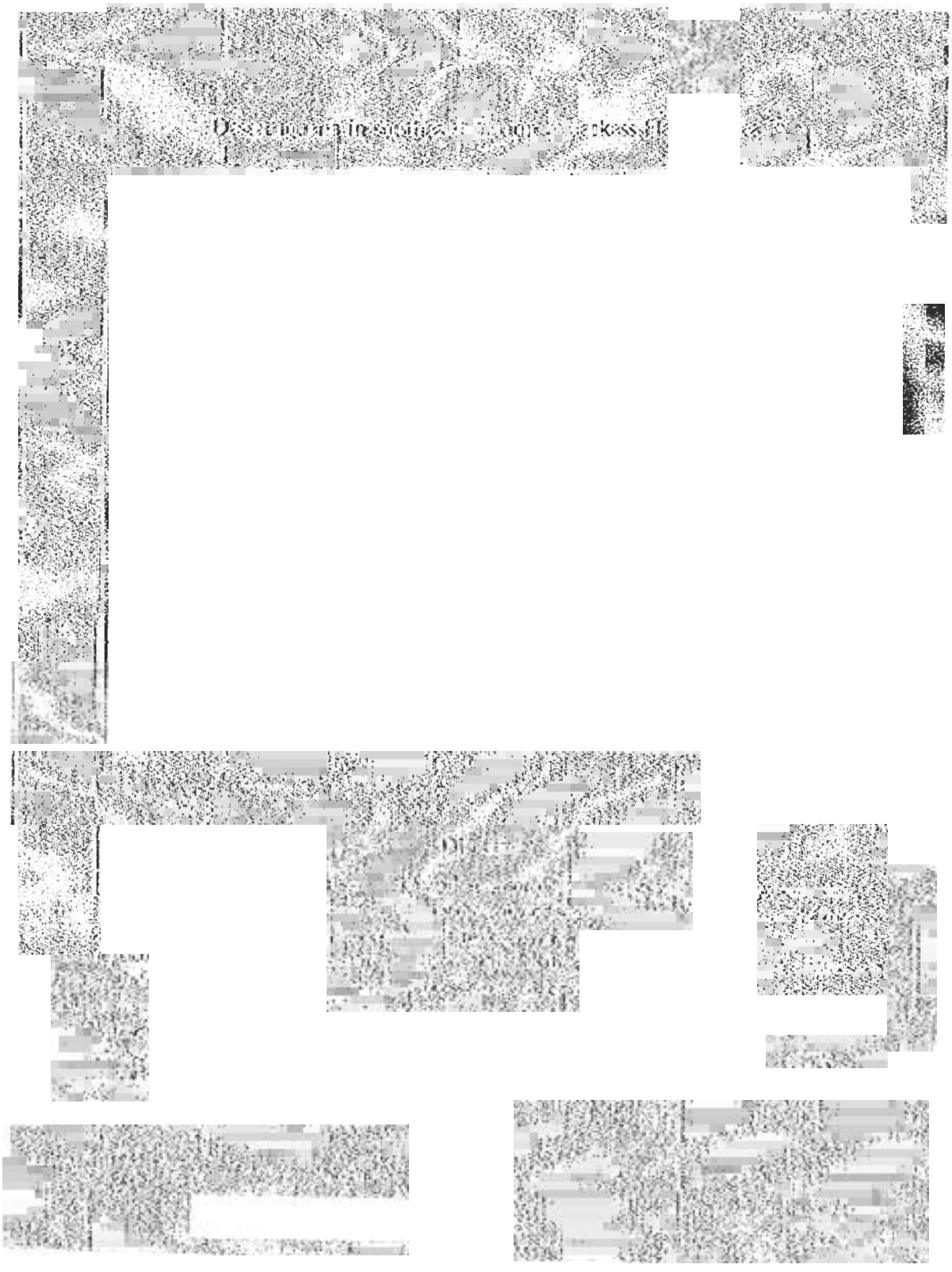
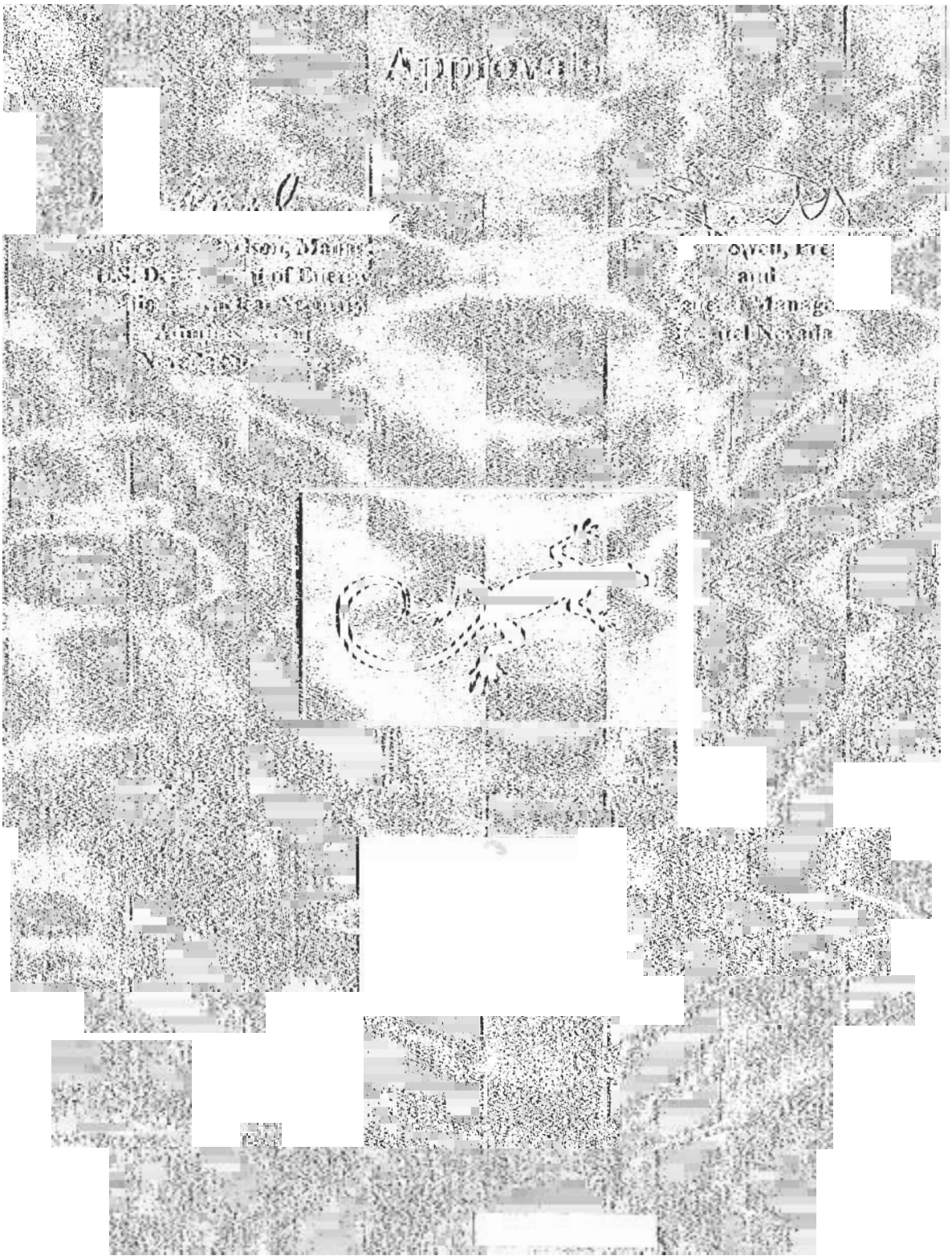
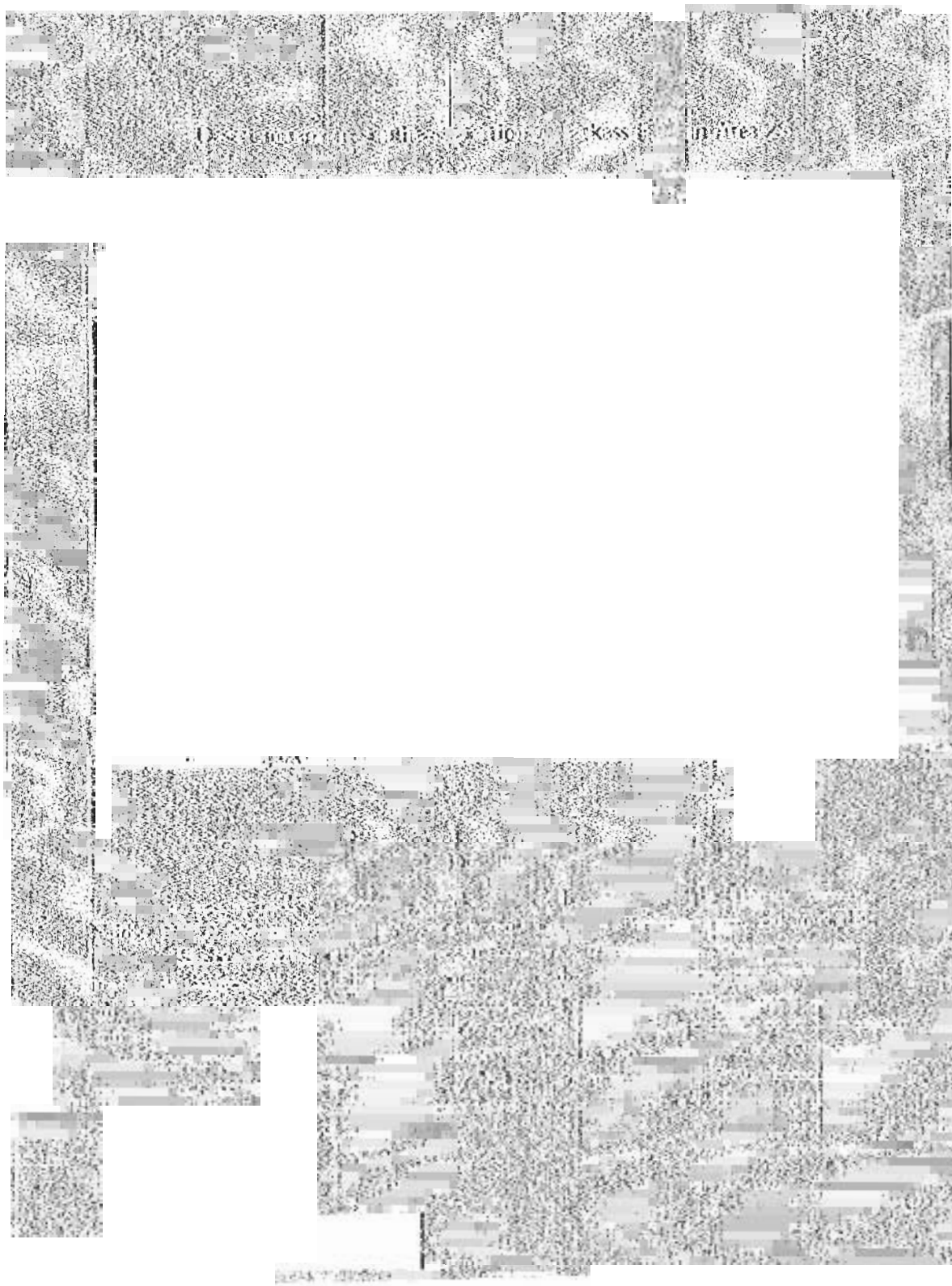



Approvals

FY 2007 NNSA/NSO
Ten-Year Site Plan

Executive Summary



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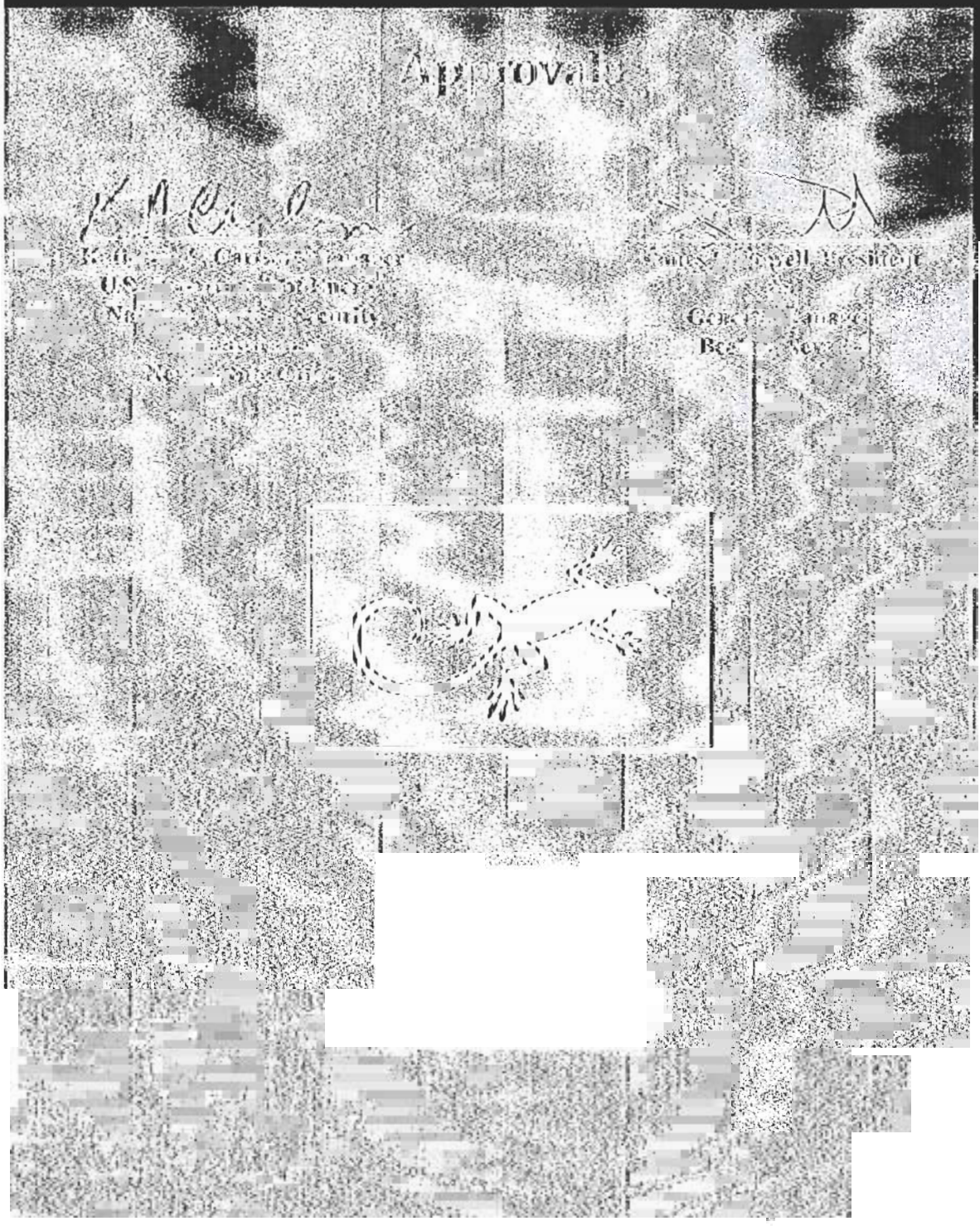

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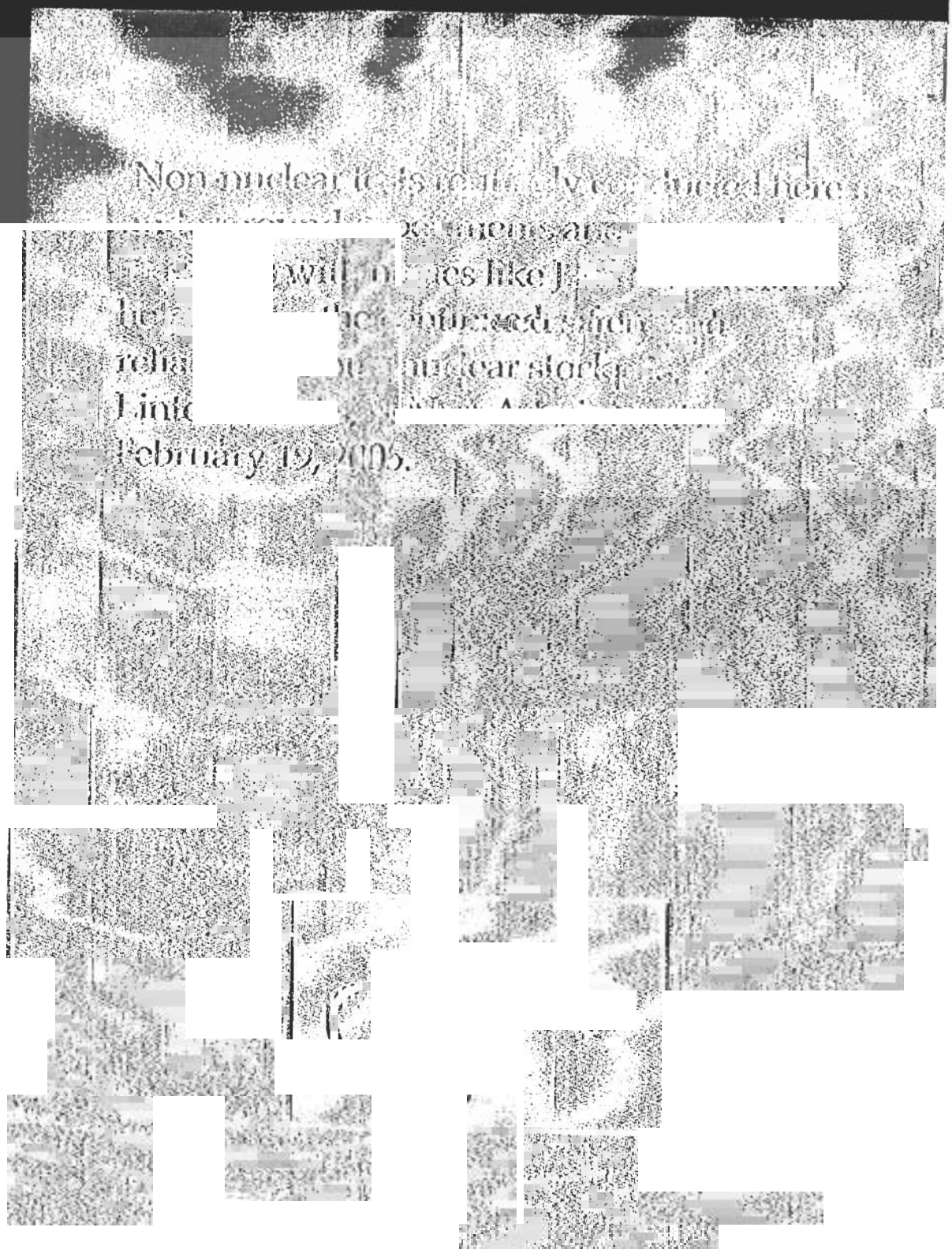
FY 2007 NNSA/NSO
Ten-Year Site Plan



The Nevada Test Site Today

A unique national resource, the NTS is a massive, remote, and secure outdoor laboratory and national experimental center that cannot be replicated. Larger than the state of Rhode Island, the NTS is approximately 1,375 square miles, making it one of the largest restricted access areas in the United States. The remote site is surrounded by thousands of additional square miles of land withdrawn from the public domain for use as a protected wildlife range and an Air Force test range, creating an unpopulated land area comprising some 5,470 square miles.

Mission, Programs, and Activities

The enduring stockpile of nuclear weapons used to preserve the nation's security must be maintained as safe and reliable. These requirements require the use of special nuclear material applied in a series of experiments and calculations. The most dynamic of the experiments are conducted at the NTS and complement Nuclear Test Readiness, keep personnel skills and knowledge up to date, and take advantage of the NTS's remoteness and security. These include the subcritical experiments, which measure dynamic properties of special nuclear material in temperature and pressure regimes unachievable elsewhere in the complex.

The primary mission of the NTS falls under the Stockpile Stewardship Program. This primary mission includes conducting experiments and high-hazard operations in support of the NNSA Nuclear Weapons Complex and other national security missions, ensuring readiness to conduct underground nuclear tests and maintaining the materials and operation of nuclear assemblies.

Another vital program at the NTS is the National Security Response Program. The events of September 11, 2001, underscored the need for a synergistic training program in an environment similar to real-world scenarios that might be encountered by emergency responders and U.S. Department of Defense personnel. Responding to this escalating demand, the NTS's Combating Terrorism Infrastructure continues to significantly expand weapons of mass destruction training for government agencies including the U.S. Department of Defense.

Combating Terrorism serves as the nation's leading operation to defeat terrorism and to prevent, mitigate the consequences of, and recover from acts of terrorism. These crucial activities are accomplished through project management and execution of technologies focused on combating terrorism, counter proliferation, weapons of mass destruction, critical infrastructure protection, hardened and deeply buried target systems testing, and test and demonstration of defense systems.

National Security Response serves as the program office for NNSA/NSO emergency response, nuclear nonproliferation, and counter-terrorism technologies. National Security Response provides project management and execution support for activities in consequence management, crisis response, nonproliferation technology, test and evaluation, and information and communication technologies, test and evaluation involving controlled releases of hazardous chemicals and biological stimulants for the purpose of hazardous materials research, development, testing, and training.

Nonproliferation Test and Evaluation Complex control room

The

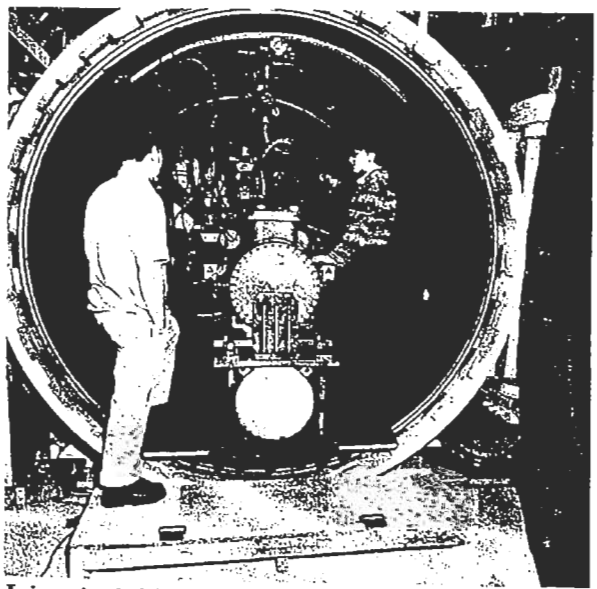
investment of 2 percent replacement plant value and the goal to reduce deferred maintenance of all mission-critical facilities and infrastructure to less than 5 percent of replacement plant value by FY 2009.

A critical need exists for new facilities in Mercury. Work has begun to identify future space requirements for expanding National Security Response Programs and Operations. An additional 28,000 square feet of space has been identified by National Security Response to meet the immediate need for expansion. National Security Response Programs and Operations and Counter Terrorism organizations continue to grow and their requirements for additional facilities is projected to double in the next three years.

The Nevada Test Site Future State

The *2005 NNSA Strategic Planning Guidance for Fiscal Years 2007-2011* defines a significant vision for the NTS:

> *As a self-sustaining entity, the NTS provides the supporting infrastructure, air space, and utilities to serve the nation in developing innovative solutions to complex problems involving special nuclear materials, hazardous materials, and multi-agency integrated operations. The test site represents the United States' single, unique capability to support nuclear testing and major experiments that involve special nuclear materials or hazardous materials. Strong competencies and technology reside in the skilled employees of the Nevada Site Office partnerships. The NTS has the ability to support the custom design and construction of experimental systems ranging from small electronic or remote sensing packages to fielding complex laboratories in hostile environments for use anywhere in the world.*



Joint Actinide Shock Physics Experimental Research primary and secondary containment chamber

At the NTS, Defense Programs conducts experiments, essential for understanding the properties of special nuclear materials that cannot be conducted at the Nuclear Weapons Laboratories. These experiments are conducted within facilities newly built or modified under the Stockpile Stewardship Program and exercise equipment and critical skills required for nuclear test readiness and other national security programs. Defense Programs is expected to continue as the single largest supporter of the NTS infrastructure.

Key among other national security uses of the NTS is support to the U.S. Department of Homeland Security for test and evaluation of advanced technologies to protect the U.S. in the future. Furthermore, the NTS infrastructure is used for training Counter Terrorism and First Responders, due to the nation's need and the excellent capabilities at the NTS.

The focus of the NTS for the next ten years is to provide unmatched support for high-risk, high-hazard, complex experimental and operational activities that are required to support the national security environment.

Sustaining viable facilities and infrastructure at the NTS not only facilitates achieving this vision, but also provides the foundation for accomplishing current and future primary NTS missions. The NTS of the future will realize NNSA corporate sustainment, recapitalization, and deferred maintenance goals to:

experience significant changes in facility square footage. The addition of square footage from construction of new buildings from FY 2002 and projected through FY 2008 is 280,641 gross square feet. In addition, 200,000 gross square feet of building space was transferred to Sandia National Laboratories. The total space reduction since FY 2002 is 335,395 gross square feet. Demolition of facilities from FY 2006 through FY 2009 is projected to reduce the footprint by an additional 58,944 gross square feet to result in a net of 3,040,657 projected gross square feet remaining by FY 2016.

Achieving the Vision

Facilities and Infrastructure Projects

To ensure that the NTS will continue to meet current and future multi-program needs, facilities and infrastructure must remain cost effective and sufficiently flexible to accept new experiments and/or missions over the next ten years. Focusing on experimental, support, and training activities in permanent facilities, within the Defense Program corridor on the NTS (see Figure 2.3), provides Bechtel Nevada with the opportunity to plan infrastructure improvements within the funding available in a systematic manner based on the programmatic needs and facility condition and the funding available. All indications are that Readiness in Technical Base and Facilities funding will be relatively flat. The addition of new missions will expand the indirect support base, but the loss of Facilities and Infrastructure Recapitalization Program funding in 2011 must be offset by additional funding and/or site generated revenue to ensure facilities and infrastructure are maintained at the industry standard of 2-4 percent of replacement plant value. A recent study of space charging models at the NTS and other Defense Programs sites recommends a blue ribbon panel to examine increasing space rates at the NTS as a means to offset increasing regulatory requirements; e.g., back flow prevention, lower potable water arsenic standard, and fund replacement in kind for aging facilities and infrastructure. A study of recharge fees for basic services, or the direct funding of required maintenance (e.g., roads, power, water, etc.) by those missions located outside the Defense Programs corridor, concluded that NTS fees are appropriate.

In FY 2005, the Secretary of Energy Advisory Board completed its report on the future of the Nuclear Weapons Complex. The Secretary of Energy Advisory Board recommended consolidation of the Nuclear Weapons Complex at one site. The NTS is one site that possesses all the necessary characteristics of remoteness, security, safety, size, and access to support such a consolidation. The transfer of the Los Alamos Criticality Experiments Facility operations to the Device Assembly Facility is one indicator of this consolidation. The influx of new facilities and activities, such as the U.S. Department of Homeland Security and counter terrorism underscore the synergies that can be created at the NTS. The evolving requirements and the Nuclear Test Readiness mission to carry out a possible underground test within 24 months require a strategic vision and analysis of infrastructure and services to support planned and anticipated missions. The analysis of these needs supports the continued use of Mercury as the hub for housing and central logistical support. The vision of Mercury is a total make-over; removing offices, housing, feeding, and warehouses built in the 1950s and replacing them with an innovative planned industrial, office, and housing based on third-party financing. Making this vision a reality demands innovative cost sharing with commercial entities as budget pressures increase.

Building A-1 maintenance and repair project

The Facilities and Infrastructure Recapitalization Program funds are being used to buy down deferred maintenance as a first priority and is a mixture of operating expense and General Plant Projects which also correct safety, environmental, and mission improvement deficiencies.

Project Prioritization

In support of NNSA's corporate goals for deferred maintenance reduction, Bechtel Nevada is prioritizing maintenance work for mission-critical facilities and infrastructure ahead of non-mission-critical facilities and infrastructure. The same is true for projects within the Facilities and Infrastructure Recapitalization Program. Mission-critical deferred maintenance projects have the highest priority, followed by deferred maintenance projects on non-mission-critical facilities and infrastructure, non-deferred maintenance projects on mission-critical facilities and infrastructure, and lastly, non-deferred maintenance projects on non-mission-critical facilities and infrastructure. Additionally, Bechtel Nevada uses the Lawrence Livermore National Laboratory priority matrix as an added indicator of a project's importance. Taking these various prioritization requirements into account, Bechtel Nevada has also established a multilevel project prioritization process, which includes the Facilities and Infrastructure Recapitalization Rating methodology as the final step in prioritizing a project's ranking in the overall project list.

The Facilities and Infrastructure Recapitalization Program currently projects providing NNSA/NSO with over $220 million through FY 2011 for addressing facility and infrastructure issues. The majority of the effort will be devoted to recapitalization projects such as:

- Correcting building deficiencies
- Repairing/upgrading the NTS water systems
- Replacing surface laid power cable with permanent power distribution lines
- Replacing/upgrading the electrical transmission system, the fiber optic backbone, and the microwave system
- Repairing numerous roads

These efforts will buy down mission-critical deferred maintenance such that the NNSA corporate goal for deferred maintenance reduction is reached by FY 2009. Furthermore, the total deferred maintenance backlog (both mission-critical and non-mission-critical facilities and infrastructure) will be reduced to less than 10 percent by FY 2009.

Maintenance Management

Bechtel Nevada has established the key components for a comprehensive approach to assist maintenance managers in effectively using resources to provide maintenance support for facility managers. Management provides a guide for maintenance activities over a five-year period, sets maintenance priorities, and employs a method for prioritization to enable the maintenance program to progress in a proactive rather than a reactive mode. The results of Facility and Infrastructure Assessments, prior-year performance, future requirements, and projections are combined by maintenance managers to form a site-wide vision for maintenance. Forging this common vision for facilities ensures a coordinated and cost-effective application of maintenance for the NTS. This shared vision is leading to a more balanced planning approach for both facilities and infrastructure.

Worker performing facility maintenance activity

The maintenance management approach is predicated on several efforts:

- Increasing planned and preventative maintenance as a percentage of all maintenance. Due to age of existing facilities and infrastructure on the NTS, a large percentage of maintenance is corrective (repair). Studies by Lockheed Martin Corporation have shown that increasing preventative maintenance increases useful and reduces overall maintenance cost.

- Bechtel Nevada is leading the way in the Nuclear Weapons Complex by incorporating integration software into a currently complex system of various software platforms, i.e., financial data (Oracle), facility information data (Facility Information Management System), and maintenance data (MAXIMO) that currently do not share data. The goal is to be able to retrieve data from the various platforms and perform real-time, accurate updates and reports as work requests are generated and maintenance activities are completed.

- Knowledge of the preventative maintenance to be performed is required to perform increased preventative maintenance. Bechtel Nevada has established a Condition Assessment Information System based hierarchy of facility and infrastructure elements contained in MAXIMO, and is currently using Condition Assessment Survey inspectors to increase the population of preventative maintenance items at each elements level.

- Once completed and validated, the results of this overall effort will have a significant and positive impact on maintenance management across the nuclear weapons complex.

Condition Assessments

One of the goals for NNSA/NSO is to provide economic and efficient facilities and infrastructure to its customers. To achieve that goal, the current condition of facilities and infrastructure must be fully understood. To facilitate this understanding, Bechtel Nevada developed a methodology to provide more accurate, complete assessments for all infrastructure and facilities. In FY 2005, Bechtel Nevada completed the first full cycle of facility and infrastructure assessments conducted by certified condition Assessment Information System Inspectors.

Overall, the new condition assessment process enables management to improve reinvestment decisions and to identify the current physical deficiencies of their assets. The results of the assessments are also used to develop the necessary maintenance, repair, or replacement projects to ensure the continuing viability of the facilities and infrastructure assessed. In addition, the data are used to determine if facilities or infrastructure elements should be excessed and disposed/decommissioned.

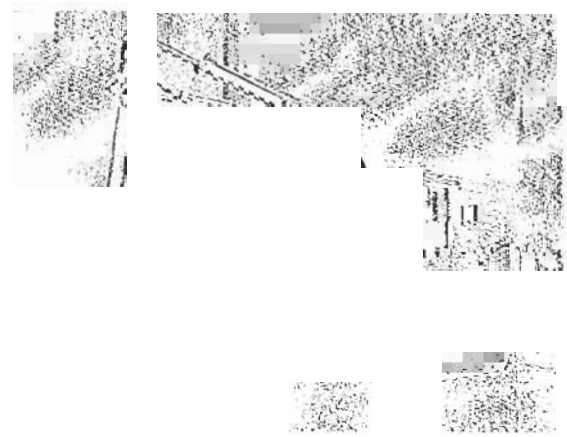
A Roof Assessment Program was initiated in FY 2004 and completed in FY 2005. A Pavement Assessment Program began in FY 2004.

Excess Facilities Disposal Program

Bechtel Nevada has exceeded NNSA/NSO's goal to dispose of 50 percent of all non-contaminated real property determined to be excess to all NNSA mission requirements by FY 2006. To date, all facilities scheduled for disposition on the Facilities Disposal List that are not awaiting characterization for possible contamination have been disposed of or are scheduled for disposal. By FY 2009, Bechtel Nevada will have completed disposal of all uncontaminated facilities currently identified on the Facilities Disposal List.

Demolition of building 12-201804

infra



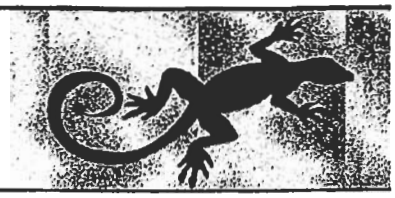
Highlight

August 16, 2004, marked the completion of the U1h Shaft Project at the NTS U1a Complex. The U1a Complex is an underground facility located 965 feet below the surface of Yucca Flats at the NTS and is accessed by three vertical shafts. U1h, the newest shaft at 20 feet in diameter and with a concrete lining, will become the primary means of access and egress for the Complex. The U1a Complex plays a key role in the Stockpile Stewardship program. Los Alamos National Laboratory retains overall responsibility for the management of the complex on behalf of NNSA/NSO while Bechtel Nevada provides support.

Ground was broken for the U1h Shaft Project in 1999 with total depth being reached in early 2001 and breakthrough of the U1a connecting drift in late 2001. The new hoist system was procured in 2002 and installed in 2003, with shaft outfitting and hoist system commissioning completed in August 2004.

The shaft and new hoist system enabled an increase in the personnel limit underground and quadrupled the capability to lower personnel and experiment construction materials underground to perform subcritical experiments. The project provides needed improvements including improved ventilation capabilities, improved access and egress paths, and improved personnel and materials handling capabilities. All these contributed to improved safety and efficiency of operations.

Table of Contents



1.0 Introduction 1-1

1.1 Overview 1-1
1.2 Assumptions 1-3
1.2.1 Planning Assumptions 1-3
1.2.2 Programmatic Assumptions 1-4
1.3 Current Situation 1-5
1.4 Changes From the Prior Year TYCSP 1-7

2.0 Site Description 2-1

2.1 General Site Description 2-1
2.1.1 NTS 2-2
2.1.1.1 NTS Power Distribution and Transmission System 2-3
2.1.1.2 Water 2-4
2.1.1.3 Roads 2-5
2.1.1.4 Communication 2-5
2.1.1.5 Historic Facilities 2-6
2.1.2 Auxiliary Site 2-8
2.1.2.1 North Las Vegas Facility 2-8
2.1.2.2 Cheyenne Facility 2-9
2.1.2.3 Remote Sensing Laboratory – Nellis 2-10
2.1.2.4 Remote Sensing Laboratory – Andrews 2-10
2.1.2.5 Livermore Operations 2-11
2.1.2.6 Los Alamos Operations 2-11
2.1.2.7 Special Technologies Laboratory 2-12
2.2 Site Maps 2-12

3.0 Mission Needs/Program Description 3-1

3.1 Current Mission, Programs, and Workload 3-1
3.1.1 Stockpile Stewardship Programs and Operations 3-3
3.1.1.1 National Stockpile Stewardship Program 3-3
3.1.1.2 Readiness in Technical Base and Facilities 3-15
3.1.1.3 Site and Infrastructure Planning and Projects 3-25
3.1.1.4 Site Operations 3-26
3.1.2 National Security Response Programs and Operations 3-27
3.1.2.1 National Security Response Program 3-28
3.1.2.2 Combating Terrorism 3-29
3.1.2.3 National Security Response Operations 3-32
3.1.2.4 Key Support Facilities 3-34
3.1.3 Environmental Management 3-37
3.1.3.1 Waste Management 3-37
3.1.3.2 Environmental Restoration 3-37
3.1.3.3 Technology 3-38
3.1.3.4 Key Support Facilities 3-38

3.2 Mission-Critical Facilities and Infrastructure/Linkages Between Facilities and Infrastructure and Mission Needs 3-39
3.3 Production Readiness/Plant Capacity 3-40
3.4 Future NNSA Mission, Programs, Workload, and Impacts 3-40
3.5 Future Non-NNSA Mission, Programs, Workload, and Impacts 3-42
3.6 Impacts of Non-NNSA Programs on Weapons Activities Mission Accomplishment 3-42
3.7 Facilities and Infrastructure Impact in Support of Information Technology 3-43

4.0 The Plan 4-1

4.1 Planning Process 4-1
4.1.1 Facilities and Infrastructure Overview 4-5
4.1.1.1 NTS Facilities and Infrastructure 4-5
4.1.1.2 North Las Vegas Facilities and Infrastructure 4-6
4.1.1.3 Remote Sensing Laboratory - Nellis Facilities and Infrastructure 4-7
4.1.1.4 Remote Sensing Laboratory - Andrews Facilities and Infrastructure Overview 4-8
4.1.1.5 Livermore Operations Facilities and Infrastructure Overview 4-8
4.1.1.6 Los Alamos Operations Facilities and Infrastructure Overview 4-9
4.1.1.7 Special Technologies Laboratory Facilities and Infrastructure Overview 4-9
4.1.2 Real Property Asset Management 4-9
4.1.2.1 Condition 4-9
4.1.2.2 Utilization 4-12
4.1.2.3 Future Space Needs 4-12
4.1.2.4 Leased Space 4-12
4.1.2.5 Land-Use Planning 4-14
4.1.3 Site Footprint Management 4-16
4.1.3.1 Excess Facilities Footprint Elimination 4-18
4.1.3.2 New Construction Footprint Added 4-18
4.1.3.3 Grandfathered Footprint Added 4-18
4.1.3.4 Site Footprint Reduction Analysis 4-18
4.1.3.5 Waiver and Transfer 4-18
4.1.4 Deferred Maintenance Reduction/Facility Condition Index 4-18
4.1.4.1 Site Plan to Meet NNSA Corporate Goals 4-22
4.1.5 Maintenance 4-26
4.1.6 Identification of Replacement-in-Kind Requirements 4-29
4.1.7 Utilities 4-30
4.1.7.1 NTS Utilities 4-30
4.1.7.2 North Las Vegas Utilities 4-31
4.1.7.3 Remote Sensing Laboratory - Nellis Utilities 4-32
4.1.7.4 Remote Sensing Laboratory - Andrews Utilities 4-32
4.1.7.5 Livermore Operations Utilities 4-32
4.1.7.6 Special Technologies Laboratory Utilities 4-32
4.1.8 Energy Management 4-32
4.2 Security 4-34
4.2.1 Security Infrastructure 4-35

5,0 Facilities and Infrastructure Projects/Activities and Cost Profile 5-1
5.1 Overview of Site Project Prioritization and Cost Profile 5-1
5.2 Significant Project Deletions and Additions 5-1
5.3 Facilities and Infrastructure Cost Projection Spreadsheets 5-3

Appendices

Appendix A: Attachments A, C, and E-H A-1
Appendix B: Site Maps B-1
Appendix C: Facility and Infrastructure Assessments C-1
Appendix D: Miscellaneous D-1

Figures

Figure 1-1: NTS Buildings by Age 1-6
Figure 1-2: Offsite Buildings by Age 1-6

Figure 2-1: NNSA/NSO Operations Sites 2-1
Figure 2-2: NTS Vicinity Map 2-2
Figure 2-3: Las Vegas Vicinity Map 2-9

Figure 3-1: Bechtel Nevada Organizational Structure to support NTS Mission, Programs, and Activities 3-2

Figure 4-1: NNSA/NSO Planning Process 4-3
Figure 4-2: Building Condition and Life Cycle 4-9
Figure 4-3: Building Condition and Target Life Cycle 4-9
Figure 4-4: NTS Utilization Readiness in Technical Base and Facilities (RTBF) Corridor 4-17
Figure 4-5: Gross Square Foot (gsf) Tracking Space Summary 4-19
Figure 4-6: Buydown in Mission-Critical Deferred Maintenance to Reach Corporate Goal of 5% by FY 2009 4-20
Figure 4-7: Total Non-Mission-Dependent Deferred Maintenance Backlog to Reach Corporate Goal of Less than 10% by FY 2009 4-20
Figure 4-8: Required Funding Profile 4-25
Figure 4-9: Method for Prioritizing Work 4-26

Tables

Table 1-1: Percent Deferred Maintenance of Replacement Plant Value by System 1-7

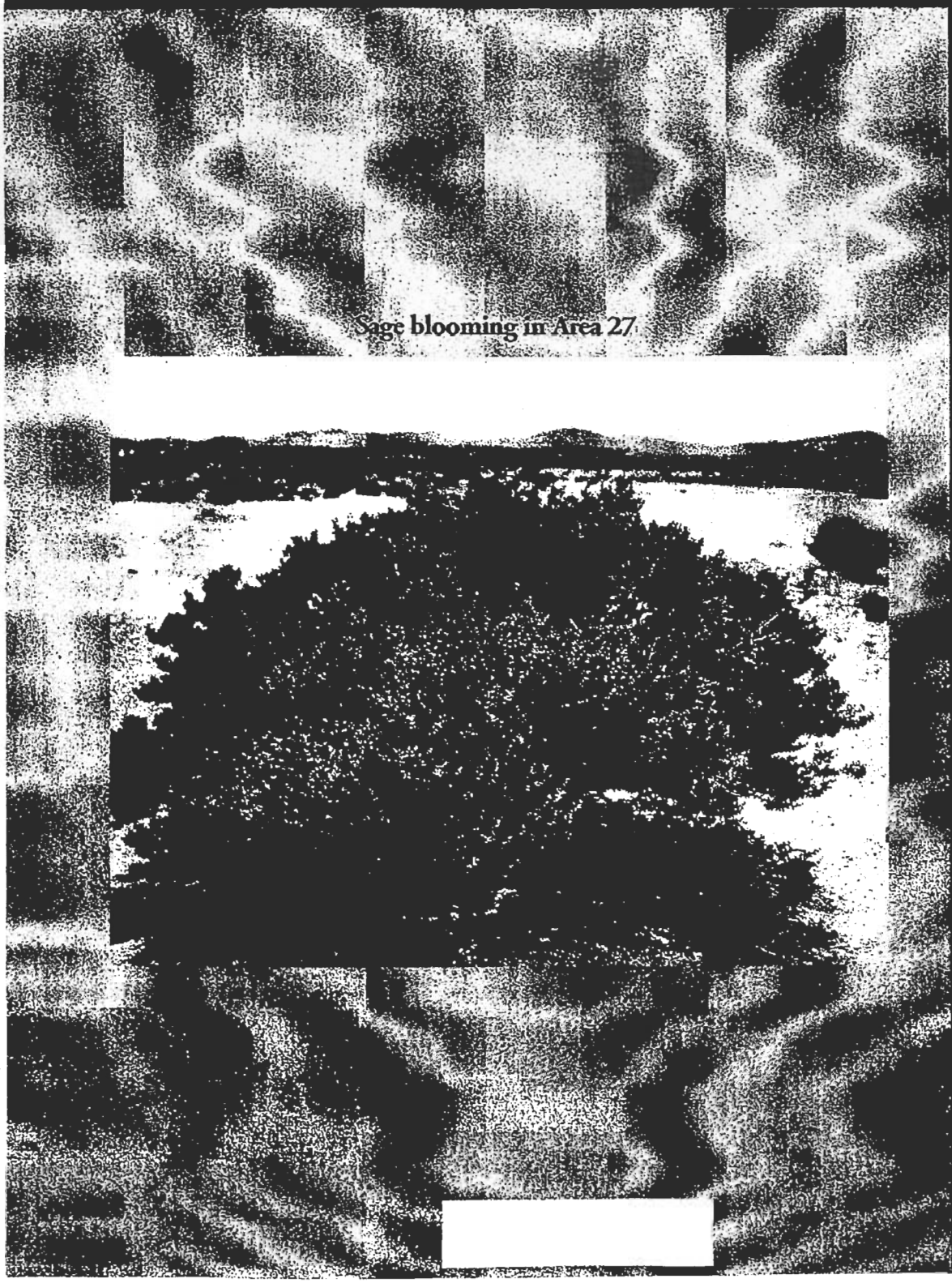
Table 2-1: NTS Overview 2-3
Table 2-2: North Las Vegas Facility Overview 2-9
Table 2-3: Cheyenne Facility Overview 2-10
Table 2-4: Remote Sensing Laboratory - Nellis Overview 2-10
Table 2-5: Remote Sensing Laboratory - Andrews Overview 2-11
Table 2-6: Livermore Operations Overview 2-11
Table 2-7: Los Alamos Operations Overview 2-12
Table 2-8: Special Technologies Laboratory Overview 2-12

Table 3-1: Key Readiness in Technical Base and Facilities Facility and Infrastructure Support for Stockpile Stewardship Projects and Activities 3-27
Table 3-2 Key Facility and Infrastructure Support for National Security Response Programs and Operations Projects and Activities 3-34
Table 3-3: Key Facility and Infrastructure Support for Environmental Management Projects and Activities 3-38
Table 3-4: NNSA/NSO Work for Others Projects 3-43

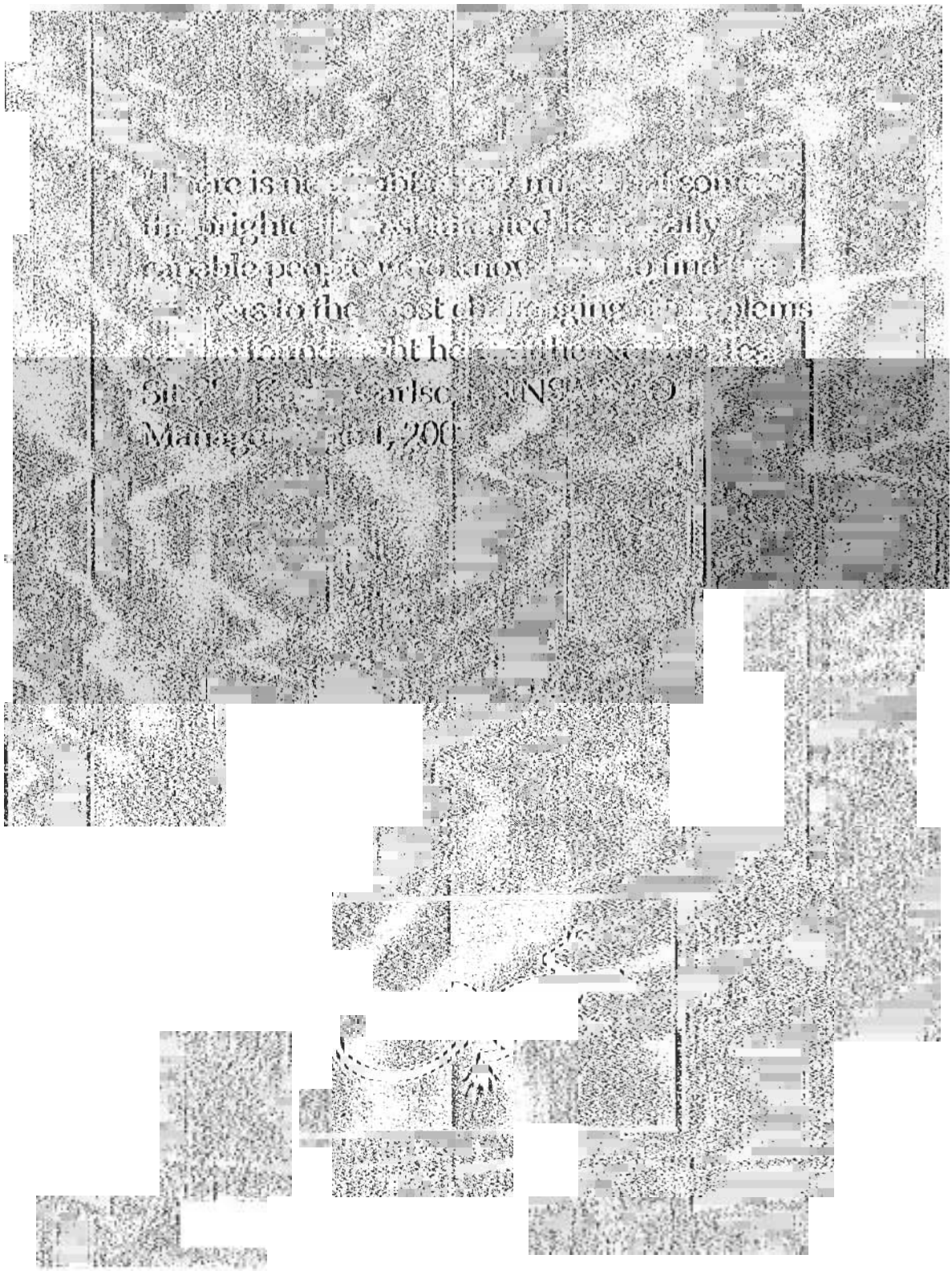
Table 4-1: Current Conditions of NNSA/NSO's Active and Spare Buildings 4-10
Table 4-2: Predicted Future Conditions of NNSA/NSO's Active and Spare Buildings 4-10
Table 4-3: Mission-Critical Project Prioritization 4-11
Table 4-4: Projected FY 2006 Maintenance Investment as a Percentage of Adjusted Site RPV 4-24

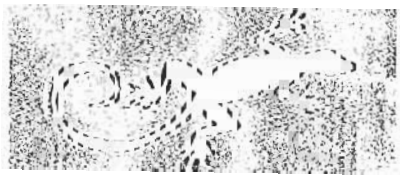
MTE	major technical effort
NEPA	National Environmental Policy Act
NLV	North Las Vegas
NNSA	National Nuclear Security Administration
NNSA/NSO	National Nuclear Security Administration, Nevada Site Office
NSF	Nevada Support Facility
NTS	Nevada Test Site
OP	Operating Procedure
PRF	Project Request Form
RIK	replacement-in-kind
RPV	replacement plant value
RSL-N	Remote Sensing Laboratory - Nellis
RSL-A	Remote Sensing Laboratory - Andrews
RTBF	Readiness in Technical Base and Facilities
SDWG	Site Development Work Group
THREX	Threshold Experiment
TRU	Transuranic
TYSP	Ten-Year Site Plan
WSI	Wackenhut Services, Inc.
YMP	Yucca Mountain Project

Introduction



Sage blooming in Area 27





to meet NNSA/NSO's commitment to reduce deferred maintenance of all mission-critical facilities and infrastructure to less than 5 percent of replacement plant value by FY 2009.

As new missions are added to the NTS, planning to maximize efficient utilization of existing facilities and infrastructure becomes essential. To meet this challenge, the Site Development Working Group founded the strategic planning process and initiatives to restore, revitalize, and rebuild NTS facilities and infrastructure. The established planning process aids in developing and planning for ongoing future needs by linking projected experiments and known mission changes to facilities and infrastructure improvements. An assessment of the operational facilities and infrastructure, completed in FY 2003, provided a starting point for quantifying requirements and useful life to meet projected mission-critical needs. This assessment complements the NTS Infrastructure Management Plans referenced in the *FY 2005 Bechtel Nevada Annual Maintenance Plan*. Infrastructure Management Plans completed in FY 2003 provided technical analyses of present and proposed needs and requirements to support Readiness in Technical Base and Facilities, Directed Stockpile Work, Campaigns, and other programs.

The *Ten-Year Site Plan* (*TYSP*) is the facility and infrastructure planning document supported by the *FY 2006 Bechtel Nevada Annual Maintenance Plan*, Comprehensive Project List, Readiness in Technical Base and Facilities Site Execution Plan, Infrastructure Management Plans, assessments, and various other site planning documents. As such, the *TYSP* focuses management action on current and future facility and infrastructure needs at each site in support of Readiness in Technical Base and Facilities, Directed Stockpile Work, Campaigns, and other programmatic requirements. The *TYSP* also provides a strategic plan for making operational decisions and establishing future priorities to support the primary missions of the NNSA/NSO.

As the foundation for these plans, the *TYSP* includes a prioritized list of facilities and infrastructure projects for maintaining and improving the sites managed by Bechtel Nevada (see Appendix A, Attachment A-4).

Constructing pads for water tanks in Area 5

The TYSP is also used by NNSA to support budget and resource decision-making, including obtaining support from Congress and the Office of Management and Budget Evaluation.

The *FY 2007 TYSP* supports the FY 2007-2011 Planning, Programming, Budgeting, and Evaluation cycle and covers the FY 2007-2016 time frame. It is based on information available from close of FY 2005 accounting. This document provides a resource-constrained plan with site-specific funding profiles that are consistent with the Future-Years National Security Program. The plan also presents a longer-term vision for improving real property asset management and for improvements needed to meet future technical requirements. Near-term information presented in this plan is based on detailed data while less certain, out-year information is based on higher-level planning assumptions.

The NNSA budget categories that fund facilities and infrastructure at the multi-program sites are: Defense Programs' Readiness in Technical Base and Facilities operations, Line Item construction, the Facilities and Infrastructure Recapitalization Program, and indirect funds. The *TYSP* covers both direct- and indirect-funded NNSA facilities and infrastructure activities. The indirect-funded facilities and infrastructure activities include areas such as the maintenance of real and personal property, space management, and general purpose equipment.

The organization and information contained in the *FY 2007 TYSP* is based on *NNSA TYSP Guidance* (February 2006). In accordance with the guidance, Chapter 1 provides an overview of the foundation upon which NTS's long-range facilities and infrastructure planning process and the *TYSP* is built.

Chapter 2 presents an overview of each site that addresses location, capabilities, requirements, and concerns. The primary focus of this chapter is on the NTS. Supporting graphs, maps, and photographs are included in Appendix B to further illustrate the points presented in this chapter.

Chapter 3 defines the site's mission and related programs and workloads for both NNSA and non-NNSA programs. The emphasis is on current and future changes to program missions that could impact workload and, consequently, the associated facility and/or infrastructure activities or requirements. This chapter also discusses mission-critical facilities.

Chapter 4 portrays Bechtel Nevada's plans to operate and maintain a safe, secure, compliant, and appropriately-sized complex of facilities and infrastructure to meet current and future NNSA mission, program, and workload requirements within fiscal constraints. This chapter also provides an overview of each site's facilities and infrastructure, an assessment of the condition of the facilities and infrastructure and their utilization, identification of excess facilities, and plans for improvement. This chapter discusses deferred maintenance — where it was, where it is, and what our plans are to reduce it to an acceptable level. This chapter also summarizes Environment, Safety and Health, and Safeguards and Security requirements.

Underground experiment tower and device emplacement crane

Finally, Chapter 5 provides a discussion of the forecast for facilities and infrastructure projects and activities, and the associated cost profile for the ten-year planning horizon. This chapter also includes an overview of the prioritization process for facilities and infrastructure activities.

1.2 Assumptions

Decisions made by NNSA/NSO are based on a number of assumptions regarding site operations, test programs, customers, and facility needs. These assumptions anticipate site use, policies, regulations, and agency mandates that may affect operation over the next ten years.

The following key planning and programmatic assumptions guide NNSA/NSO planning activities and were used to develop this *TYSP*.

1.2.1 Planning Assumptions

- Institutional control of the NTS will continue indefinitely. Federal control of the site is considered an obligation of the federal government and will be maintained. Offsite subsurface restrictions (institutional control) will be maintained to prevent access to radioactive contamination or contaminated groundwater.
- Federal lands surrounding the NTS will remain under federal control, including the Air Force's Nevada Test and Training Range, previously known as the Nellis Air Force Range.
- NNSA/NSO will continue to manage the air space over the NTS through a Memorandum of Agreement with the U.S. Air Force.

Currently, Facilities and Infrastructure Recapitalization Program funds are being structured to maximize the buy down of deferred maintenance from the FY2003 baseline. Funding for maintaining facilities and infrastructure elements is being accomplished through both the use of operating expense funds and indirect funding.

Permanent federal government facilities and infrastructure are generally designed for a life expectancy of 50 years for U.S. Department of Energy and 67 years for U.S. Department of Defense facilities. However, maintaining any facility at an economically functional level requires regular infusion of recapitalization funds, especially if the facilities and infrastructure are kept in operation beyond their design life. Such is the case at the NTS.

The rate of building deterioration at the NTS is exacerbated by the large number of buildings that have been in operation well beyond their design life. As shown in Figure 1-1, 2,768,902 square feet (63 percent) of buildings (shown in the Facility Information Management System as a 501 asset type) are over 30 years old; 20 percent of buildings are less than 20 years old. The mean age of NTS buildings is 32 years.

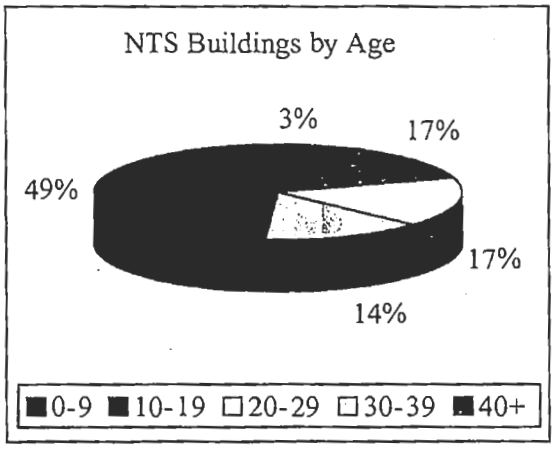


Figure 1-1: NTS Buildings by Age

In addition to the buildings on the NTS, NNSA/NSO owns buildings at the North Las Vegas Facility, the Remote Sensing Laboratory - Nellis, and the Remote Sensing Laboratory - Andrews.

Figure 1-2 compares these offsite facilities (buildings shown in the Facility Information Management System as a 501 asset type) by age. Twenty-one percent of these facilities are over 30 years old and 51 percent are less than 20 years old.

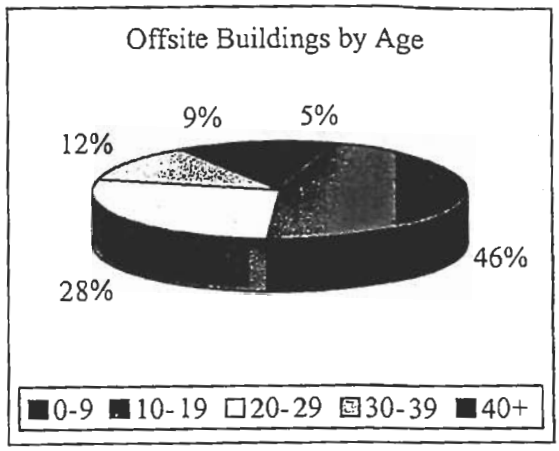


Figure 1-2: Offsite Buildings by Age

NNSA/NSO leases facilities for Bechtel Nevada at the Las Vegas Cheyenne Facility, and for Livermore Operations, Los Alamos Operations, and a hangar for Andrews Operations. The respective owners of these leased facilities are responsible for all facilities and infrastructure repairs. Buildings leased at the Special Technologies Laboratory are maintained by Bechtel Nevada.

The primary focus of this *TYSP* is on the maintenance and recapitalization of mission-critical facilities and infrastructure at the NTS as well as the auxiliary sites.

Maintaining the infrastructure of the NTS is a challenging issue. A recent assessment of the NTS infrastructure included studies of the Power Distribution and Transmission System, Water System, Roads System, and Communication System. Based on data from this study, the replacement plant value of all NTS infrastructure reflected in the Facility Information Management System was estimated at a total of $2.4 billion. Table 1-1 compares NTS deferred maintenance to replacement plant value and shows the percent of deferred maintenance for the mission critical and non-mission dependent Power Distribution and Transmission System, Water System, Roads System, Sewer System, and Communication. Currently, over

two thirds of scheduled deferred maintenance activities are related to infrastructure (i.e., utilities, roads, communication). The majority of deferred maintenance reduction over the next ten years will continue to focus on infrastructure improvements that support mission-critical facilities.

Table 1-1: Percent Deferred Maintenance of Replacement Plant Value by System

	Mission Critical	Non-Mission Dependent
Communications	13.56	2.31
Sewer	0.00	0.00
Power	9.73	7.90
Water	7.16	8.96
Roads	35.98	11.31
Other	0.06	0.00

Corrective actions are underway to alleviate significant problems, concerns, and challenges related to mission-critical facilities and infrastructure. Data from facilities and infrastructure assessments are being recorded, analyzed, and reflected as potential projects. The assessment results and potential project lists are returned to the Facility Manager/Facility Owner for their review. Facility Managers/Facility Owners independently rank the projects according to mission risk level and probability of having an institutional impact (failure). These two elements are combined to develop an overall priority and, ultimately, a priority ranking of all the projects. Based on the project priority ranking, a preliminary project criteria form is created to proceed to the Infrastructure Planning Process. This process takes these projects, as well as other projects generated from Programs/Operations, and establishes an overall needs and requirements priority for projects by using the Facilities and Infrastructure Recapitalization Rating required by NNSA/NSO.

Through the continued use of the Facility and Infrastructure Assessment Program, management can focus on an improved investment strategy for the [illegible] of repair upgrade or replacement. This focus is key to ensuring that facilities and infrastructure are operating at an optimum level and that they continue to meet user's needs.

1.4 Changes From the Prior Year *TYCSP*

Changes from last year's *TYCSP* include minor modifications to the document's format and content, as specified in *NNSA TYSP Guidance* (February 2006). Global changes included TYCSP to TYSP, mission-essential facilities to mission-critical facilities and non-mission-essential to non-mission-dependent. In addition, project changes have occurred since last year due to redirection from NNSA through the Integrated Construction Program Plan.

- General
  - Comments received about the *FY 2006 TYCSP* were reviewed and portions of the *FY 2007 TYSP* changed to more closely mirror *NNSA TYSP Guidance* requirements.
  - Clarifications in the *NNSA TYSP Guidance* regarding prioritizing Facilities and Infrastructure Recapitalization Program projects to meet deferred maintenance goals and support missions-critical facilities and Infrastructure requirements has caused a significant change in prioritization of Facilities and Infrastructure Recapitalization Program projects. This will be reevaluated each year to ensure that NNSA's goals are met.
- Chapter 1
  - Section 1.4, "National Environmental Policy Act," was moved to Section 4.1.2.5.2
  - Section 1.5, "Historic Facilities" was moved to section 2.1.1.1.5
- Chapter 2
  - Figure 2-3 and associated text were moved from Section 2.1.1 to Section 4.1.2.5.4
- Chapter 3
  - Section 3.5, "Role of Technology in the Complex of the Future," was deleted

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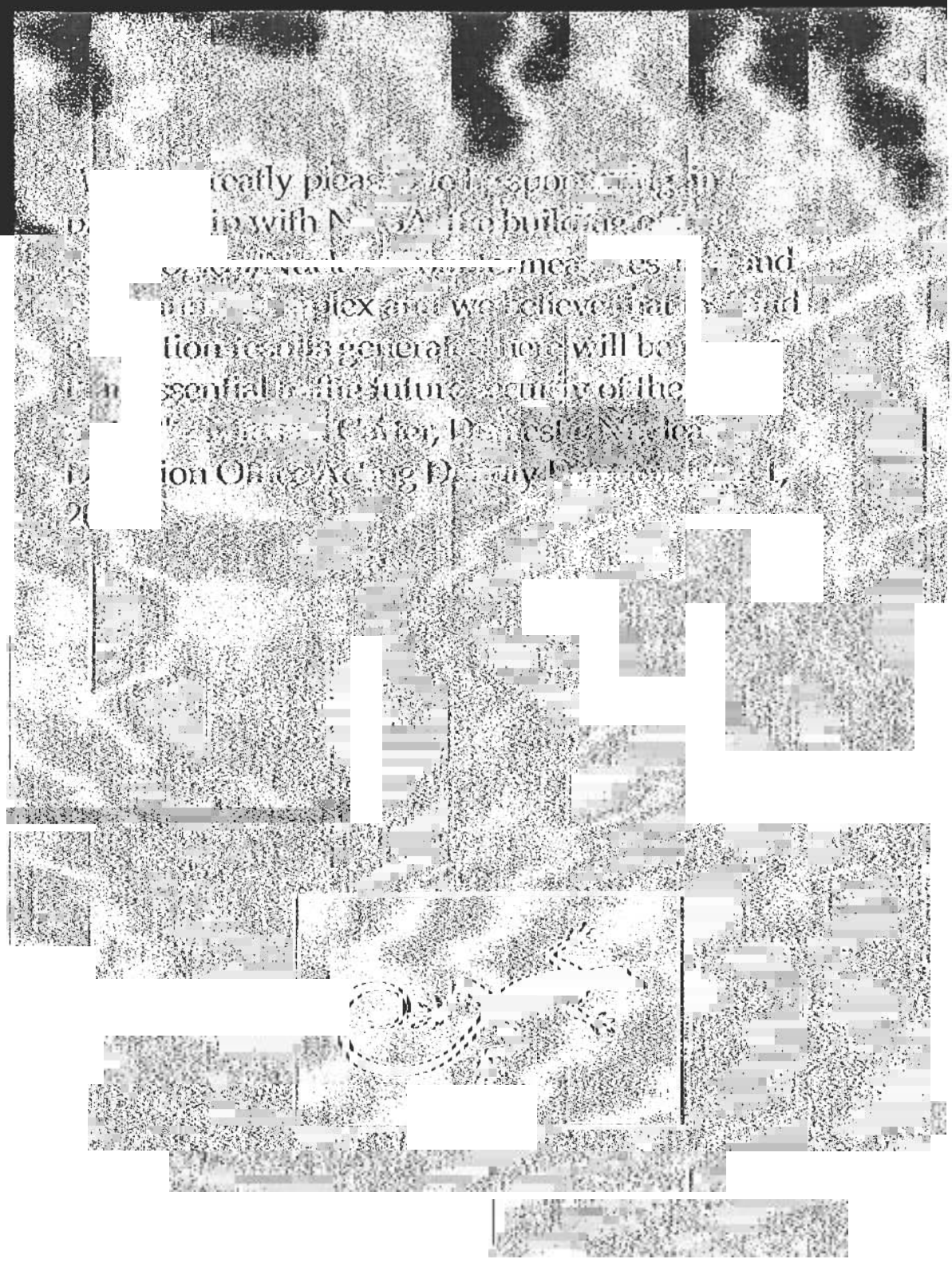
Site Description

FY 2007 NNSA/NSO
Ten-Year Site Plan



Managing the widespread operations and maintaining the complex infrastructure of the NTS and its auxiliary sites is a challenging responsibility. This challenge is met by Bechtel Nevada, the Management and Operating contractor, to realize the full potential of the NTS. NNSA/NSO provides the oversight and directions that guide the major effort to meet national goals.

The total square footage anticipated for NNSA/NSO facilities over the next 10 years as a result of facility disposition and new construction is anticipated to be 3,045,679 gross square feet, including leased facilities. This represents a reduction of 574,121 gross square feet since FY 2002.

Mercury Base Camp at NTS

2.1.1 NTS

The NTS description was taken primarily from DOE/NV/1718-594, *Ecology of the Nevada Test Site: An Annotated Bibliography, September 2001* and DOE/EIS-0243-SA-01,*Supplement Analysis for the Final Environmental Impact Statement for the Nevada Tests Site and Off-Site Locations in the State of Nevada, July 2002.* A detailed description of the NTS's physiography and biology is detailed in these documents.

Larger than the state of Rhode Island, the NTS consists of approximately 1,375 square miles (3,561 square kilometers) of arid, basin-and-range terrain in Nye County in south-central Nevada. Las Vegas, located in Clark County, is 65 miles (105 kilometers) southeast of the NTS and is the closest major urban area. The NTS is buffered on all sides by federal lands. As shown in Figure 2-2, the NTS is bordered on the north and west by the Nevada Test and Training Range (previously known as the Nellis Air Force Range); on the east by an area used by both the Nevada Test and Training Range and the Desert National Wildlife Range; and on the south by Bureau of Land Management lands.

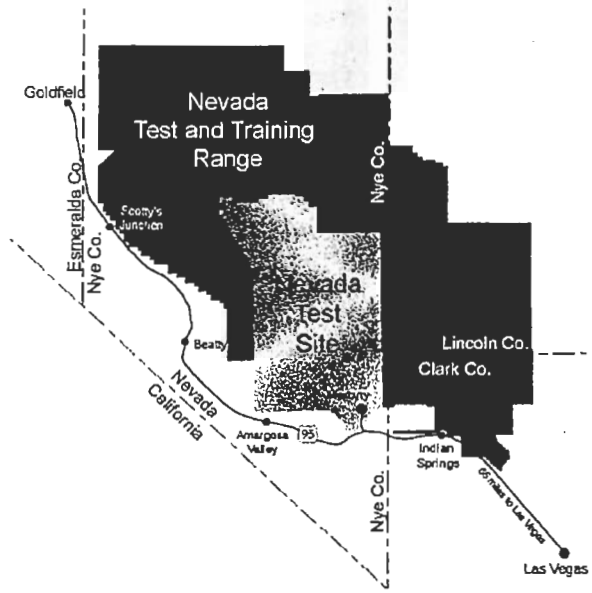
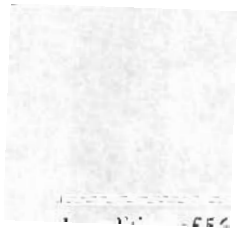


Figure 2-2: NTS Vicinity Map

The sheer expanse of the NTS does not lend itself to showing every facility at every individual area on a single map. A dot map, (see Appendix B Figure B-6) provides an overview of the facilities on the NTS and indicates their status, e.g., active, standby, excess, or demolition. More detailed representations of the facilities at the three main areas of the NTS (Area 23, Area 6, and Area 12), are included in Appendix B as Figures B-7, B-8, and B-9, respectively. The "active" category includes facilities that are operating and operating pending deactivation and decontamination. The "excess" category shown on these maps include facilities that are shut down pending deactivation and decontamination, transfer, deactivation and decontamination in progress, and deactivation.

Table 2-1 provides an overview of the buildings at the NTS. Values for number of facilities and gross square feet of facility demolition at the NTS are based on post facility demolition accomplished by October 2005. Appendix B, Figures B-1 through B-5, present maps of the current and future uses of Mercury (Area 23), Control Point (Area 6), and the current use of Area 6. Footprint reduction efforts in 2003 brought about the decommissioning and



109.250 gross

Although these loads are not associated with the NTS, they have a significant impact on the maximum power capacity available to the site. These outside utility loads have been increasing at a high rate over the past decade and, as a result, the spare capacity of the 138kV transmission system available for NTS loads has decreased. Additional loads at the Yucca Mountain Project, which is scheduled to be serviced by Valley Electric Association's 138kV system, coupled with the growth of the outside load at the Valley Electric Association, may require significant upgrades to the current system capacity within the next four or five years.

Currently, the entire onsite transmission system is limited to 36 megawatts due to voltage impacts. Although the onsite and offsite transmission systems can support approximately 72 megawatts (based on the thermal limits of the smallest conductor), outside utilities can only furnish 36 megawatts because of voltage constraints at the NTS. Bechtel Nevada planning studies show the controlling factor determining this minimum capacity is the voltage level at the NTS Valley Substation. Voltage levels must be maintained above 95 percent of nominal (Industrial Standards in accordance with American National Standards Institute/Institute of Electrical and Electronics Engineers Standards 141 and American National Standards Institute C 84.1) on the entire 138kV system at all times and at all substations to allow adequate secondary voltage levels. If voltage loads are anticipated to exceed 37 megawatts, the NTS would need to negotiate with outside utilities for increased capacity. Current plans for the Yucca Mountain Project to obtain power directly from Valley Electric Association's 138kV system to support their projected new loads will potentially reduce the available power to the NTS to less than 36 megawatts.

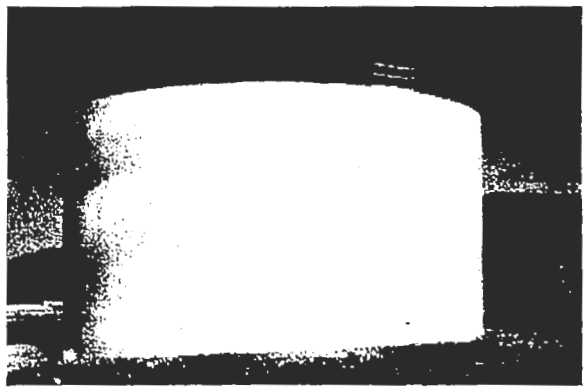
2.1.1.2 Water

The NTS has five water systems, three of which are public systems permitted by the state of Nevada. The other two water systems are non-permit required systems. The NTS water systems consist of 10 operating wells, 24 storage tanks, 10 booster stations, and 160 miles of distribution lines. The systems have evolved over 50 years of test operations with the oldest wells dating to the 1950s. Appendix B, Figure B-12 shows the existing site-wide water system and identifies those portions deemed mission-critical.

The NTS water systems require immediate attention to address regulatory, deterioration, and reconfiguration requirements. Maintaining these systems is critical to the mission-critical facilities and execution of the Defense Program missions at the NTS. The systems provide essential health, sanitation, testing, construction, fire protection and wildlife preservation services that cannot otherwise be efficiently obtained on the sprawling expanse of the NTS.

The public water systems are permitted by the state of Nevada, the regulatory authority for the *Safe Drinking Water Act*. A recently approved *Safe Drinking Water Act* ruling lowers the allowable level of arsenic in drinking water to 10 parts per billion maximum for public water systems. Two wells serving the public water systems in Area 25 at the NTS currently exceed this limit. At the NTS, a graded approach to upgrade the systems to current public water system standards is under development. Either a point-of-use treatment application or a reverse osmosis system was used to remove excess arsenic and maintain compliance to the *Safe Drinking Water Act* arsenic standard that became effective in January 2006.

The NTS water systems are in the final stages of their life expectancy. Assessments of the water systems conducted from FY 2002 through FY 2004 show a status of less than adequate to poor condition for wells, tanks, booster stations, and pipelines, i.e., all



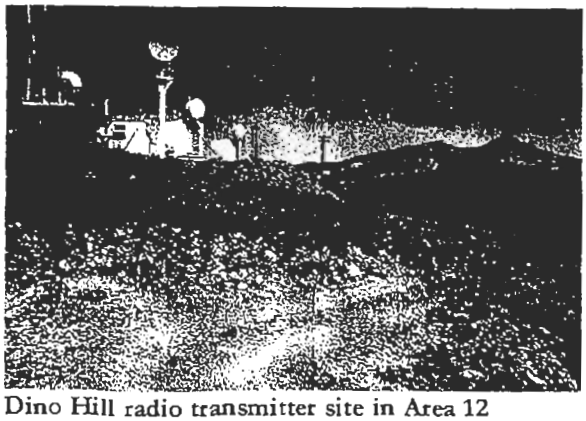
Refurbished Mercury water tank, looking west

elements of the s

critical information among NNSA, the national laboratories, and other federal agencies that use NNSA/NSO facilities for experiments, testing, training, and demonstration of defense systems and advanced high hazard technologies.

Localized telecommunication/information technology infrastructure requirements on specialized project sites (such as U1a, the Non-Proliferation Test and Evaluation Complex, and the National Center for Combating Terrorism) continue to grow in capability and complexity in order to meet national laboratory and other federal agency mission requirements. However, the telecommunication/information technology backbone infrastructure at the NTS has failed to maintain pace with evolving requirements. Scientific and operational information is being generated and gathered using the latest technologies at each site, yet the NTS backbone infrastructure is dated 10-30 years technologically. In addition, the physical media that makes up the backbone has been significantly degraded in many locations due to age and the harsh desert environments.

These deficiencies in the backbone infrastructure represent a significant impediment to exploiting the full potential of the NTS. The Stockpile Stewardship, National Security Response and Combating Terrorism programs are most constrained by current backbone infrastructure limitations.



Dino Hill radio transmitter site in Area 12

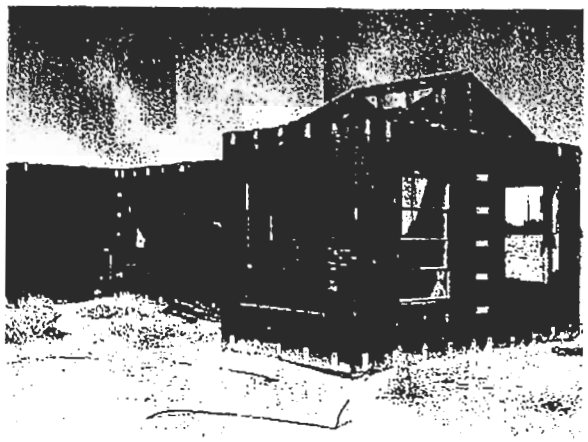
2.1.1.5 Historic Facilities

Human habitation of the NTS area began at least as early as 10,000 years ago. Various indigenous cultures occupied the region in prehistoric times. The survey of less than 5 percent of the NTS area has located more than 2,000 archaeological sites, which contain the only information available concerning the prehistoric inhabitants. The site types identified include rock quarries, tool-manufacturing areas, plant-processing locations, hunting locales, rock art, temporary camps, and permanent villages. While major springs provided perennial water, the prehistoric people developed strategies to take advantage of intermittent fresh water sources in this arid region. In the nineteenth century, at the time of initial contact, the area was occupied by Paiute and Shoshone Indians. Prior to 1940, the historic occupation consisted of ranchers, miners, and Native Americans. Several natural springs were able to sustain livestock, ranchers, and miners. Stone cabins, corrals, and fencing stand today as testaments to these early settlers. The mining activities included two large mines: one at Wahmonie, the other at Climax Mine. Prospector claim markers are found in these and other parts of the NTS.

Native Americans coexisted with the settlers and miners, utilizing the natural resources of the region and, in some cases, working for the new arrivals. They also maintained a connection with the land, especially areas important to them for religious and historical reasons. These locations continue to be significant to the Paiute and Shoshone Indians.

The National Historic Preservation Act of 1966, the Archeological Resources Protection Act of 1979, and the regulations related to these laws direct federal agencies to identify, inventory, and manage the cultural resources under their stewardship. The National Historic Preservation Act also requires consultation with interested parties, especially Native Americans, in regard to historic preservation activities and proposed decisions affecting cultural resources. Cultural resources surveys are conducted at the NTS to meet the requirements of the National Historic Preservation Act and the Archeological Resources Protection Act. The surveys are completed prior to proposed projects that may disturb or otherwise alter the environment. In cases when project activities will adversely affect properties eligible for inclusion in the National Register for Historic Preservation, actions to mitigate the effects are required by law. During FY 2001, mitigation was completed for ten buildings that were to be demolished and eligible for inclusion on the National Register for Historic Preservation. In all ten cases, mitigation consisted of preparing

Historic American Engineering Record documentation for each building. This documentation is prepared in consultation with the National Park Service and upon acceptance, is archived in the Library of Congress to serve as the permanent record for the buildings. Historic American Engineering Record documentation was completed for five buildings within the Frenchman Flat Historic District in Area 5 that were demolished in FY 2002. Four were pumping stations (Well 5 Booster Stations 1, 2, 3, and 4), and one was the switching station for the timing and firing of the atmospheric tests (Building F-370). Historic American Engineering Record documentation also was completed for the primary buildings at the Reactor Maintenance, Assembly, and Disassembly facility (Building 3110), Test Cell A (Building 3113/3113A), and Test Cell C (Building 3210) in Area 25; Pluto (Building 2201) in Area 26; and Super Kukla (5400/5400A) in Area 27. Reactor Maintenance, Assembly, and Disassembly and the test cells were used in the testing and development of nuclear reactors for rocket propulsion into space. At the NTS, this research was conducted by the Los Alamos National Laboratory from the late 1950s to the early 1970s. Building 2201 was the reactor disassembly building for the Lawrence Livermore National Laboratory's Pluto program that ran from the late 1950s to early 1960s. The goal of this program was to develop and test a nuclear reactor for a ramjet propulsion system. The primary building at the Super Kukla facility contained a nuclear reactor for testing nuclear device components for their response to neutron burst exposure. It was built in 1964 and used by Lawrence Livermore National Laboratory until 1979.



Historical glass house building located on the NTS

The U.S. Department of Energy Order 450.1 "*Environmental Protection Program*," requires cultural resources compliance and monitoring for activities and programs conducted at the Nevada Test Site. The Cultural Resources Management program has been established and is implemented by the Desert Research Institute on the Nevada Test Site to meet this requirement. The Cultural Resources Management program is designed to:

- Ensure compliance with all regulations pertaining to cultural resources on the NTS.
- Inventory and manage cultural resources on the NTS.
- Provide information that can be used to evaluate the potential impacts of proposed projects and programs to cultural resources on the NTS.

The geographical scope of a project is determined before surveys, inventories, or historical evaluations proceed.

In 2003, three surveys were conducted for proposed projects: (1) Phoebus 1A Arc and Kiwi Transient Nuclear Test Arc Project Areas (2) the Soil Stabilization Demonstration Project Area and (3) the Horned Viper Project Areas. Seven prehistoric archaeological sites were located within these project areas. During earlier surveys, three of these sites had been determined eligible to the National Register and the site forms for these sites were updated with current information. One new site was identified and determined eligible to the National Register and three did not meet the eligibility requirements. Project activities avoided the eligible sites.

A cultural resources survey and monitoring effort was conducted at the location of the Egg Point Wildfire in Area 12. Most of the fire zone had been surveyed several years ago. The area that was not surveyed was examined for cultural resources and no new sites were located by this effort. The fire was near or crossed six known National Register eligible sites. All six prehistoric archaeology sites are intact and retain their integrity. Another prehistoric archaeology site, previously determined ineligible for the National Register, was relocated. As a result of the removal of the vegetation, more of the site was visible and it was reevaluated and determined eligible to the National Register.

There were two cultural resources inventories conducted in FY 2003. The ongoing survey and inventory of the prehistoric and historic remains at Tippipah Spring continued in FY 2003, and the survey of the historic nuclear testing structures on Yucca Dry Lake was completed. A Yucca Lake Historic District was proposed for National Register eligibility. The district contains 22 structures and 8 features with 15 of these properties contributing to the district.

Two historic evaluations were conducted in FY 2003. Kay Blockhouse, the instrumentation bunker for the first atmospheric test at the NTS had previously been determined incligible to the National Register. The location was reexamined and reevaluated and its status has been changed to a property eligible to the National Register. The train cars at the Radioactive Material Storage Facility were evaluated for eligibility. These cars were used in the nuclear rocket testing program from the late 1950s to early 1970s and some contain superstructures designed specifically for the tests. The facility and the cars were determined eligible to the National Register.

Kay Blockhouse

There were no determinations of adverse effect to cultural resources in FY 2003. No mitigation activities were undertaken or were in progress.

General reconnaissance surveys, without systematic field recording, were also conducted in FY 2003 for three projects. They included one well location, several Corrective Action Sites, and NTS buildings no longer used and scheduled for demolition. The well location was near the historic mining town of Wahmonie. It was determined through a field examination of the area that the well and associated activities were within a previously-disturbed zone for which a cultural resources survey report had been prepared in the 1990s. Numerous Corrective Action Sites have been identified on the NTS for remediation or cleanup and some of these have historical value. Descriptions and photographs of proposed Corrective Action Sites were reviewed and some warranted field examination. After a visual examination of the areas, several were determined to have historic value related to nuclear testing and are to be left in place for future recording efforts. Buildings proposed for demolition or removal were visited and photographed with historic evaluation work pending for several. Also, the technical report on the Bower Cabin was finalized. The NTS Archaeological Collection contains over 400,000 artifacts and is curated in accordance with *Title 36 Code of Federal Regulations Part 79*. For the past decade these materials and the associated records have been housed in a remote facility. In FY 2003, the artifacts were moved into the newly constructed Frank H. Rogers Science and Technology Building in Las Vegas, that provides additional security and environmental controls for the collection. Archaeologists, American Indians, NNSA/NSO personnel, and facilities staff worked on the move from the remote facility to the new building. The boxes of artifacts were logged in and out of the facilities and the move was accomplished without incident. Following the relocation of the artifacts, a draft of new curation procedures was completed and distributed for review.

2.1.2 Auxiliary Site

2.1.2.1 North Las Vegas Facility

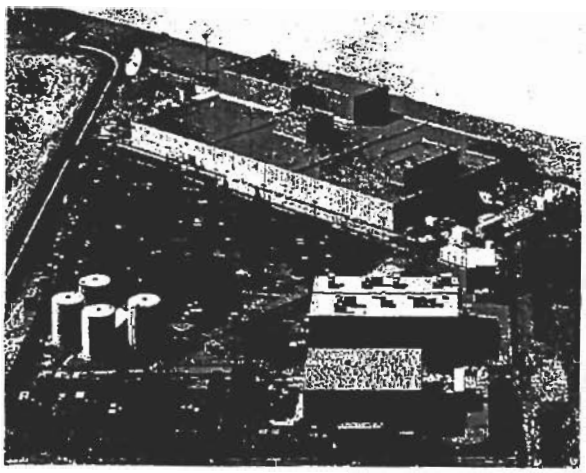
The North Las Vegas Facility houses many of the NTS project management, diagnostic development and testing, designing, engineering, procurement, and environmental compliance activities. The North Las Vegas Facility consists of 80-acres located along Losee Road, parallel to and a short distance west of Interstate 15 (Figure 2-3). This facility is buffered on the north, south, and east by general industrial zoning. The western border separates the property from fully developed, single-family residential-zoned property.

Table 2-3 provides an overview of the buildings at the Cheyenne Facility. Facility and infrastructure maintenance is provided by the facility owner who maintains the facilities in good or better condition. After analyzing the mission requirements, there are no requirements for additional building space or land acquisition in this planning period.

Table 2-3: Cheyenne Facility Overview

Number of Buildings	Number of Trailers	Gross Square Foot	Acres	Ownership	Employee Population
2	0	226,758	N/A	Lease	622

2.1.2.3 Remote Sensing Laboratory – Nellis



Remote Sensing Laboratory – Nellis

The Remote Sensing Laboratory - Nellis provides emergency response resources for weapons-of-mass-destruction incidents. The Remote Sensing Laboratory - Nellis also designs and field tests counter-terrorism/intelligence technologies. The laboratory also has the capability to assess environmental and facility conditions using complex radiation measurements and multi-spectral imaging technologies. The Remote Sensing Laboratory - Nellis occupies six buildings and three trailers on approximately 35 secured acres at the Nellis Air Force Base in Las Vegas, Nevada. The six NNSA/NSO buildings were constructed on property owned by the U.S. Air Force. There is a Memorandum of Agreement between the U.S. Air Force and the NNSA whereby the land belongs to the Air Force, but is under lease to the NNSA for 25 years (as of 1989), with an option for two 25-year extensions. The laboratory is approximately 8.5 miles northeast of the Las Vegas city center, and approximately 7 miles northeast of the North Las Vegas Facility.

Table 2-4 provides an overview of the buildings at the Remote Sensing Laboratory - Nellis. Appendix B, Figures B-16 and B-17 show the existing and future site plan for the Remote Sensing Laboratory - Nellis, respectively.

The added security and logistical convenience of being adjacent to the Nellis Air Force Base runway is particularly advantageous for accommodating NNSA/NSO's nuclear emergency response activities. Services are provided through a service agreement. This agreement also allows access to and use of the runways.

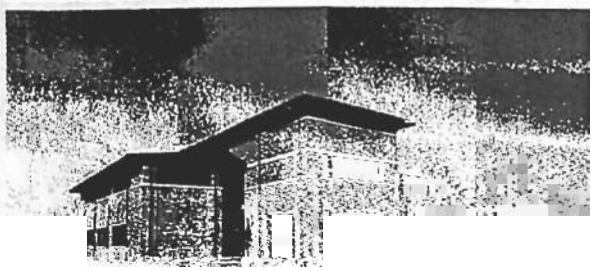
After analyzing the mission requirements, an additional 56,000 square feet of building space for a technical and support facility have been identified but is not funded in this planning period. This additional facility space is required to house additional administrative offices, laboratories, meeting rooms, and storage facilities. This additional space is necessary because the Technical Operations Department mission, and related personnel and equipment, have increased tremendously since the events of September 11, 2001. There are no requirements for land acquisition in this planning period.

Table 2-4: Remote Sensing Laboratory – Nellis Overview

Number of Buildings	Number of Trailers	Gross Square Foot	Acres	Ownership	Employee Population
6	3	165,848	N/A	Lease	279

2.1.2.4 Remote Sensing Laboratory – Andrews

Like the Remote Sensing Laboratory - Nellis, the Remote Sensing Laboratory - Andrews provides emergency response resources for weapons-of-mass-destruction incidents. The laboratory also has resources that can be used to assess environmental and facility conditions using complex radiation measurements, and resources to provide protection systems for critical infrastructure. The Remote



Los Alamos Operations also has a satellite location supporting Sandia National Laboratories in Albuquerque, New Mexico at Sandia National Laboratories' Technical Area IV location on Kirtland Air Force Base. Approximately 16 Bechtel Nevada permanent residents in Albuq uerque and 6-10 additional visiting experimentalists are currently located in two double-wide mobile offices owned by Bechtel Nevada (24' x 60' each, with 2490 sq ft of usable office and laboratory space).

Los Alamos Operations

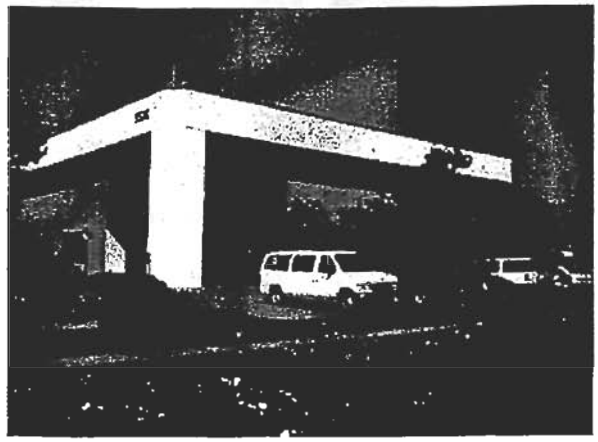
Table 2-7 provides an o verview of the buildings at the Los Alamos Operations. This does no t reflect satellite location facilities and personnel. After analyzing the mission requirements, there are no requirements for additional land acquisition in this planning period.

Table 2-7: Los Alamos Operations Overview

Number of Buildings	Number of Trailers	Gross Square Foot	Acres	Ownership	Employee Population
1	0	50,492	N/A	Lease	84

2.1.2.7 Special Technologies Laboratory

The Special Technologies Laboratory provides specialized expertise in radiation detection and spectroscopy, applied ph ysics, software and f irmware, and compact low-power electronics. The Special Technologies Laboratory is located in Sant a Barbara, California, near the campus of the University of California at Santa Barbara. The three buildings are leased facilities, with utilities provided by local utility companies. Facility maint enance is provided by t he facility o wner.



Special Technologies Laboratory

Table 2-8 provides an o verview of the buildings at the Special Technologies Laboratory. Af ter anal yzing the mission r equirements, the Special Technologies Laboratory requires an additional 11,000 – 12,000 square feet to accomplish their current mission in this planning period. In addition, National Security Response requires improvement or replacement of approximately 18,000 square feet of space on the 46,000 square feet of land leased from the City of Santa Barbara. Ten buildings and no tr ailers are currently located on that leased land. Bechtel Nevada is responsible for building maintenance.

Table 2-8: Special Technologies Laboratory Overview

Number of Buildings	Number of Trailers	Gross Square Foot	Acres	Ownership	Employee Population
10	0	55,801	N/A	Lease	55

2.2 Site Maps

This section includes color-coded maps of the NTS and t he North Las Vegas Facility . Bo th current and future facility maps ar e presented in Appendix B. Facilities at each site that are operating, yet pending Deactivation and Decontamination, are indicated.

Highlight

From February 2 to April 29, 2005, St oller-Navarro Joint Venture coordinated an extensive effort to clear munitions and explosives of concern remaining at Areas 7 and 18 on the NTS. The objective of this project was to safely locate, identify, remove, destroy, detonate, and/or finally dispose of these materials below ground.

In order to find these potentially dangerous materials, technicians used special, anomaly-finding equipment. A device known as a towed array, which consists of three high-sensitivity metal detection sensors, was used to perform digital geophysical mapping. A global positioning system, hand-held magnetometers, and other metal detectors, were also used.

Materials with the potential for explosion and unexploded ordnance were evaluated to determine whether they could be safely moved to a detonation area or required detonation in place. Crews proceeded extremely carefully when working with the munitions and explosives of concern materials. The items in question were visually examined for markings and other external features such as size, shape, and external fittings. Unexploded ordnance and unexploded munitions as well as explosives of concern items were handled by qualified personnel only, and activities were restricted to daylight hours. As materials were removed, the remaining holes in the ground were rechecked to ensure no other material remained, and the holes were refilled and packed.

After all site reconnaissance and intrusive collection activities were completed, all recovered munitions and explosives of concern items were detonated. The team performed well over 6,000 excavations and identified more than 1,000 munitions and explosives of concern.

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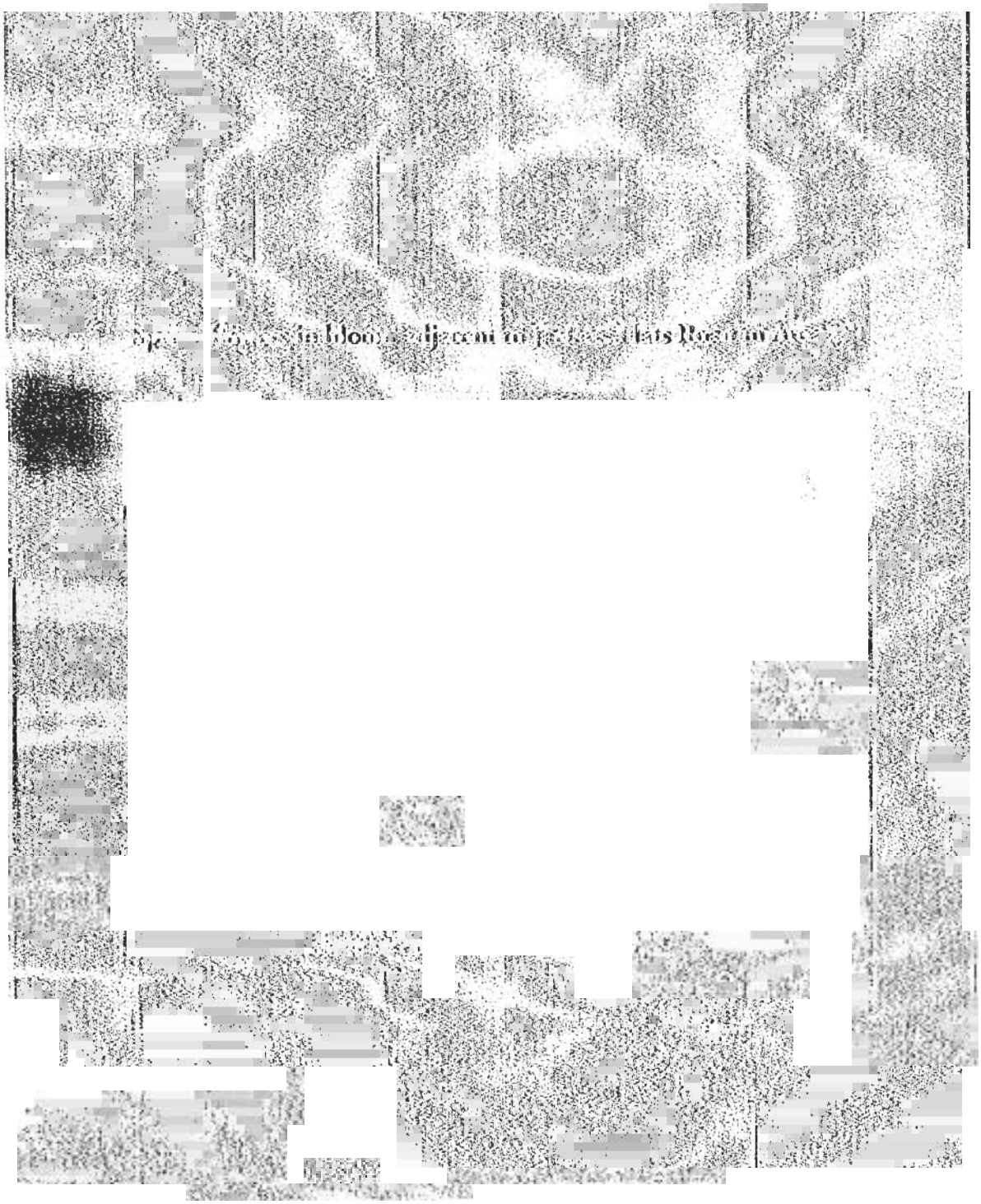
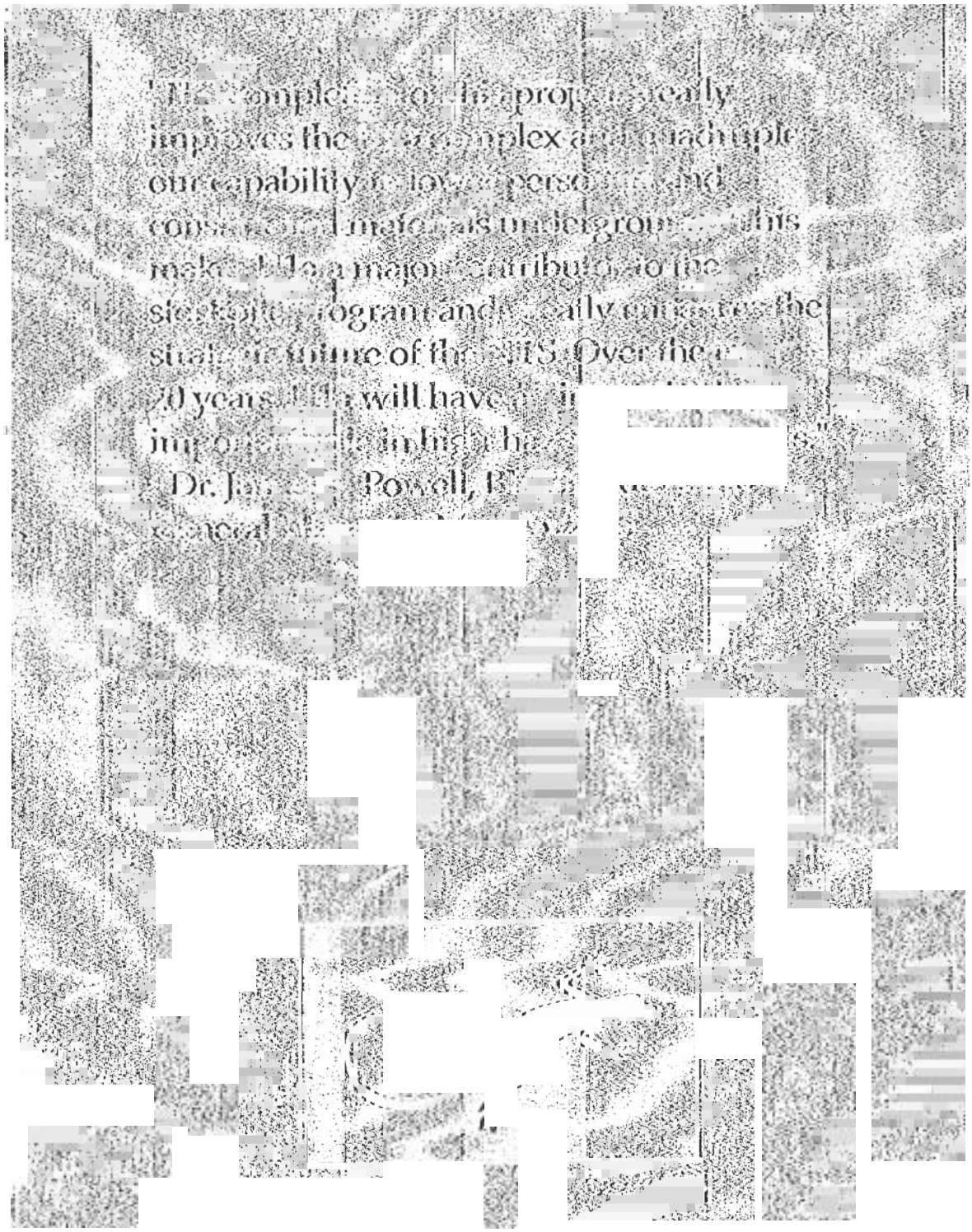




3.0 Mission Needs/Program Description

3.1 Current Mission, Programs, and Workload

Section Overview

- Discussed National Stockpile Stewardship Program with campaign details
- Describes Readiness in Technical Base and Facilities with facility details
- Discusses National Security Response Program and Operations with focus area and facility details
- Discusses Environmental Management Projects and support facilities
- Defines mission-critical facility linkages to Infrastructure mission needs
- Presents projected future programs and missionsimpacts

The Nevada Test Site (NTS) and associated activities draw together a unique team comprised of the U.S. Department of Energy, National Nuclear Security Administration/Nevada Site Office (NNSA/NSO), Bechtel Nevada, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Sandia National Laboratories to support Stockpile Stewardship and related multi-program activities for the NNSA while maintaining the ability to resume underground nuclear testing. The primary NNSA/NSONational Security mission is to support the Stockpile Stewardship Program for the NNSA in the execution of subcritical and other weapons physics experiments, nuclear test readiness, emergency response training and demonstration for defense systems, advanced high-hazard operations, and national security experimental programs. The NNSA/NSOprovides the direction and oversight to execute the complex coordination to support the mission requirements between all the organizations. Bechtel Nevada is responsible for providing much of the programmatic infrastructure, personnel, testbed, and diagnostics needed to execute the programmatic work. Bechtel Nevada manages the resources, facilities, and infrastructure that make up the NTS and the other supporting sites in California, Nevada, New Mexico, and Washington, D.C.

The work performed by Bechtel Nevada is grouped into two major programs: Stockpile Stewardship Programs and Operations and National Security Response Programs and Operations. As shown in Figure 3-1, multiple projects and activities are performed under each of these programs to support mission accomplishments.

The NNSA Defense Program scope of work for the NTS is derived from the NNSA Strategic Plan, the Future Years National Security Program and the Science Campaigns, Directed Stockpile Work and Readiness in Technical Base and Facilities plans. These plans written by the laboratories, plants, and the NTS reflect the strategic and tactical objectives of the NNSA in maintaining the nuclear stockpile. Bechtel Nevada and the National Weapons Laboratories refine the scope of work and areas of responsibility between one another to execute the NTS experiments in support of the NNSA plans.

Bechtel Nevada's facility and infrastructure planning activities ensure that the NTS can offer appropriate project locations and necessary facilities, services, and infrastructure. These support and enhance existing and planned work activities to enhance the NTS as a Defense Program site for weapons experimentation and nuclear test readiness. Bechtel Nevada efforts also are focused on creating a sustainable future by developing a broad and varied project base that complements Stockpile Stewardship mission capabilities.

Special
Technologies
Laboratory

The following sections of this chapter discuss these programs, define their strategic objectives, and highlight their major projects and/or work activities, particularly as they relate to NTS facilities and infrastructure systems.

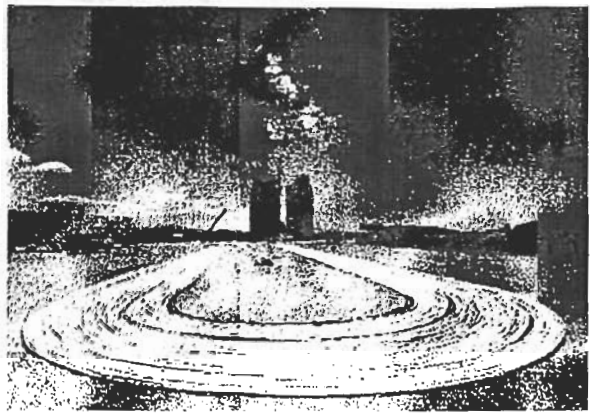
3.1.1 Stockpile Stewardship Programs and Operations

The Stockpile Stewardship Programs and Operations encompasses stockpile stewardship activities including directed stockpile work and activities in support of NNSA Campaigns, nuclear test readiness activities, infrastructure activities, maintaining mission-critical facilities in a ready state, and all site operations.

The Presidential Decision Directive instructs NNSA, the U.S. Department of Defense, and the Office of Management and Budget Evaluation to ensure sufficient resources are devoted to certify and maintain the viability of the nation's enduring stockpile. Furthermore, the *NNSA Strategic Planning Guidance for Fiscal Years 2007-2011* establishes the 5-15-year future planning environment, provides priorities and specific program direction and initiatives for the planning period, tasks specific analyses with programmatic implications, and provides a mechanism for communicating the vision for an integrated NNSA program plan to organizations outside NNSA.

The NNSA/NSO implements the Stockpile Stewardship Program at the NTS to obtain required nuclear experimental data, and to support the ability to resume nuclear weapons testing and experimentation through the following:

- Maintaining a fully-supported test bed infrastructure at the NTS for defense-related nuclear and national security experiments, as conducted by the national weapons laboratories and other experimenters.
- Maintaining the capabilities (technologies, staff skills, equipment, and infrastructure) to resume underground nuclear weapons testing within 24 months of receiving Presidential direction to do so.
- Collecting physical data from high-hazard experiments to define first principle understanding of the stockpile and validate simulation codes.



Unicorn Subcritical Experiment towers and cables

3.1.1.1 National Stockpile Stewardship Program

Bechtel Nevada activities supporting the Stockpile Stewardship Program are funded through the NNSA, Defense Programs. Major elements of the National Stockpile Stewardship Program in which the NTS participates are Directed Stockpile Work and three NNSA Campaigns. These elements are described below.

3.1.1.1.1 Directed Stockpile Work

The primary goal of the Direct Stockpile Work Research and Development Program is to ensure that the nuclear warheads and bombs in the U.S. Nuclear Weapons Stockpile are safe, secure, and reliable. The NTS Direct Stockpile Work scope falls within the Stockpile Services Direct Stockpile Work activities which support multiple weapons systems, advanced concepts, studies and other Research and Development to support future stockpile requirements. The NTS scope of work, that supports Direct Stockpile Work Research and Development Program Stockpile Services, is to develop and execute subcritical experiments and other highly diagnosed dynamic experiments, as defined by the Principle Investigators of the National Laboratories in support

of their certification milestones. The work scope includes support for subcritical and high explosive pulsed-power experiments, provides test bed construction development and design, and procurement and operation of diagnostics systems. Also included are diagnostic development activities required to support future experiments, including control systems, data acquisition, and data analysis.

Lawrence Livermore National Laboratory Program

The Lawrence Livermore National Laboratory subcritical experiments program provides unique data on the material properties of plutonium when shocked by a high-explosive detonation. The experiments are conducted in sealed chambers or confinement vessels specifically designed to contain the expended plutonium during and after the detonation. Diagnostics are tailored to the specific experiments.

The Lawrence Livermore National Laboratory subcritical experiments program plan is switching to a series of High Explosive Pulsed-Power experiments. The High Explosives Pulsed-Power program is designed to measure the equation-of-state of plutonium over a pressure range of interest. Samples of special nuclear materials will be immersed in a high magnetic field which, in turn, will lead to magnetic pressure in the sample. To reach the pressures of interest, electrical currents of many mega-amperes will be required. Lawrence Livermore National Laboratory will use a High Explosives Pulsed-Power generator to generate the required current pulses.

Outyear scope is expected to include the following:

- FY 2007: Three full function experiments at the Big Explosives Experimental Facility.
- FY 2008: Three full function experiments at the Big Explosives Experimental Facility.
- FY 2009: Three full function experiments at the Big Explosives Experimental Facility.
- FY 2010: Tunnel activity - one electromagnetic pulse experiment; one full function experiment; one plutonium experiment.
- FY 2011: Tunnel activity - two plutonium experiments.

Los Alamos National Laboratory Program

Subcritical Experiments

- Support to the Los Alamos National Laboratory's joint milestone for developing the equation of state for Plutonium.
- Refurbish the Cygnus machines in the U1a 05 drift.
- Prepare the 05 drift diagnostic area for a series of subcritical experiments to be conducted in vessels behind the Armando barrier in FY 2007.
- Support for Los Alamos National Laboratory's effort to develop and field large bore powder guns.

Subcritical Experiment Research and Development

- Develop new pulsed-power based radiographic technologies to meet the evolving radiography source requirements of Stockpile Stewardship.
- Assist Los Alamos National Laboratory with the development of a Dense Plasma Focus neutron source of sufficient energy to measure the reactivity of special nuclear materials.

Diagnostic Development

- Support Los Alamos National Laboratory by developing and providing a variety of instrumentation, sensors, data acquisition systems, and data analysis techniques for experiments conducted at the weapons laboratories and the NTS.

Exterior view of the completed U1h shaft headframe and hoisthouse

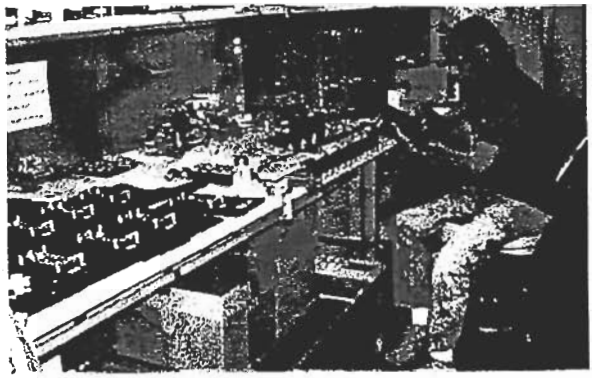
Sandia National Laboratories Program

Sandia National Laboratories has Stockpile Systems responsibilities for all nine weapons in the enduring stockpiles, and Stockpile Services responsibilities for Research and Development Certification and Safety, Research and Development Support and Advanced Studies including Reliable Replacement Warhead, Responsive Infrastructure, and Robust Nuclear Earth Penetrator if funded. In concert with Sandia National Laboratories, the NTS support program's effort is to provide NTS technical capability in Arming and Firing technology; pulsed power component development for advanced radiation sources; and war reserve component testing in hostile environments as part of Sandia National Laboratories' non-nuclear weapon certification, weapons effects, and stockpile surveillance missions. Work elements include:

- Advanced subcritical experiments diagnostic development support, including Velocity Interferometer System for Any Reflector for curved surfaces and complex shapes, and continuing efforts in pyrometry.
- Containment and other U1a instrumentation supporting subcritical experiments.
- Other component experiments/arming, fusing, and firing.
- Arming and firing.
- Pulsed power component testing.
- Linear transformer design source development.
- Gas gun diagnostics and experiments.

3.1.1.1.2 Campaigns

Bechtel Nevada actively supports three NNSA Campaigns: (1) Science Campaign, (2) Inertial Confinement Fusion and High Yield Campaign, and (3) Pit Certification and Manufacturing Campaign. These campaigns focus on scientific and technical efforts to develop and maintain capabilities critical for continued certification of the weapons stockpile. These campaigns are technically challenging, multifunctional efforts that involve definitive milestones, specific work plans, and specific end dates. Following are brief discussions of each of the three campaigns.



Assembling high-voltage semiconductor switches

Science Campaign Subprograms

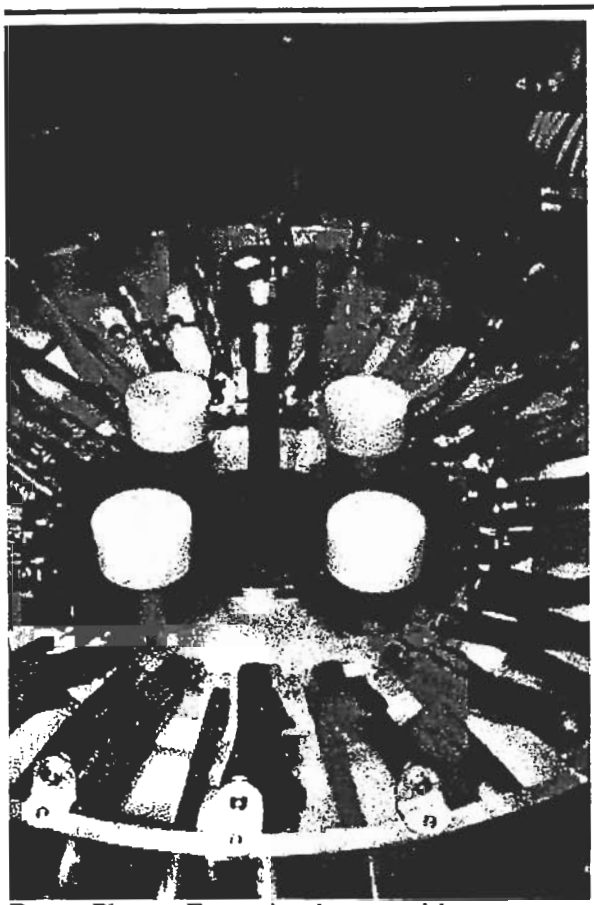
Science Campaign Subprogram 1 - Primary Assessment Technology

The Primary Assessment Technology Campaign will contribute to fulfillment of the following goals and objectives of the Science Campaign Program Plan:

(1) Develop knowledge, tools, and methods to assess, with confidence, the performance of a nuclear weapon without further underground testing.

- Develop capabilities and understanding necessary to apply Quantitative Margins and Uncertainties as the certification methodology for the nuclear explosive package.
- Assess uncertainties in the prediction of weapons performance as the basis for priorities for further improvements in models and physical research.
- Develop and experimentally validate models of physical properties and processes to improve the fidelity of Accelerated Strategic Computer Initiative codes.
- Develop improved capabilities to model weapon outputs.
- Develop an assessment of the lifetime of pits for each system in the stockpile.

(2) Develop and maintain essential scientific capabilities and infrastructure in nuclear weapons unique technologies.



Dense Plasma Focus Accelerator with Gamma/Neutron Detector

- Operate a national hydrotest program and supporting facilities and infrastructure, including Dual Axis Radiographic Hydrodynamic Test, Lawrence Livermore National Laboratory Site 300, and U1a.
- Maintain capabilities to support understanding of the properties of the [illegible] including [illegible]
- Establish and maintain scientific collaborations and exchanges in areas supportive of the NNSA mission with the U.S. Department of Energy National Laboratories, and other national and international scientific institutions, including foreign entities with which NNSA has mutual defense agreements.
- Develop and train the next generation of primary designers.

Work in the Primary Assessment Technology Campaign is described and funded under the following Major Technical Efforts (MTEs). Note that the MTE structure has changed since FY 2005. The new structure follows the Primary Certification Plan and is intended to help highlight the relationship between Campaign 1 deliverables and NNSA mission requirements.

- MTE 1.0 Certification and Quantification of Margins and Uncertainty
- MTE 1.1 High Explosive Initiation/Detonation/ Performance
- MTE 1.2 Implosion Hydrodynamics
- MTE 1.3 Reactivity/Fission
- MTE 1.4 Boost Physics/Output
- MTE 1.5 Surety

Lawrence Livermore National Laboratory Program

Certification and Quantification of Margins and Uncertainty (MTE 1.0)

The NTS Diagnostic Data Analysis scope will consist of three tasks: (1) analyze experimental data (Fabry-[illegible] oscilloscope film [illegible]

experimental project). Joint Actinide Shock Physics Experimental Research work entails procurement and fabrication of consumable experiment parts (Primary Target Chambers, ultra-fast closure valves, etc.) and execution/data acquisition of special nuclear materials and surrogate materials experiments utilizing a variety of diagnostics such as positive interlayered negative and velocity interferometer system for any reflector. Sandia National Laboratories Science Campaign work in support of Isentropic Compression Experiments involves fast velocity interferometer system for any reflector diagnostics development and fielding, developing a preheat capability for liquid metal sample equation of state experiments, containment studies for hazardous materials and special nuclear materials equation-of-state experiments, and advanced dynamic materials diagnostic development such as X-radiography and X-ray diffraction.

Uranium and Other Metals/Surrogates (MTE 2.2)

Activities in MTE 2.2 focus on the determination of the dynamic mechanical properties of stockpile materials, with an emphasis on metals including actinides, surrogates, and other materials. These properties include yield strength, plastic flow, and failure through spallation and ejecta from shocked surfaces. Nowhere are conditions more challenging than in the implosion dynamics of nuclear weapons where materials are subjected to the most extreme conditions (large strain, high strain rates, and high temperatures). MTE 2.2 work scope includes Atlas experiments supporting Los Alamos National Laboratory, diagnostic development, and gas gun experiments (at Los Alamos National Laboratory) as part of Los Alamos National Laboratory Science Campaign activity. Atlas work entails support to hydrodynamic experiment execution such as spall, friction, strength, and Raleigh-Taylor Instabilities series, and diagnostics development (advanced radiography, current and magnetic field measurement, visible imaging, Velocity Interferometer System for Any Reflector, and fiber optic sensors). Los Alamos National Laboratory Science Campaign work involves diagnostics development for the study of equation-of-state, constitutive properties, and phase states of shocked materials, fielding these systems, and collecting data at single and two-stage gas guns and explosive facilities at Los Alamos National Laboratory, Bechtel Nevada's Special Technologies Laboratory, and Joint Actinide Shock Physics Experimental Research, ultimately migrating these diagnostics to Los Alamos National Laboratory subcritical experiments.

Lawrence Livermore National Laboratory Program (MTE 2.2)

- Joint Actinide Shock Physics Experimental Research Experiments: support pending funding the execution of up to 15 actinide experiments during FY 2006 including the execution of three experiments for Los Alamos National Laboratory. Experiments will continue into subsequent years, including fabrication and procurement services for consumables to support events, such as Primary Target Chambers and ancillary expended apparatus such as the Ultra-fast Closure Valve, gate valves, and VAT® valves.
- Phase II Diagnostics: support the development and integration of diagnostics required for future experiments such as Velocity Interferometer System for Any Reflector, Photonic Doppler Velocimetry, and Thermal equation-of-state (High T/low Rho) experiments.

Armando subcritical experiment

Los Alamos National Laboratory Program

Los Alamos National Laboratory Dynamic Shock Experiments

- Build Photonic Doppler Velocimetry for gas gun experiments.
- Use reflectometer on tin gas gun shots.
- Build compact Velocity Interferometer System for Any Reflector for Brookhaven National Laboratory experiments.

- Develop capabilities and understanding necessary to apply Quantitative Margins and Uncertainties as the certification methodology for the nuclear explosive package.
- Develop the ability to certify any aged or rebuilt stockpile primary to within +/- x kilotons.
- Develop and experimentally validate models of physical properties and processes to improve the fidelity of Accelerated Strategic Computer Initiative codes.

(2) Maintain the readiness of the National Nuclear Security Administration to conduct nuclear testing as directed by the President.

- Execute a program of work at the national laboratories that maintains capabilities in technical specialties relevant to the design and preparation of devices and diagnostics for underground testing and the analysis of diagnostic data.

(3) Develop and maintain essential scientific capabilities and infrastructure in nuclear weapons unique technologies.

- Operate a national hydrotest program and supporting facilities and infrastructure including Dual Axis Radiographic Hydrodynamic Test, Lawrence Livermore National Laboratory Site 300, and U1a.
- Maintain capabilities to support understanding of the properties of the dynamic behavior of nuclear weapons materials including Joint Actinide Shock Physics Experimental Research, High Explosive Application Facility, and small scale investigations.
- Conduct relevant scientific investigations at the national laboratories in understanding physical properties and processes required to support the goals of stockpile stewardship.
- Establish and maintain scientific collaborations and exchanges in areas supportive of the National Nuclear Security Administration mission with the U.S. Department of Energy National Laboratories, and other national and international scientific institutions, including foreign entities whom National Nuclear Security Administration has mutual defense agreements.

This is accomplished in the following five major tasks (MTEs): MTE 3.1 is Dual Axis Radiographic Hydrodynamic Test Optimization, MTE 3.2 is Radiographic Simulation and Analysis, MTE 3.3 is Surrogate Materials Program, MTE 3.4 is Advanced Radiographic System Requirements and Technologies, and MTE 3.5 is Vessel Development and Certification.

Los Alamos National Laboratory Program

Dual Axis Radiographic Hydrodynamic Test II (MTE 3.1)

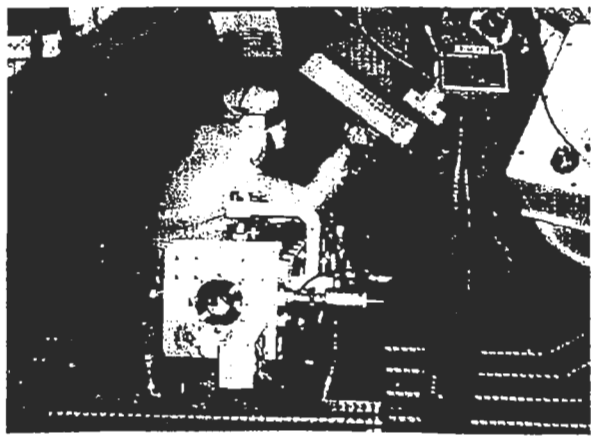
- Bechtel Nevada will continue to provide accelerator diagnostics as Dual Axis Radiographic Hydrodynamic Test II activities focus on the new commissioning plans for the scaled accelerator and cell refurbishment project.

Proton Radiography (MTE 3.4)

- Bechtel Nevada personnel will support experiments at Line C during the 2005-2006 run cycle by providing troubleshooting support during the experiments, image analysis, and reporting.

Science Campaign Subprogram 4 - Secondary Assessment Technology

The goal of the Secondary Assessment Technologies campaign is to advance secondary assessment through development of modern tools and analysis required for identification of performance margins and resolution of uncertainties. Efforts in this campaign are organized by key elements of the sequence of events leading to secondary explosion and output, these elements being:



Secondary certification activities

Sandia National Laboratories Program

The Sandia National Laboratories Diagnostics/Above Ground Experimental Project goal is to partner with Sandia National Laboratories to achieve pulsed-power contributions to the Stockpile program in (1) Diagnostics development and calibration for high-energy density en vironments (principall y for radiation and secondaries, but also of benefit to Inertial Confinement Fusion); (2) Experiment support in application of Z and Z-Refurbishment machine sources to weapon physics; (3) Radiation and hydrodynamic advanced source development; and (4) Maintaining core skills and personnel in high-speed diagnostics in underground test-like environments for underground nuclear t est readiness.

Principle scope areas include (1) Z pinch radiation diagnostic development (X-ray spectrometers; X-ray calibration capabilities; neutron detectors, sources, and imaging capabilities; charge-coupled device readouts for time-resolved detectors currently employing film; maintenance of a "core radiation" diagnostics suite for optical, X-ray, neutron de tectors, and calibr ation capabilities); and (2) Bechtel Nevada provides design, engineering, fabrication, experiment fielding, and data acquisition/analysis support for Sandia National Laboratories activities on the Z and Z-Refurbishment machines.

Initiatives include:

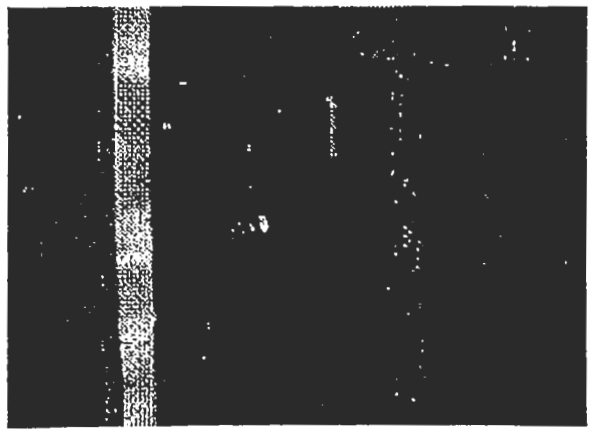
- Optical Diagnostic Development
- X-ray Diagnostic Development
- Neutron Diagnostic Development
- Detector Calibration Support
- Improvements in Data Analysis Capability

Outyear scope includes:

- 10 x improvements in temporal resolution of X-ray diagnostics.
- 10 x improvements in spatial resolution of X-ray imaging and spectr al diagnos tics.
- Support Los Alamos National Laboratory experiments in MTE 4.4.
- Continue development of a high yield Dense Plasma Focus necessary to provide a deuterium-deuterium and deuterium-tritium neutron source for neutron diagnostic development.
- Support Sandia National Laboratories in developing s trategy for radiation, neutr on, and Electromagnetic pulse shielding of National Ignition Facility diagnostics and mitigating the X-ray generated debris produced by National Ignition F acility diagnos tics.
- Support Sandia National Laboratories in executing beryllium melt experiments to validate capsule modeling for National Ignition Facility ignition experiments.

Campaign 5 - Nuclear Test Readiness
NNSA/NSO implemented t he Nuclear Test Readiness Program at t he Nuclear Weapons Laboratories and the NTS to maintain the capabilities (technologies, staff skills, equipment, and infrastructure) to resume underground nuclear weapons testing within 24-36 months of receiving Presidential dir ection to do so. A tr ansition t o an 18-month nuclear test readiness posture began in FY 2003. The end of FY 2006 planned the transition for completion. A 40 percent budget reduction in FY 2006 has pushed the resumption date back to 24 months. Future budget cuts could mo ve the time t o execute the next nuclear test to 36 months or beyond. Nuclear Test Readiness was carried as a k ey component of Science Campaign 1 in FY 2005 and was moved to Science Campaign 5 as a separate entity in FY 2006.

This Nuclear Test Readiness activity is subdivided int o five MTEs. Nuclear Test Readiness includes activities to be executed by t he National Weapons Laboratories and Bechtel Nevada for NNSA/NSO. Thc following discussions of the five MTEs describe only Bechtel Nevada activities.



Staff supporting X-ray source development

Planning (MTE 1) provides for verification of program activities against continuously refined requirements. The approach is to develop potential test plans for the current weapons in the active stockpile; validate test scenarios consistent with annual certification reviews; maintain the Decision Support System for detailed planning; implement project controls; and ensure that necessary test resources are available. Bechtel Nevada provides support to the MTE 1 group through subject matter experts, and the development and maintenance of detailed project schedules.

Authorization Basis (MTE 2) provides documentation and systems to allow project-specific authorization basis documents to be developed within the period between notification to test and test execution. Bechtel Nevada is supporting the analysis of requirements and development of NNSA/NSO expectations for the underground nuclear testing authorization basis.

Diagnostics and Training (MTE 3) includes activities that have the goal of transitioning to a shorter nuclear test readiness posture. In order to support the needs of future underground experiments, diagnostic systems and capabilities will be reviewed and improved where needed to meet this goal. Bechtel Nevada supports this effort by participating with the national laboratories in this review and renewal process. In order to preserve the knowledge and skills necessary to maintain a nuclear test readiness capability, a program of systematic training is being developed by Bechtel Nevada. The program of systematic training includes activities to update diagnostic and recording equipment that has become nearly obsolete; develop and implement underground nuclear testing-specific training for scientists, engineers, and technicians; evaluate the status of current equipment and modern ways of doing old measurements; and develop a bridge between past and future stewardship and advanced concepts. Training has been devised to maintain the core competency of diagnostic technicians in an environment of changing technology and an aging workforce. It provides a vehicle to enable upgrading the workforce level of knowledge about high-speed data acquisition and processing for the "next generation" of personnel and equipment. The result of its implementation will be better services for the entire spectrum of testing from above ground

Centaur Tower and cable way

experiments and subcritical experiments to a full underground nuclear test. This training will consist of classroom instruction and hands-on practical exercises in an electronics laboratory setting. Bechtel Nevada activities within MTE 3 include:

- Nuclear Expertise Development and Retention
- Nuclear Skills Training
- Mentoring
- Diagnostics Development

Facilities and Heavy Equipment (MTE 4) includes activities for maintaining select facilities and equipment needed for fielding an underground nuclear test. Bechtel Nevada is supporting the management of physical assets on the NTS specific to underground nuclear testing. Physical Assets include items such as equipment for transportation, storage, emplacement, and insertion of nuclear devices, as well as containment, security, arming and firing, timing and control, and diagnostic equipment. Nuclear Test Readiness funds the storage and maintenance of unique and specialized nuclear test assets, exercises, system planning, and simulations to confirm readiness capability on an annual basis. Currently, Bechtel Nevada tracks the following readiness assets: 83 facilities; 25,000 pieces of non-expendable diagnostic equipment; 5,550 pieces of diagnostic equipment; 1,600 items in Materials and Inventory; and 600 pieces of specialized Construction Equipment. Periodic testing activities include:

- Oscilloscopes and Cathode Ray Tubes
- Detectors
- Imaging Cameras
- Gas-blocked Cables

Sandia Nati

Sandia National

- Maintenance of nuclear test readiness capabilities.
- Laboratory experiments at the NTS including nuclear explosive operations, assembly of subcritical experiments, and assembly of Joint Actinide Shock Physics Experimental Research targets.
- Damaged nuclear weapons mission.

In mid FY 2002, NNSA determined that the Los Alamos Criticality Experiments Facility, located in Technical Area 18, Security Category I/II and roll-up missions, will be relocated to the NTS. The Los Alamos Criticality Experiments Facility missions support nuclear criticality research, addressing national nuclear issues, training of various national groups in the use of nuclear instrumentation for assay and safe handling of special nuclear materials, and development and calibration of nuclear radiation measurement equipment to detect and identify minute to sizable quantities of nuclear materials. The facility also supports basic research in nuclear chain-reacting systems and facilitates contributions to arms control and treaty verification, waste assay, safeguards and accountability, and environmental restoration.

In mid-2004, NNSA decided to accelerate the move of material, referred to as "early move" to the Device Assembly Facility, associated with the criticality experiments. This interim staging into existing Device Assembly Facility buildings began in September 2004 and is to be completed in 18 months.

To initiate transfer of the Los Alamos Criticality Experiments Facility operations, NNSA directed development of a critical decision (CD)-1 package, including conceptual design for modification of Device Assembly Facility to house the Los Alamos Criticality Experimental Facility missions (four critical assembly machines). During FY 2005, the Criticality Experiments Facility project established a Central Project Office at the Cheyenne Facility. Preliminary engineering, a preliminary Documented Safety Analysis, a Construction Performance Baseline, and accelerated construction of the Service Assembly Facility Guard Station were initiated. The CD-2 package was submitted to NNSA/NSO in June 2005. Following the CD-2 approval in late FY 2005, final design commenced.

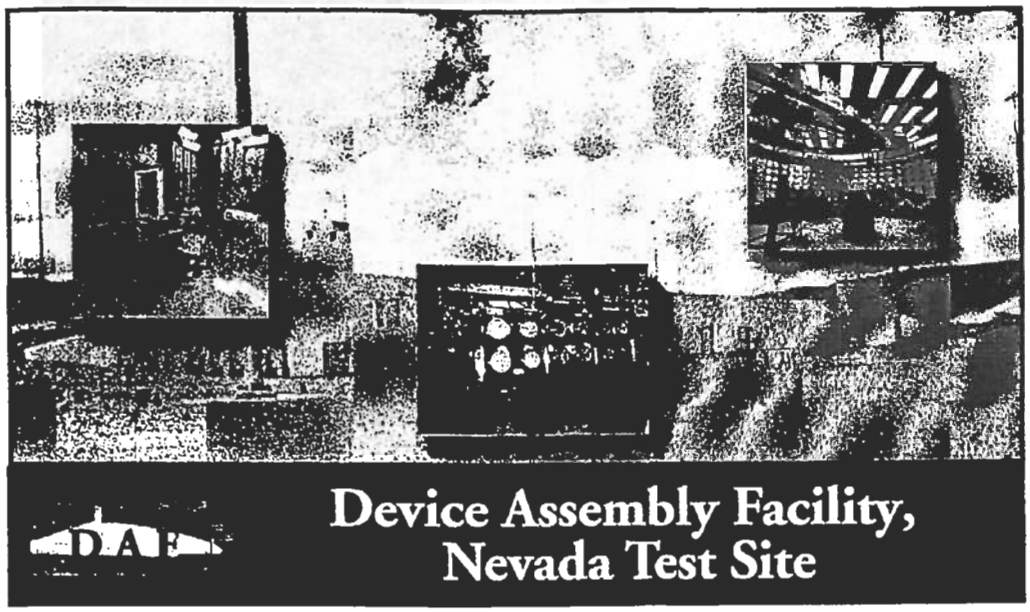
FY 2006 activities will significantly increase to complete final engineering, advanced procurements of selected equipment, and a formal request for CD-3 approval of each Line Item construction, scheduled to start in FY 2007.

Other Device Assembly Facility buildings will be modified later as vaults, as part of the Device Assembly Facility modifications for the Criticality Experiment Facility.

Several projects have been planned that will improve security at the Device Assembly Facility. In FY 2006, commercial gas detection system sensors will be installed at selected locations within the Device Assembly Facility. Central Stentofon intercom system controllers will be replaced; existing intercom stations will be upgraded; and additional stations will be installed at selected locations within the Device Assembly Facility. Also planned at a number of locations is the installment of additional of razor wire, improvement of lighting, providing covers for armored vehicles, and a number of video improvements to improve tactical assessment capabilities.

In FY 2007, a hardened guard station will be constructed on the Device Assembly Facility access road, approximately 2/3 of a mile from the facility. This station will include vehicle search lanes, a vehicle scale, under-vehicle search cameras, tire shredders, explosive detection capability and a remotely operated vehicle barrier. A barrier will be placed around the existing Perimeter Intrusion Detection Assessment System to provide additional delay/denial for vehicles that are attempting to approach the Device Assembly Facility without being properly screened by the protective force. This barrier will contain an alarm system that will annunciate on a breach of the barrier by a vehicle. A cable/tower/pole system will be emplaced in selected areas above the Device Assembly Facility to deny aircraft or airborne adversaries unimpeded access to selected areas on and around the Device Assembly Facility.

In FY 2008, a Device Assembly Facility Perimeter Intrusion Detection Assessment System Sensor System will be replaced, as it is approaching the end of its useful life.



Device Assembly Facility. The Device Assembly Facility, managed and operated by Lawrence Livermore National Laboratory for NSO, is a 100,000 square-foot heavily reinforced concrete structure located within a 19 acre-high security area in Area 6 of the NTS. Lawrence Livermore National Laboratory and Los Alamos National Laboratory nuclear explosives operations are consolidated at this facility. Operations at the Device Assembly Facility include assembly, disassembly, modification, staging, transport, and testing of nuclear components and nuclear explosive devices; preparation of subcritical experiment assemblies; and other unique experiments specified by laboratory project leaders. Device Assembly Facility activities may also include maintenance, repair, retrofit, and surveillance of existing or damaged nuclear explosive devices. The facility consists of office space, laboratories, a machine shop, assembly and high bays, assembly cells, and supporting mechanical and electrical equipment areas. The Device Assembly Facility is the only facility on the NTS capable of safely handling high explosive, nuclear explosive, and special nuclear material assemblies. The Lawrence Livermore National Laboratory actinide handling glove box in the Device Assembly Facility will be used for preparing nuclear targets for the Joint Actinide Shock Physics Experimental Research gas gun. The glove box is expected to become operational in FY 2006. The Device Assembly Facility directly supports Campaigns 1, 2, 12, and Directed Stockpile Work Stockpile Research and Development and is a Readiness in Technical Base and Facilities direct-funded mission-critical facility. The Device Assembly Facility level 3 milestones have been identified to support the overall accomplishment and reporting of level 2 milestones. Los Alamos National Laboratory has identified the need for a design-construction project to provide an operational down draft room facility within the Device Assembly Facility. The project is needed to support subcritical experiments that will be conducted at the NTS in support of stockpile stewardship. Operations in the down draft room facility will include assembly of subcritical experiments and other special assemblies all of which will include handling uncased plutonium components. Los Alamos National Laboratory has selected Bechtel Nevada to design, procure, install, and provide initial start-up testing of the Down Draft Table Facility in the Device Assembly Facility. The operation of the Down Draft Table Facility is critical to the Campaign 12 effort at the NTS. The Down Draft Table is expected to become operational in FY 2006.

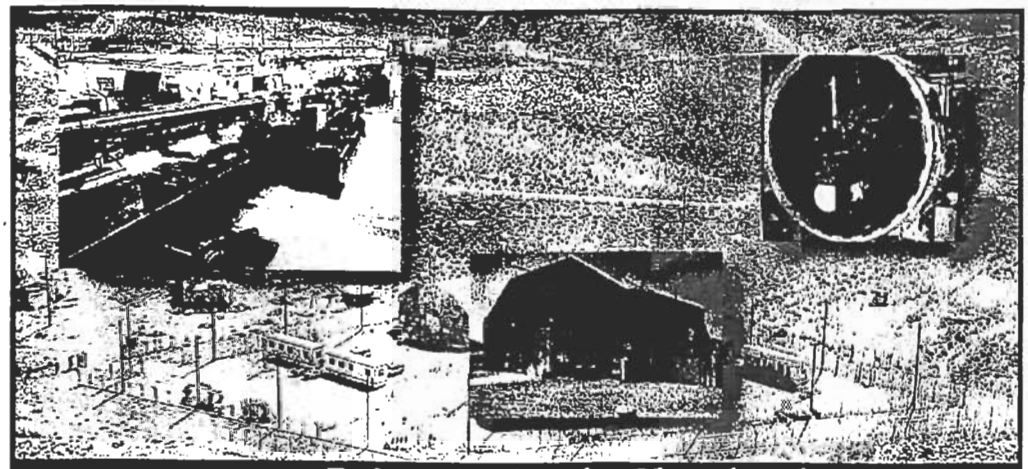
The primary operational objectives under Readiness in Technical Base and Facilities are to operate and maintain the Device Assembly Facility for NTS programs and projects, which include:

U1a Complex, Nevada Test Site

U1a Complex. The U1a Complex, managed for NSO by Los Alamos National Laboratory, is comprised of 33 surface support buildings and trailers, and an extensive series of underground drifts and experiment alcoves mined in alluvium 965 feet beneath the NTS. The underground complex, where the experiments with high explosives and special nuclear materials are conducted, is accessed by the U1a shaft and the newly constructed U1h shaft. This category of experiment is termed "subcritical" because these experiments do not produce self-sustaining nuclear reactions. Although the principal purpose of these experiments is to provide data on the behavior and properties of materials in a dynamic environment, their execution now is an essential part of ongoing nuclear test readiness by exercising portions of various nuclear test readiness functional areas. The primary operational objectives under Readiness in Technical Base Facilities are to operate and maintain the U1a experimental complex in support of Stockpile Stewardship subcritical experiments. U1a directly supports Campaigns 1, 12, and Directed Stockpile Work Stockpile Research and Development, and is a Readiness in Technical Base and Facilities direct funded mission-critical facility.

U1a level 3 milestones have been identified to support the overall accomplishment and reporting of level 2 milestones.

Subcritical experiments are designed to elicit a greater understanding of high explosives properties, material response, and primary and reflected shock structure, and to examine the effects of such engineering features as welds and surface finish on weapon performance. Subcritical experiments also help fill gaps in empirical data on plutonium's high-pressure behavior and measure its high-pressure equation of state values, strength properties, and response to shock. In addition, such experiments are necessary for certification of nuclear weapons, without testing, by collecting data to upgrade and validate computational models. Model validation using subcritical data is essential since computational models are also subject to uncertainties from incomplete physics, uncertainties in material properties, computational symmetry assumptions, and the effects of calculations using discrete elements.

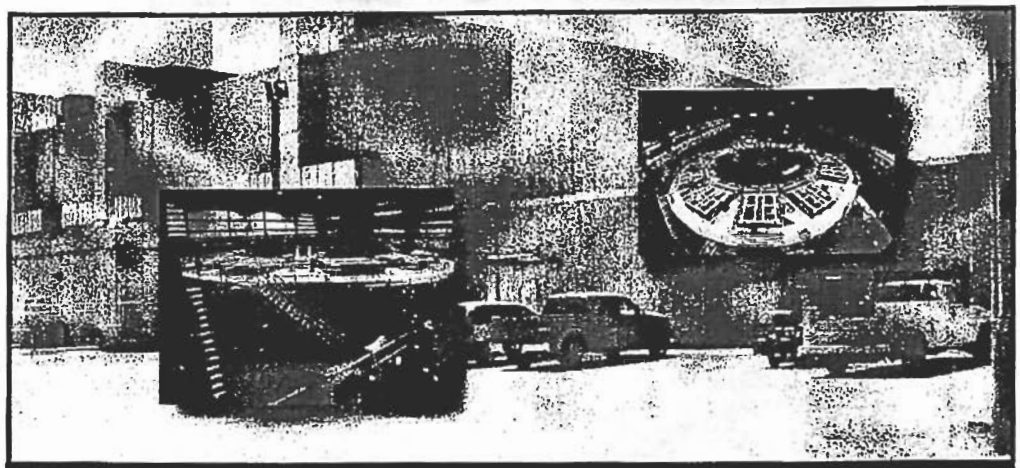


Joint Actinide Shock Physics Experimental Research Facility, Nevada Test Site

Joint Actinide Shock Physics Experimental Research Facility. The Joint Actinide Shock Physics Experimental Research Facility is a two-stage gas gun facility, managed for NSO by Lawrence Livermore National Laboratory, that performs equation of state experiments with special nuclear materials. The Joint Actinide Shock Physics Experimental Research Facility is capable of achieving projectile velocities up to 8 km/sec with near-zero projectile tilt at impact. The Joint Actinide Shock Physics Experimental Research Facility is located in Area 27 of the NTS and is supported by 13 buildings, trailers, and bunkers.

The primary operational objectives under Readiness in Technical Base and Facilities are to operate and maintain the Joint Actinide Shock Physics Experimental Research Facility in support of laboratory experimental programs, projects, and activities, which includes the operation and maintenance of special nuclear material shock physics activities. The Joint Actinide Shock Physics Experimental Research Facility supports Campaigns 1 and 2 and is a Readiness in Technical Base and Facilities direct funded mission-critical facility.

The Joint Actinide Shock Physics Experimental Research Facility provides a dynamic shock environment for the determination of the mechanical properties of stockpile materials (specifically plutonium). Weapons computer codes require complete mechanical properties for constitutive models to accurately simulate material behavior in a nuclear environment.



Atlas Pulsed-Power Facility, Nevada Test Site

Atlas Pulsed-Power Facility. The Atlas Pulsed-Power Facility is maint ained for supporting experiments fielded on the Atlas machine. Atlas is a pulsed power machine for conducting materials properties studies. This machine is designed t o meet a broad range of needs in pr oviding High-Energy Density hydrodynamics data for assisting in the validation of nuclear weapons codes as part of the Stockpile Stewardship Program, and for conducting dynamic materials experiments in the scientific community at large. This machine was relocated from Los Alamos National Labor atory. The facility that houses Atlas at the Ne vada Test Site began construction in FY 2002 in Area 6 and was ready for hardware relocation lat er that same year. The Atlas Pulsed-Power Facility is ne w and in ex cellent condition. Recommissioning was delayed by the Los Alamos National Laboratory shutdown. Atlas is operational following successful completion of phase IV machine characterization experiments, successful fielding of the LD-101 and LD-102 experiments and the resolution of Readiness Assessment and Findings, if an y. Physics experiments began in the last quarter of FY 2005. The last experiments were conducted in March 2006, after which the facility was maintained in a readiness state.

Readiness in Technical Base and F acilities funds t he activities necessary to support the Atlas Pulsed-Power Facility operations and f acility w arm standby as well as acquisition of oper ational spar es and diagnos tics. Also included are operational support, existing facility modif ication, f acility w arm standby, and acq uisition of pulsed-power technology personnel t o support

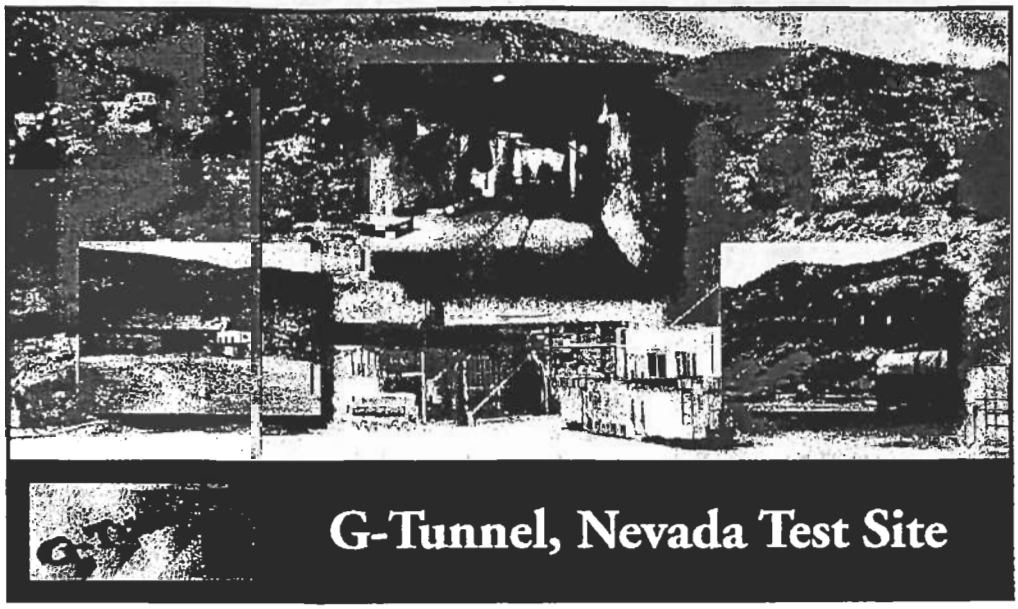
The Atlas machine is designed to meet a broad range of needs in providing high-energy density physics data for assisting in the validation of weapons codes as part of the Stockpile Stewardship Program, and for conducting dynamic materials experiments in the scientific community at large.

High Explosives Facilities, Nevada Test Site

High Explosives Facilities. The Big Explosives Experimental Facility, located in Area 4, is an aboveground high-explosives test bed for weapons physics experiments, shaped charge development, and render-safe technologies. The Big Explosives Experimental Facility is uniquely certified to handle high explosive loads, up to 70,000 pounds, and is currently authorized to conduct advanced high explosive experiments with such hazardous materials as depleted uranium. The facility is comprised of three buildings which include a firing table, a camera bunker, a control/diagnostic bunker, and other support facilities.

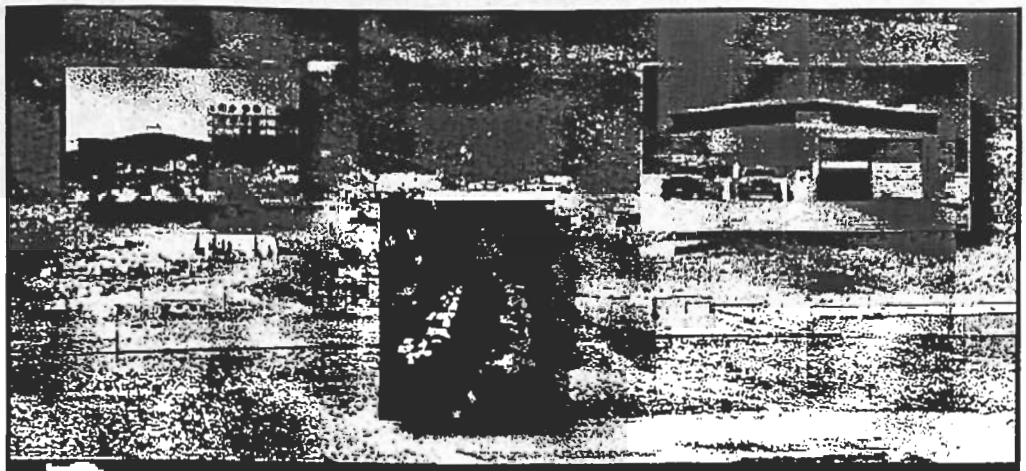
In FY 2005, the diagnostics for the Big Explosives Experimental Facility were upgraded in anticipation of a series of Phoenix-related experiments in support of Directed Stockpile Work.

The Baker Site Facility, managed and operated by Lawrence Livermore National Laboratory for NSO, is located in Area 27 of the NTS and is an explosives staging and storage area used to support high-explosive experiments at the Joint Actinide Shock Physics Experimental Research Facility. The Baker Site Facility provides the capability to receive shipments, safely store explosive materials, assemble or otherwise prepare materials, and transport them to the Joint Actinide Shock Physics Experimental Research Facility. The Baker Site Facility also supports other programmatic requirements. The Baker Site directly supports Campaigns 1, 2, and 12, and Directed Stockpile Work Stockpile Services and is a Readiness in Technical Base and Facilities direct funded mission-critical facility.



G-Tunnel, Nevada Test Site

G-Tunnel. G-Tunnel is maint ained in an operational standby mode to support the mission of disposition of damaged or recovered U.S. Nuclear Weapons, terrorist nuclear weapons, improvised nuclear devices and radiological disper sal de vices. This mission includes staging and limited assessment of these devices, drills and exercises, and tours that may be conducted as part of the facility's mission. The G-Tunnel is no t currently funded by Readiness in Technical Base and F acilities.

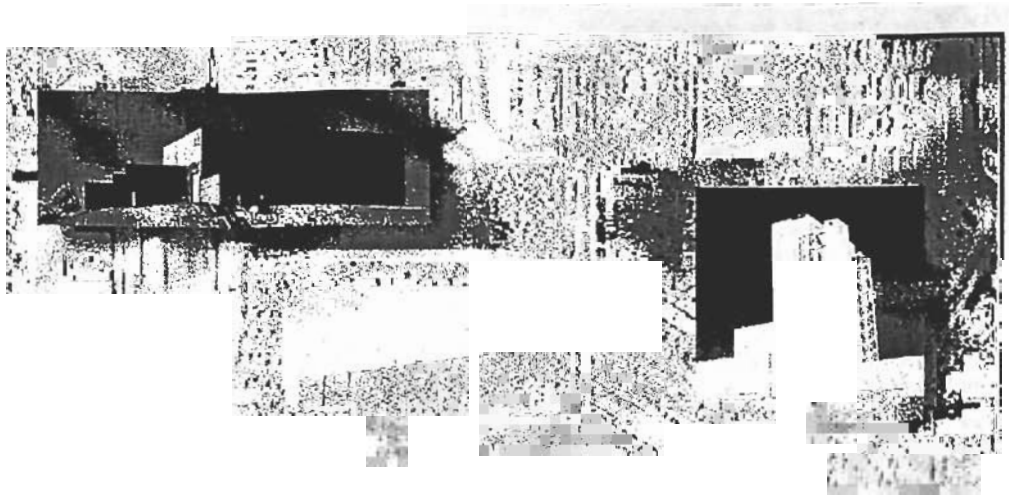


Area 6 Control Point Complex, Nevada Test Site

Area 6 Control Point Complex. The Control Point Complex is located in the saddle of the ridge between Yucca Flat and Frenchman Flat. The Control Point Complex consists of numerous facilities that support forward area testing and experiments. Specifically, the Control Point Complex supports operations in timing and firing, data gathering, warehousing, emergency facilities, administrative and human services, and crafts shops.

The experiment control room facilities (CP-1 and CP-9) are deemed mission-critical facilities and are directly funded by Readiness in Technical Base and Facilities. The CP-1 and CP-9 facilities also house light laboratory and readiness and experiment assets.

The light laboratories support the development and calibration of diagnostics for subcritical experiments and other NTS-based National Weapon Laboratories experiments. The experiment and readiness assets are the command and control for execution and remote recording of subcritical experiments and if the President requested a nuclear test underground. Readiness in Technical Base and Facilities funds the management, operations, and utilities (power) of the facilities. The Control Point Complex directly supports Campaigns 1 and 12, and Directed Stockpile Work Stockpile Research and Development.



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security issues identification and prioritization. Organizational responsibilities include project planning, prioritization, development, and implementation for all facility and infrastructure projects. This group also maintains the Comprehensive Projects List. Site and Infrastructure Planning monitors the achievement of the NNSA Corporate goal to return facility condition for mission-critical facilities and infrastructure to an assessment level of good or better and reduction of deferred maintenance to industry standards or better (Facility Condition Index < 5%).

Site and Infrastructure Planning provides Bechtel Nevada and the NNSA/NSO a centralized resource for site planning and infrastructure project development. This team provides a single point of contact to ensure the development of an efficient, comprehensive process to integrate and coordinate all site development activities.

Site and Infrastructure Planning is responsible for the Energy Management function. In this role, the Site and Infrastructure Planning provides support for NNSA/NSO to implement all U.S. Department of Energy (DOE) orders and Presidential Directives for more efficient consumption of energy at NNSA/NSO facilities. Work involves preparing annual reports and self-assessments, as well as providing support in implementing Energy Savings Performance Contracts.

3.1.1.4 Site Operations

Stockpile Stewardship Programs and Operations manages NTS Operations which includes:

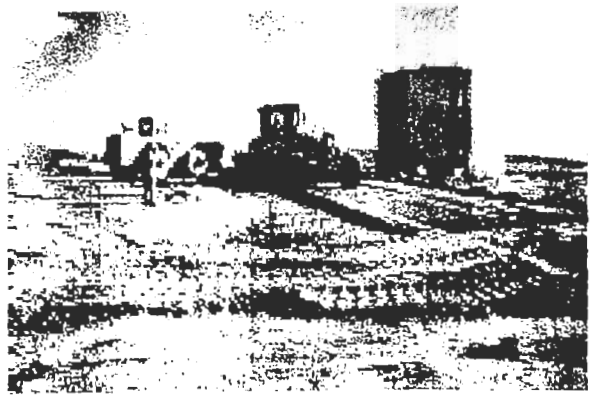
- Functional Services
  - Construction
  - Work Management
  - Engineering
  - Maintenance
- Technical, Site and Emergency Operations
  - Emergency Services and Operations Support
  - Execution Services
  - Technical Facilities
  - General Facilities
- Nuclear Operations

Also administered under Stockpile Stewardship Programs and Operations, is the Diagnostics and Experimentation Operations which includes:

- Experimentations support
- Livermore Operations
- Los Alamos Operations.

3.1.1.4.1 General Facilities

Facilities Oversight establishes facility management standards for NNSA/NSO-owned and -leased facilities managed by Bechtel Nevada, provides oversight of facility assets through periodic assessments, manages facility-related data for operating and inactive facilities, and provides access to facility data from the enterprise databases to assist in safe facility operations. Responsibilities include managing the Bechtel Nevada Facility Manager/Facility Owner Program, the Real Estate/Operations Permit Program, the Facility/Infrastructure Owner's Manual, the Facility Inventory Management database, the Facility Information Management System database, the facility activation/deactivation process, the acquisition and disposal of leased facilities, supporting the facilities and utilities recharge process, supporting the disposal of excess NTS facilities, and providing on-call support to Facility Managers and Facility Owners.



Installing soil cover, removing septic tank contents at corrective action unit 262

3.1.1.4.2 Key Support Facilities

Table 3-1 illustrates the relationship between the Stockpile Stewardship Program projects and Science Campaigns and key support facilities and infrastructure Systems. Appendix A, Attachment G specifies the facilities that are designated as mission-critical.

3.1.2 National Security Response Programs and Operations

National Security Response Programs and Operations supports the U.S. Department of Energy and NNSA programs and projects that assist the nation to meet national security challenges through the application of scientific and technical capabilities and infrastructure. To accomplish this mission, projects are executed by the National Security Response Programs and by the Combating Terrorism Programs that use assets at the NTS, as well as two operational centers of excellence. The National Security Response Programs and Operations are organized to perform activities related to the following four key functions:

- Radiological Incident Response.
- Applied Technology and Engineering.
- Counter-Terrorism Training, Exercises, and Support.
- Test and Evaluation.

The National Security Response Programs encompass emergency response assets, nonproliferation technologies, non-stockpile related test and evaluation, and combating terrorism activities. National Security Response Programs and Operations objectives are as follows:

- Increase the use of emergency response assets.
- Provide emergency communications systems, capabilities, and databases to additional national and international agencies.
- Provide and expand services and support for nonproliferation technology.
- Provide facilities and capabilities to test and evaluate technology in support of national security technology related development.
- Provide facilities and capabilities for training and exercises to support national security issues and first responders.
- Provide an active program to maintain and expand NTS infrastructure to support counter-terrorism activities.
- Design, fabricate, and field rapid/rugged prototype capabilities to support emergency response in combating terrorism.

Table 3-1: Key Readiness in Technical Base and Facilities Facility and Infrastructure Support for Stockpile Stewardship Projects and Activities

	RTBF Mission-Critical Facilities	Stockpile Stewardship Program - Readiness in Technical Base and Facilities(RTBF)						
		Directed Stockpile Work	Campaign 1	Campaign 2	Campaign 3	Campaign 4	Campaign 5	Campaign 12
Mission Infrastructure: Power systems, roads, water/sewer systems, communication system, emergency service facilities, housing/feeding facilities, site protection, fire protection, transportation/maintenance/utilities, engineering/technical facilities, and warehouse/storage facilities	DAF	●	●	●			●	●
	U1a Complex	●	●				●	●
	JASPER		●	●			●	
	High Explosives Facilities (BEEF and Baker)	●	●	●			●	
	North Las Vegas Facility Complex	●	●	●	●	●	●	●
	Control Point Complex	●	●				●	●
	Atlas Pulsed-Power Facility	●	●	●		●	●	
	Los Alamos Criticality Experiments Facility	●	●	●				●
	G-Tunnel	●	●					●

Notes: Science Campaign 10 work for the National Ignition Facility at Lawrence Livermore National Laboratory is supported by NNSA/NSO.
G-Tunnel is not funded by RTBF.

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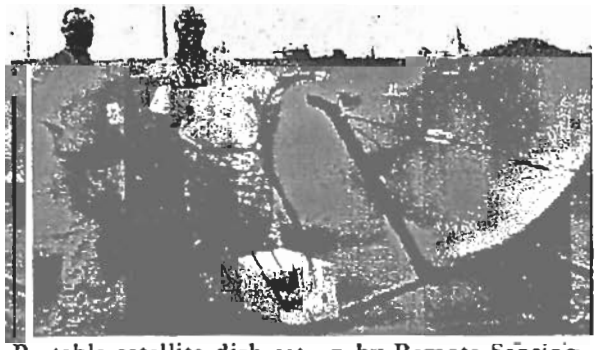
Their highly enriched uranium Transparency Implementation Program provides technical experts to serve on special monitoring visits and permanent presence office teams visiting various locations in Russia for the purpose of monitoring the down blending of highly enriched uranium weapon components to low enriched uranium.

Information and Communications Technologies
The Information Communication Technologies Project provides U.S. Department of Energy, NNSA, and Work for Others customers with leading edge technical solutions in voice, data, and video information management capabilities. The Project supports National Security Response and U.S. Department of Homeland Security operations by providing deployable communications support for U.S. Department of Energy/NNSA's emergency response assets. It also provides critical infrastructure, operational, and maintenance support for the U.S. Department of Energy Emergency Communications Network and the Secure Energy Analysis System of the Office of Intelligence. Other Project activities include providing technical assistance to the Office of International Nuclear Safety and Cooperation and to the Office of Secure Transportation and providing photographic and video support to various government agencies. Work for others customers analyze the impact of their projects on current infrastructure and request funding for upgrades as appropriate.

Counter-Terrorism Technologies (Applied Technologies)
The Counter-Terrorism Technologies (Applied Technologies) focus is on design, fabrication, and deployment of rugged prototypes and equipment capabilities reflecting state-of-the-art technologies. The applied technology support is provided to the U.S. Department of Energy, NNSA, Joint Technical Operational Team, and other U.S. Department of Energy organizations for combating terrorism and facility/critical infrastructure protection. This focus area also provides advanced security system design, test and evaluation, and vulnerability assessment for U.S. Department of Energy sensor and security system research and development, pre- and post-fielding.



Portable satellite dish set up by Remote Sensing Laboratory personnel in support of Hurricane Katrina recovery efforts

Test and Evaluation Center
The Test and Evaluation Project provides independent test and evaluation of sensor systems to determine operational characteristics of these systems prior to their transition from the developmental phase to the operational stage. The project operates the Non-Proliferation Test and Evaluation Complex at the NTS and uses staff and resources from Bechtel Nevada's two applied technology laboratories, the Remote Sensing Laboratory and the Special Technologies Laboratory provides precision diagnostics and characterization of conditions for experiments. The Test and Evaluation Project supports NA-22's technology programs at several National Laboratories which develop remote sensing technology that has potential utility among multiple government agencies. These resources are also made available to the larger Intelligence Community through NA-22 support of base capabilities. The Test and Evaluation Project also works closely with the National Center for Combating Terrorism program at Bechtel Nevada, in a mutually beneficial arrangement to build infrastructure to support the Remote Sensing Test and Evaluation Center activities.

3.1.2.2 Combating Terrorism

The NTS has played a critical role in combating terrorism for more than 25 years. It has a large cadre of scientists, engineers, technicians, intelligence specialists, and former special operations force personnel, many of whom currently perform work among all areas of combating terrorism. Their activities include leading-edge experimentation and testing, advanced diagnostics and data fusion, intelligence technologies, applied technologies, and

training and exercising of civilian first responders and military forces. NTS products and services are widely known and respected throughout the combating terrorism community. The NTS is a charter member of the National Domestic Preparedness Consortium and is currently training and conducting exercises for large numbers of first responders.

The Combating Terrorism function is funded through NNSA departments and a number of Work-for-Others customers. Specific Bechtel Nevada objectives for Combating Terrorism are:

- Develop advanced technologies for the law enforcement, military, and intelligence communities
- Expand services for training and exercises in response to weapons-of-mass destruction incidents
- Design, fabricate, and field rapid/rugged prototype capabilities to support emergency response in combating terrorism

To achieve these objectives, the Combating Terrorism function is divided into five focus areas: Combating Terrorism Operations Support, Hardened and Deeply Buried Targets, Counter-Terrorism Technologies, Military/Work for Others Test and Evaluation, and National Center for Combating Terrorism. These are discussed below.

Combating Terrorism Operation Support
The NTS has been designated by the U.S. Department of Homeland Security as the National Center for Exercise Excellence. As such, the NTS provides a remote and restricted access area for weapons of mass destruction response training in a realistic environment. At the present time, the NTS hosts training and exercises for federal, state, and local first responder personnel as well as the National Guard, U.S. Customs and Border Protection, military, and other agencies as requested to assist responders during weapons-of-mass-destruction incidents.

State and local responders include such groups as fire departments, police, hazardous materials teams, and medical teams. The focus of training and exercises for these emergency responders is on recognition of threats, decision-making (relating to an appropriate response and equipment required), and realistic event responses.

The NTS provides training and exercise services for a number of federal first responders, including National Guard Civil Response Teams, U.S. Department of Defense Chemical Biological Incident Response Forces, and Federal Bureau of Investigation special weapons assault team and forensic teams. Federal teams focus on command, operations, communications, administration/logistics, and medical response to assist the Incident Commander in making assessments of the requirements for follow-on forces.

This focus area also provides logistics and support services for a variety of customers that use NTS facilities and infrastructure, such as the Yucca Mountain Project.

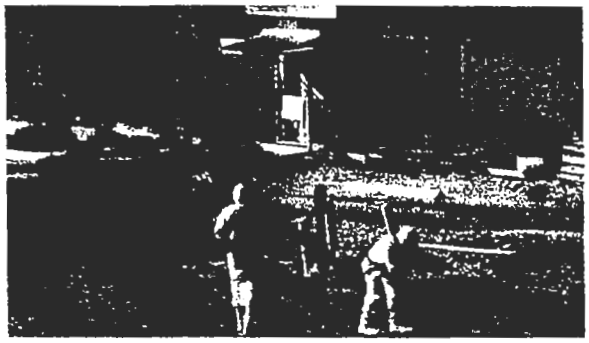
Key facilities and infrastructure include living quarters, classrooms, roadways, unoccupied facilities, the Non-Proliferation Test and Evaluation Complex, the Emergency Management Center, and the land itself. As work activities expand, the development of a training facility focused on weapons-of-mass-destruction response training and exercises will be required. In the interim, a number of upgrades to existing facilities and training areas are planned.

Hardened and Deeply Buried Targets
This focus area provides project planning, engineering, construction, and diagnostic services to determine better means of detecting, defeating, and/or neutralizing hard/buried/critical target facilities.

Transportation related exercise on Burma Road, NTS

Counter-Terrorism Technologies (Work-for-Others)

Counter-Terrorism Technologies (Work-for-Others) designs, fabricates, deploys rugged prototypes, and evaluates equipment capabilities reflecting state-of-the-art technologies. This equipment and operational support is provided primarily to other government agencies for combating terrorism and facility/critical infrastructure protection. This focus area also provides advanced security system design, test and evaluation, and vulnerability assessment for other government agency sensor and security system research and development, pre- and post-fielding.



Counter-terrorism exercise at the NTS

Military/Work-for-Others Test and Evaluation

The Military/Work-for-Others Test and Evaluation focus area provides rapid response training to U.S. Department of Defense, intelligence, and other federal agencies. This distinctive training employs specially designed and fabricated rugged prototypes and procedural capabilities which capitalize on cutting edge state-of-the-art technologies and concepts. These efforts are focused on combating terrorism, counter proliferation, weapons of mass destruction, and critical infrastructure protection on a global perspective. This focus area also supports the development, demonstration, and evaluation of improvements for conventional demilitarization processes by conducting contained burn/detonation experiments and supporting explosives and weapons testing and force-on-force military field and command post operational readiness exercises.

The Combating Terrorism Infrastructure

The United States requires the capability to act decisively and in a coordinated manner at all levels of government in order to respond to the threat of terrorism and its consequences. Essential to this capability is advanced preparation across the entire spectrum of activities and technologies for combating terrorism. The establishment of a Combating Terrorism Infrastructure leverages existing assets and unique NTS capabilities to create a comprehensive suite of combating terrorism activities. The NTS is a unique location where broad expertise, size, security, and terrain combine to allow the types of divergent, yet complementary, activities required for a comprehensive program of combating terrorism training and exercises, test and evaluation, and applied technology development.

Combating Terrorism Infrastructure users include federal, state, and local agencies, institutions, and private entities involved in all aspects of combating terrorism. First responders, law enforcement, and military personnel are able to work side-by-side with each other, as well as with the science and intelligence professionals who support them. Users can accomplish multiple requirements on a single trip to the NTS, conduct training and exercises in a variety of complex scenarios, and test new technologies in realistic conditions alongside the personnel who will actually use them in the field.

Under the general air permit, hazardous and toxic material releases and explosive detonations may be conducted on the NTS in support of counter-terrorism technology development and testing. The NTS has facilities that resemble real-world chemical and industrial facilities that can be modified to support combating terrorism training and exercises and serve as test beds for new technology.

Homeland Security Science and Technology Project

The Homeland Security Science and Technology focus area provides technology development and operational test and evaluation support to the U.S. Department of Homeland Security, principally in the areas of chemical, biological, nuclear/radiological, and high explosives countermeasures. Current emphasis is on the design and construction of a radiological/Nuclear Countermeasures Test and Evaluation Complex.

Bechtel Nevada has been designated by the U.S. Department of Homeland Security's Science and Technology Directorate as an "intramural" organization. In this capacity, Bechtel Nevada is

Applied Technologies Department

The Applied Technologies Department provides integrated scientific and technical products, services, field deployable capabilities, highly specialized and unique engineering research and development, as well as component and prototype development and testing. These activities support the counter-proliferation, nonproliferation, counter-terrorism, and emergency response activities of the NNSA and other federal agencies.

Andrews Operations Department

The Andrews Operations Department manages staff and support activities for Remote Sensing Laboratory - Andrews, which is located at Andrews Air Force Base, Maryland. This department provides specialized support including site services, scientific services, engineering and technical services, project operations support, and aviation operations support to Bechtel Nevada, NNSA, and other agencies.

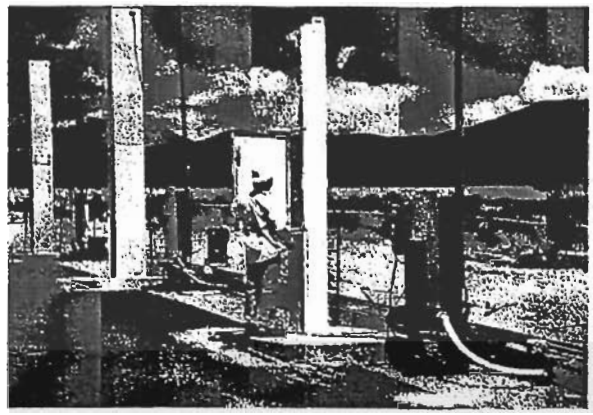
Operations Staff Department

The Operations Staff Department provides organizational accountability and management support in areas of administration; assets management, including facility oversight; foreign travel; infrastructure and logistics; human resources and training; management and facility compliance; tours and public relations; and website maintenance. In addition, deployed support is provided through the Operations Staff Department. This support includes safety, procurement, and property specialists; facilities maintenance; and custodial support. Security is provided by Wackenhut Services, Inc.

3.1.2.3.2 Special Technologies Laboratory

Special Technologies Laboratory is located in Santa Barbara, California and its focus is to meet emerging national security needs in the areas of Stockpile Stewardship and National Security Response.

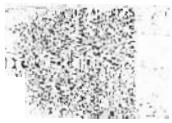
Special Technologies Laboratory supports the Stockpile Stewardship and Readiness Programs with development and fielding of optical and radiation diagnostics systems to measure properties of shocked materials, plasmas, and nuclear radiation. The technical staff possesses a wide range of capabilities in areas such as classical optical design, fiber optics, high-power lasers, imaging systems, high-bandwidth measurements, nuclear and plasma diagnostics, and accelerator systems and experiments. Work is well-balanced among all three National Weapons Laboratories, and Special Technologies Laboratory staff routinely field their diagnostics systems and acquire data at the large-scale physics facilities at the National Weapons Laboratories.



Technician inspects a sensor system at Homeland Security Portal Monitor Test Area

There is a strong technology overlap and sharing of resources between the Stockpile Stewardship and National Security Response Programs at Special Technologies Laboratory, particularly in such areas as optical imaging, optical remote sensing, and radiation detection technology. Most Stockpile Stewardship Program personnel are also active in National Security Response projects, and the Stockpile Stewardship and Readiness Program projects benefit greatly from the electronics, software, and systems expertise of the Special Technologies Laboratory National Security Response personnel.

In the National Security Response areas, Special Technologies Laboratory provides services for the design, rapid prototyping, and deployment of advanced sensor and detection systems and instrumentation in support of efforts to combat terrorism. Special Technologies Laboratory also supports activities in electromagnetic spectrum management and provides advanced optical and multi-spectral technologies in support of augmented vision and detection technologies.



Emergency Management Center

The Emergency Management Center provides critical information exchange during exercises or real-world events and incidents. The Emergency Management Center was relocated to building 600 in Mercury at the NTS. The relocation included upgrades to voice, video, and data communications capabilities between Mercury, Control Point, and the North Las Vegas facilities. In addition, Bechtel Nevada enhanced its capabilities by providing the ability to receive live video from remote cameras at the NTS and exchange web-based event information.

Mercury Base Camp

Mercury Base Camp, the "town" at the entrance to the NTS, provides two classrooms that will each seat 100 students for weapons of mass destruction responder training, a weapons of mass destruction equipment facility, and housing and feeding facilities for 350 personnel.

Non-Proliferation Test and Evaluation Complex

The Non-Proliferation Test and Evaluation Complex was established in 1982 when the *Clean Air Act* directed the U.S. Environmental Protection Agency and the U.S. Department of Transportation to team with the U.S. Department of Energy to create "an experimental and analytical research effort, with the field research to be carried out at the Liquefied Gaseous Fuels Spill Test Facility" (later renamed the Non-Proliferation Test and Evaluation Complex).

The center continues to support the objectives of the *Clean Air Act* through experimentation using open-air releases of hazardous materials and simulants to create realistic environments for testing and training. The Non-Proliferation Test and Evaluation Complex has a unique permit for the release of hazardous and toxic materials for testing under controlled conditions. Uses of the Non-Proliferation Test and Evaluation Complex include evaluating counter-proliferation sensor technologies, performing experiments with hazardous chemicals, and conducting weapons of mass destruction training and exercises.

Sensor Test Beds are used to test sensors for both local and standoff applications. Using the sensor test beds, technologies are developed and tested to detect, correctly identify, and respond to a variety of threats. Sensors can be incorporated into training and exercise events to validate their performance and provide essential data for exercise evaluation.

Smart Building Complex

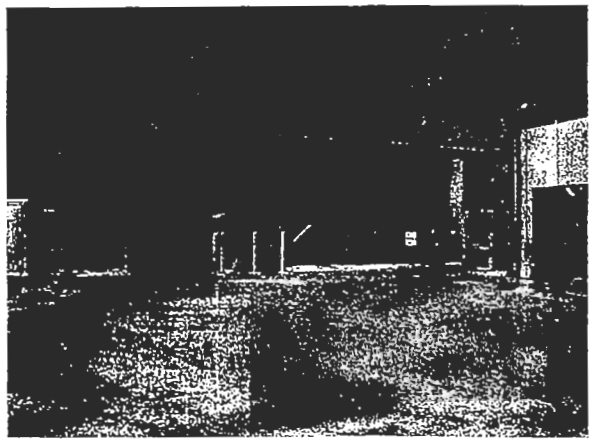
The smart Building Complex uses sophisticated sensor arrays, along with data collection and analysis systems, to detect and automatically respond to chemical, biological, nuclear, radiological, and explosive threats. An existing complex focusing on bio-materials at the NTS will be expanded for and modified as a test bed to develop smart building technologies and to train security personnel in response tactics.

Tunnel Complexes

Bechtel Nevada, in concert with the Defense Threat Reduction Agency, uses the many miles of tunnels at the NTS to conduct experiments and training in support of hard/deeply buried target location and defeat, conventional munitions demilitarization, and other experiments and testing. Six types of geologic regimes simulate environmental conditions in a variety of threat countries. The National Center for Combating Terrorism can use these many venues for intelligence applications, ground and air attack, and development of detection, characterization, defeat, and damage assessment technologies and tactics.

Area 12 Camp

Operations on urban terrain use the existing Area 12 Camp as an urban terrain site with commercial, residential, and industrial buildings. The Area 12 Camp can support tactical exercises in urban environments for Special Weapons Assault Teams and Special Operations Force personnel. Current renovations and upgrades to Area 12 Camp will provide an operationally secure base camp for military units and other government agencies to use the northern NTS training areas for Combating Terrorism exercises.



Area 12 Camp Facilities

TWEEZER Compound

The TWEEZER Compound in Area 11 consists of three earth-covered magazines, a missile disassembly building, an operational control center, and a prototype unit for ongoing research and development; environmental characterization for classes of small, tactical missiles in the demilitarization stockpile; and in t he U.S. Department of Defense operational in ventory.

X-Tunnel Experimental Test Chamber

The X-Tunnel was established to collect emissions data under controlled conditions from full-scale open burns and open de tonations. The f acility is used f or environmental testing and dispersion modeling of effluents from destruction of artillery rounds, missiles, and other explosives.

Army Research Laboratory Range

This remote Army Research Laboratory Range is used for developmental testing of conventional weapons against instrumented targets and ordnance platforms to collect signatures of munitions and battle damage assessment on t argets. The fenced compound and adjacent test pads support classified energetic experiments.

Desert Rock Airfield

The Desert Rock Airfield supports operations of C-130-size aircraft.

NTS Land Area and Exercise Areas

Military training organizations use the large NTS land area to provide a setting for land navigation, mobility exercises, and mission preparation. Exercise areas and scenarios, including a desert/mountain mobility site and various NTS facilities, provide settings for military units to practice land navigation, maneuvering through obstacles, mission rehearsal, and related tactics. All areas ar e remote enough t o allo w classified exercises to be conducted. Unit readiness projects use the NTS as a large restricted access location for classified special U .S. Department of Defense units t o exercise mission r eadiness. The NTS provides exercise planning, logistics support, and independent observers (as appropriate). Unit r eadiness teams at the NTS are often integrated into activities of U .S. Department of Defense's larger national r eadiness exercises, along with U.S. Department of Defense test range activities.

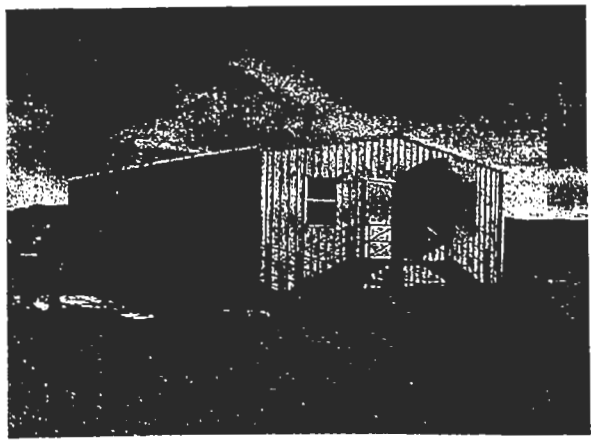
Current upgrades at Areaa 19 and 20 training areas will facilitate unequaled support of special operations and other government agency customer requirements for live firing training on real targets and simulated moving targets with small ar ms to 0.50 caliber, mortars, heavy rockets, grenades, and shape charges for breaching and explosive destruction. These training areas provide new and refresher training before engaging tactics in other NTS areas such as Cat Canyon.

NTS Mock Facilities

Existing facilities at the NTS resembling real-world chemical, water, and nuclear plant facilities are used for training scenarios and sensor test beds that are deployed for use in both offensive (counter-proliferation) exercises and defensive security force training.

Radiological/Nuclear Countermeasures Test and Evaluation Complex

The U.S. Department of Homeland Secur ity has funded this project and it will be located in Area 6 south and eas t of t he Device Assembly Facility. Construction is scheduled to begin in late FY 2004 or early FY 2005. As currently conceived, the complex will be comprised of eight testing venues and will be built in three phases over a 3-4 year period. The Phase I venues were completed in the second half of FY 2005. The complex will ser ve as a user f acility t o support post-bench top testing. A ctivities will rang e from prototype and sensor systems testing to Conduct of Operations de velopment and tr aining. Users will include developers from the National Laboratories and pr ivate indus try as well as t he U.S. Customs and Border Protection.



Area 19 Training Area

3.1.3 Environmental Management

The U.S. Department of Energy's Office of Environmental Management performs remediation and waste management at the NTS, the Nevada Test and Training Range, and other sites where historical NNSA/NSO activities occurred. The overall goal of Environmental Management is to ensure that previous releases of radionuclides and hazardous materials to the environment are cleaned up in accordance with established or agreed-upon standards. This goal reflects U.S. Department of Energy-Headquarters' program initiatives to clean up sites across the U.S. Department of Energy complex, and to dispose of low-level and mixed low-level radioactive waste at a regional disposal facility (such as the NTS).

The objectives for the program are:

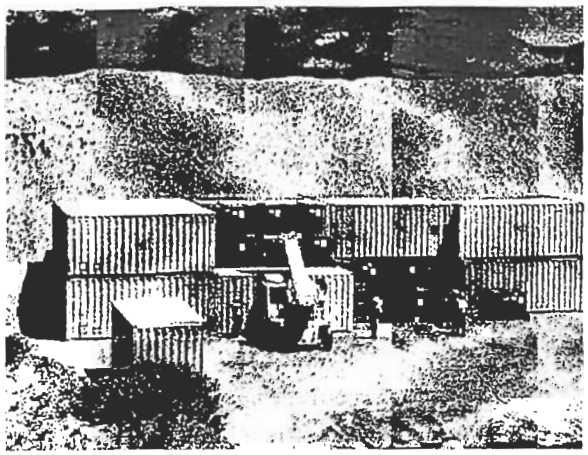
- Manage and safely dispose of national low-level radioactive waste and Nevada mixed low-level radioactive waste generated by the U.S. Department of Energy and U.S. Department of Defense complex, consistent with records of decision.
- Safely manage and characterize hazardous and transuranic wastes for offsite disposal.
- Characterize and remediate the environmental legacy of nuclear weapons and other testing at the NTS and offsite locations
- Identify, develop, and deploy innovative technologies that enhance the cleanup program.

Bechtel Nevada conducts projects in the areas of Environmental Management, Environmental Technical Services, Radioactive Waste Acceptance Program, Science and Technology, Solid Waste Operations, and Waste Facilities and Operations in compliance with federal, state, and local regulations.

3.1.3.1 Waste Management

Waste Management activities consist of safely managing and disposing of wastes generated by U.S. Department of Energy and U.S. Department of Defense operations. Waste Management activities at the NTS are:

- Disposal of national low-level radioactive waste and Nevada-generated mixed low-level radioactive waste from approved generators.
- Storage and shipment of hazardous waste for offsite disposal.
- Storage and characterization of transuranic waste for offsite disposal.

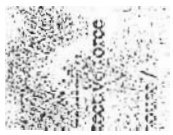


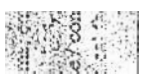
Workers position a metal box containing low-level waste in disposal cell 10 at the NTS

3.1.3.2 Environmental Restoration

Environmental Restoration activities include characterization and remediation of waste sites, as follows:

- Soil sites activities, including large-area, contaminated soil characterization, removal, and restoration.
- Underground test area activities, including hydrogeologic investigation and characterization of the groundwater environment, development of groundwater models, and well installation for sampling and monitoring.
- Industrial sites activities, including characterization and remediation of different types of waste sites, i.e., disposal wells, inactive tanks, septic tanks and lagoons, inactive ponds and tunnel muck-piles, drains and sumps, ordnance sites, bunkers, spill sites, and deactivation and decommissioning facilities.





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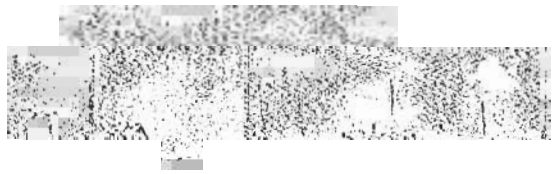

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been proposed for the Device Assembly Facility. It is anticipated that these activities will continue to increase the Device Assembly Facility workload. Some may impact points of the infrastructure.

New experiment technologies are also anticipated in the Stockpile Stewardship program. The Phoenix High Explosive Pulsed Power experiments are anticipated to rejuvenate the Big Explosives Experimental Facility and may lead to the development of another underground testbed.

3.5 Future Non-NNSA Mission, Programs, Workload, and Impacts

Significant changes are expected overall in the National Security Response Program. Bechtel Nevada expects the National Center for Combating Terrorism will continue to grow its capability, both in student capacity and the types of training offered. However, the funds for the growth are currently over existing targets for that program.

Work within the Homeland Security Science and Technology project and National Center for Combating Terrorism will impact aging infrastructure elements. Infrastructure elements will accelerate towards decline as they support the additional workload and stress for new work as well as support current missions. The U.S. Department of Homeland Security Science and Technology Director has identified $10 million a year for the operation and maintenance of the Radiological/Nuclear Counter-Measures Test and Evaluation Complex through FY 2009. This type of funding is expected to remain constant throughout the lifetime of the facility.

According to the *Radiological/Nuclear Countermeasures Test and Evaluation Complex, Nevada Test Site Preliminary Draft Environmental Assessment, May 2004*, the Radiological/Nuclear Countermeasures Test and Evaluation Complex requires 1 mile of paved roads and additional paved parking areas. The facility will consume 1,000,000 kilowatt hours per year. A new 100,000-gallon water tank, an 8-inch water line from well 4, and two septic tanks will need to be installed. Approximately 2,800 gallons per day of water will be used. Power and communication lines will need to extend from the Mercury Highway to the facility.

A factor impacting power system capacity is the continued growth of the surrounding municipalities. Las Vegas has been the fastest growing city in the nation, according to the latest census, with a 10-year growth rate of 82 percent. The town of Pahrump, in Valley Electric Association's coverage area, is currently growing at about 6 percent a year, which is impacting available capacity from the surrounding utilities supplying power to the NTS. This is a limiting factor to load increases at the site until offsite transmission capacity is upgraded. Onsite load increases need to be coordinated with the utilities supplying power to the NTS to allow sufficient planning for upgrades that may be required.

NTS security at work

3.6 Impacts of Non-NNSA Programs on Weapons Activities Mission Accomplishment

The impact of NNSA/NSO Work for Others Projects is described in Table 3.4. Nonproliferation and Test Evaluation provides a formalized process to ensure that products developed in support of national security interests are evaluated using high-hazard tasks and high-security venues to expedite transition to the user community. Counter Terrorism Technologies provides rapid design, proof-of-concept demonstrations, rugged prototypes, and low-rate

Table 3-4: NNSA/NSO Work for Others Projects

NNSA/NSO Work for Others Projects						
	Project Title	Description	Consistent w/ Primary Mission	Adversely Impact SSP	Compete w/ Commercial	Burden Site Resources
1	Rad/Nuc CTEC	Design and construction of a test facility for DHS	Yes	No	No	No
2	Test & Evaluation Rad/Nuc	Evaluation of radiation sensors for DHS	Yes	No	No	No
3	Nonproliferation T&E	Test chemical sensors	Yes	No	No	No
4	Hard & Buried Targets (DTRA)	Support DTRA test program for weapons systems to defeat hardened buried targets	Yes	No	No	No
5	Yucca Lake Airfield Improvements	Build runway and hangars at Yucca Lake for UAVs	Yes	No	No	No
6	NASA Moon Base	Conduct a study of moon base feasibility	Yes	No	No	No
7	Counter-Terrorism Technologies	Design and build small numbers of electronic instruments	Yes	No	No	No
8	Counter-Terrorism Support Project	Conduct WMD radiological incident detection and response training to community first responders as funded by the DHS	Yes	No	No	No
9	Special Activities Support Project	Provide planning and logistical support for DOD, and other federal customers, conducting unit readiness training, exercises or testing using unique NTS training venues that provide remote and secure capabilities	Yes	No	No	No
10	Project 700	Provide power and support as requested	Yes	No	No	No
11	Yucca Mountain Project	Provide support as described in the MOU	Yes	No	No	No

initial production of state-of-the art instruments. Hard Buried Targets integrate test bed design, engineering, development, construction, execution, and scientific assessment. Combating Terrorism Infrastructure focuses on facility upgrades to accommodate user demands for realistic environments to support research and development, equipment test and evaluation, individual and team training, comprehensive exercises, and intelligence support activities.

3.7 Facilities and Infrastructure Impact in Support of Information Technology

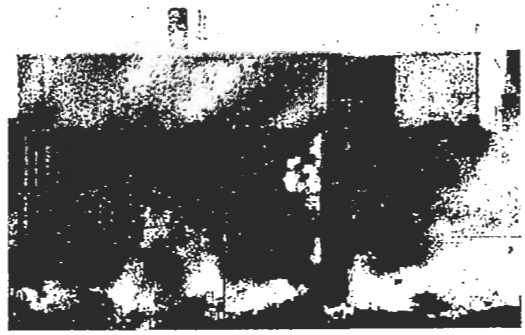
The Bechtel Nevada Technology Needs Assessment for Stockpile Stewardship and Readiness serves as a tool for helping identify specific technologies and capabilities that are likely to be of value to the successful execution of mission objectives over the next decade. Today, the NTS supports such diverse activities as subcritical experiments in the U1a complex, proton radiography, National Ignition Facility, the analysis of underground testing data, pulsed-power facility operation, and a host of other science-based stockpile stewardship endeavors. These activities require diagnostic systems with a wide variety of bandwidths and sensitivities.

The approach adopted for identifying the specific technologies and capabilities needed for continued successful execution of NTS missions was to work backwards from high-level planning documents, through program and implementation plans, to reach an understanding of the drivers for technology development. The various drivers provided talking points for tabletop discussions with representatives from the National Weapons Laboratories and teams comprised of Bechtel Nevada technical staff and managers on anticipated diagnostic requirements with their associated challenges and issues that led finally to a list of identified technology needs.

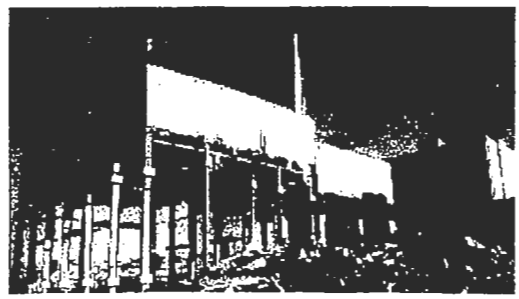
Most of the NNSA/NSO facilities have an outdated communications infrastructure for supporting local area networks because the cost to modernize is significant. Modernizing local area networks is frequently not possible until failures occur due to resource limitations and high replacement costs. The estimated cost of replacing wiring for local area networks in selected facilities exceeds $2,500 per network drop or up to $2 million per building. A new process is being evaluated as part of Six Sigma to determine if improvements in the wiring for local area networks could provide a financial benefit. As a part of this evaluation, a pilot is under way. The estimated savings for using wireless technology in lieu of wiring replacement costs (at 10 percent) equates to a cost savings of $2,646,000. Savings would be realized by reducing the average cost for installation to support local area networks. NTS mission strategy would be enhanced in terms of execution and engineering by improving network bandwidth capabilities (speed). If wireless technology is determined to be feasible, the plan to replace local area networks will be revised to reflect replacements over the next 10 years based on defined requirements for use of computing resources.

Highlight

Reactor Maintenance, Assembly, and Disassembly (R-MAD) facility, located in Area 25 of the NTS, was part of a FY 2005 Facility Demolition and Disposal project. The R-MAD complex, built in the mid 1960s, was originally part of the nuclear rocket development program. Most of it was recently demolished as part of an ongoing initiative by the NNSA to reduce expenses associated with facilities that are no longer operational. Part of this process involved the removal and proper disposal of asbestos-containing materials prior to demolition and disposal.



Because portions of the facility were over 60-feet tall and featured high bay structures that formerly housed large equipment, it had to be brought down with a Controlled Explosive Demolition using unconventional methods. The Bechtel Nevada project manager ensured environmental and radiological surveys were conducted and began pre-demolition preparation on the facility.

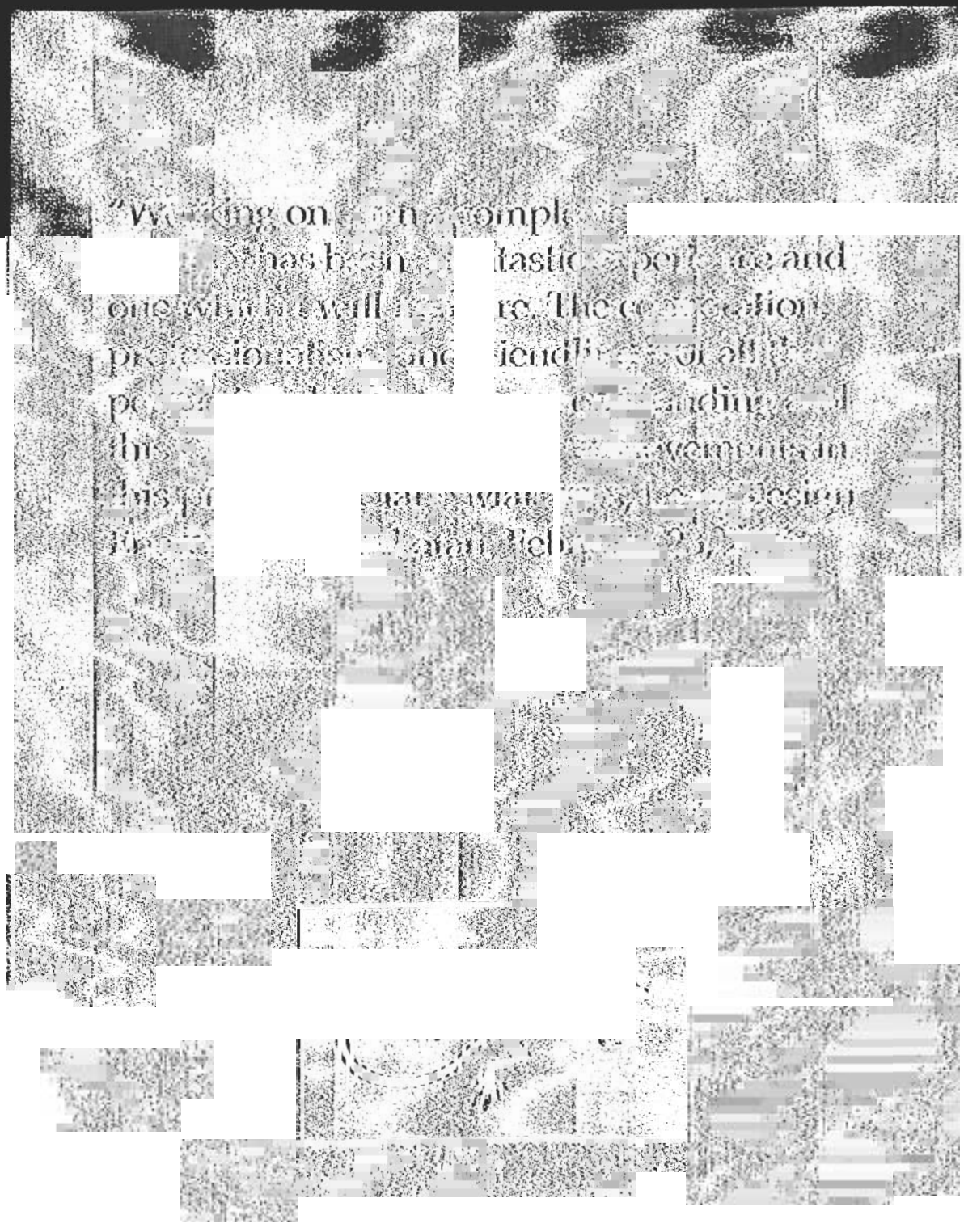


On October 14, 2005, portions of building 25-3110, a major facility within the R-MAD complex, were imploded in accordance with the approved demolition plan provided by the subcontractors, who have subsequently reduced the rubble and hauled the demolition debris to an NTS landfill.

The Plan

Snow on NTS northwest mesas

FY 2007 NNSA/NSO
Ten-Year Site Plan



4.0 The Plan

The planning component of this Fiscal Year (FY) *2007 Ten-Year Site Plan (TYSP)* portrays how Bechtel Nevada, the Management and Operations contractor at the Nevada Test Site (NTS), plans to ensure the successful accomplishment of assigned activities in a safe, secure, efficient, and environmentally responsible manner and maintain an appropriately sized complex of facilities and infrastructure to meet current and future U.S. Department of Energy, National Nuclear Security Administration (NNSA) mission, program, and workload requirements within fiscal constraints. Specifically, this plan provides a framework for Bechtel Nevada, the NNSA/Nevada Site Office (NSO), and national weapons laboratories to make decisions regarding prioritized facility and infrastructure needs within the constraints of the Future Years National Security Program's funding limitations. In addition, the plan affords the opportunity to identify total facility and infrastructure requirements beyond existing funding constraints. Bechtel Nevada directs assets, particularly NTS facilities and infrastructure, to assist mission-critical facilities and infrastructure support for the national weapons laboratories to design, fabricate, field, and operate systems for nuclear weapons experimentation. However, Bechtel Nevada also maintains the NTS for programs implemented by other customers. For example, the NTS actively supports the U.S. Department of Energy's Environmental Management mission through waste management, environmental restoration, and environmental technology development activities and initiatives. The NTS also supports combating terrorism training for the U.S. Department of Defense, the U.S. Department of Justice, and state and local municipalities by providing a suite of training scenarios based on locations and capabilities.

Section Overview

- Describes planning process
- Presents facilities and infrastructure overview
- Discusses real property asset management
- Describes site footprint management
- Discusses deferred maintenance and facility condition index
- Describes maintenance
- Discusses utilities at NSO sites
- Identifies replacement-in-kind requirements
- Discusses security

4.1 Planning Process

In developing the Infrastructure Management Plans, Bechtel Nevada reviewed and validated the infrastructure condition assessments. Currently, Bechtel Nevada has completed the Power Transmission System Management Plan, the Water Systems Management Plan, the Roads Management Plan, and the Communications Systems Management Plan. Requirements from these plans have turned into prioritized projects to bring the infrastructure within the overall condition goals.

Being NNSA's largest site, the NTS has a unique issue in that maintaining infrastructure systems across an approximate 1,375 square-mile site is a challenging and difficult task. Across the sprawling expanse of the NTS there are 550 miles of power transmission and distribution lines, 174 substations, 340 miles of paved roads, 3 public water systems, 10 septic systems, 11 sewage lagoons, and 3 landfills. Developing and using Infrastructure Management Plans allows Bechtel Nevada to integrate mission requirements with the requirements of those infrastructure elements and focus Line Item projects, Institutional General Plant Projects, General Plant Projects, and Facilities and Infrastructure Recapitalization Program projects on critical needs.

Bechtel Nevada ensures that the facilities and infrastructure it manages meets the requirements to conduct current and anticipated program activities. To meet this challenge, facilities and infrastructure must:

- Be safe, modern, and reliable.
- Effectively support programmatic work activities with purpose-built, fit-to-function structures, systems, and components.
- Provide an optimal environment to support technologically advanced, high-hazard tests, experiments, and demonstrations.
- Be optimized to provide the most cost effective implementation of programmatic work activities.

The Facility and Infrastructure Planning Process ensures the facilities and infrastructure are maintained in accordance with these guidelines. The planning process is briefly described below, and the basic flow and relationship of the NNSA/NSO Planning Process is depicted in Figure 4-1.

The key to Bechtel Nevada's successful planning process is to involve a cross-disciplinary team. Program managers, operations managers, facility managers, and facility owners annually evaluate their facilities and infrastructure requirements for the next three-to-five year period. Should any facility and infrastructure requirements be identified, the responsible manager coordinates with the Infrastructure Planning and Projects staff to include the project in the planning process and for identification in the Comprehensive Projects List.

All non-programmatic facility and infrastructure projects are presented to the NNSA/NSO Board of Directors for approval and final prioritization. Facility and Infrastructure Recapitalization Program projects and Line Item projects are submitted to NNSA/Headquarters (HQ) by the Facilities Engineering and Infrastructure Management Division for concurrence. Additionally, Line Item projects are forwarded to Congress for approval.

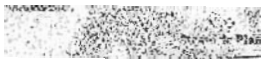
The Site Development Working Group is kept informed of potential Line Item and General Plant Projects. The Site Development Working Group provides guidance for the overall planning process.

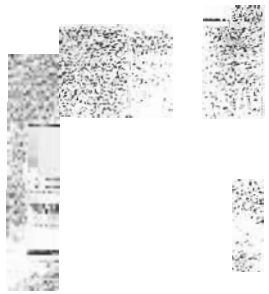
Reviewing planning documents during fiber optic project

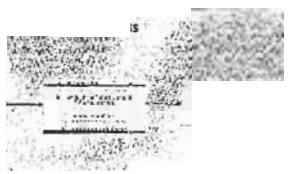
Members of the Site Development Working Group include representatives from NNSA/NSO, the three national weapons laboratories, Bechtel Nevada, the Defense Threat Reduction Agency, Wackenhut Services Incorporated, U.S. Air Force, and Yucca Mountain Project.

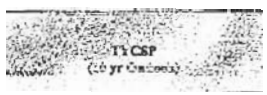
As part of its planning process, Bechtel Nevada requires programs to have either a management plan or an execution plan. Each program management plan is prepared jointly by Bechtel Nevada and NNSA/NSO. For example, the program management plan for the Stockpile Stewardship Program includes input from the national weapons laboratories. The Ten-Year Investment Plan:

- Defines the program.
- Presents the strategic direction and goals for the program over the next 10 years.
- Discusses the major existing and anticipated projects and activities for that time period.
- Describes, in general, the types of assets (facilities, infrastructure, technologies, equipment, and technical capabilities and skills) required to perform the work.
- Provides a general schedule for work activity implementation (planning, design, engineering, construction, operation, and decommissioning).
- Provides an indication of annual funding requirements.
- Integrates Readiness in Technical Base and Facilities infrastructure planning information.





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4.1.1 Facilities and Infrastructure Overview

4.1.1.1 NTS Facilities and Infrastructure

The NTS is, by far, the largest and most extensive of NNSA/NSO's sites in terms of the complexity of its facilities, buildings, infrastructure, and land area. The remoteness and expanse of the NTS has enabled it to serve as the host of extremely hazardous operations and research and development activities for 50 years. These activities, dispersed throughout the approximately 1,375 square miles of the NTS, support the national weapons laboratories and the U.S. Department of Defense, Desert Research Institute, and various Work for Others customers. While many existing facilities and buildings on the NTS provide critical support for current activities, many aged facility and infrastructure elements make it difficult, at best, to provide the world-class support required for mission-critical activities and campaigns.

4.1.1.1.1 Buildings

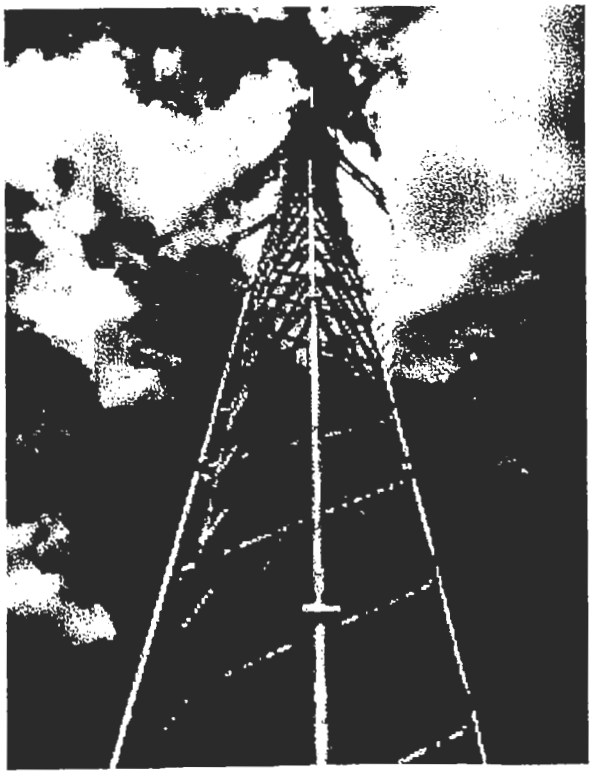
Bechtel Nevada has historically been innovative in the adaptive reuse of buildings. However, many of these buildings have now reached the end of their useful lives, both structurally and technologically. Despite the vigorous program to excess aged unusable buildings, the Facilities and Infrastructure Management System indicates 63 percent of the NTS building square footage is over 30 years old, and the average building age is over 32 years. This situation is exacerbated by a large number of temporary buildings that have been kept in operation for decades beyond their expected life.

The Facility Condition Assessment Surveys, reported from FY 2002 through FY 2005, determined that 66 percent of the NTS buildings are in excellent or good condition. The Facility and Infrastructure Assessments assessed the suitability of the buildings for their current missions and the life-cycle stage of their component systems. Data from these assessments will be combined, summarized, and used to update the Facility Information Management System in September. This update will resolve inconsistencies between the Facility Information Management System and the current conditions and deferred maintenance requirements.

4.1.1.1.2 Communication System

In FY 2003, Bechtel Nevada completed a Communications System Management Plan. The following information is taken from the management plan and the condition assessment of the communication infrastructure systems. These condition assessments showed that the majority of the communication systems at the NTS were in poor condition.

The radio-frequency paging system and mobile radio systems have been replaced and have a 7 – 10 year life expectancy. Existing communications equipment (exclusive of the above) cannot be reconfigured to meet critical mission requirements. Significant sections of the copper cable plant, the microwave system, and the Local Area Network systems are in poor to failed condition and are in need of repair/replacement with a replacement plant value in excess of $51 million. Modern reliable communications systems are needed



Spotted Range cellular tower

The current status of space utilization at the North Las Vegas Facility was calculated by dividing the total square footage used by the gross square footage, minus the building support area. Each facility and building was separately analyzed based on its utilization percentage, space type categorization, occupancy count, and information recorded in Bechtel Nevada's facility database. Using this formula as a guideline, the space utilization of each facility and building was determined.

With the relocation due to the presence of beryllium in four buildings, all the remaining administrative and laboratory facilities and buildings are approximately 100 percent utilized. Upon cleanup and renovation of the buildings in which beryllium was found, relocation of personnel from leased buildings will continue this 100 percent utilization rate.

4.1.1.2.2 Communication System

The North Las Vegas Facility telephone communication systems equipment was installed over 20 years ago. It has exceeded 90 percent of its useful life and is less than adequate, but functional. Some major software upgrades have been subsequently installed to permit continued use of the host telephone system supporting all of NNSA/NSO. The existing copper cable plant is in good condition and should not require replacement during this planning horizon. In conjunction with NTS operations, the radio-frequency paging and mobile radio systems was replaced five years ago. These radio systems are half way through their useful life but are adequate for performing during this planning horizon. Data subsystem upgrades have not kept pace with evolving communications standards. Therefore, there is a significant backlog of required equipment change-out required to keep up with today's broad band network technology.

Projects are being developed to modernize the system. For example, the Local Area Network system requires over $7 million to meet today's data movement needs. A method of control and monitoring of the various telecommunications and data elements is essential to uphold the technical integrity of this major investment.

Allied with communications is the interconnection of facility fire detection systems. Replacement of the North Las Vegas Facility fire alarms began in FY 2003. Two fire alarm projects were completed in FY 2004. A project to replace fire alarms in the remaining six buildings is currently unfunded and unscheduled.

4.1.1.2.3 Roads

All paved roads and parking lots are deteriorating and will require replacement or rehabilitation. Parking lots will be resealed in FY 2007 and FY 2008 through maintenance and repair projects. Operating expense funds will be used to replace road surfaces at both entrances into the North Las Vegas Facility during the planning period. Plans for a freeway flyover in the vicinity of the North Las Vegas Facility is under consideration by the county. Once a final plan is announced impacts to the North Las Vegas Facility will be determined.

4.1.1.3 Remote Sensing Laboratory - Nellis Facilities and Infrastructure

4.1.1.3.1 Facilities and Buildings

The Remote Sensing Laboratory - Nellis occupies 6 buildings and 3 trailers on approximately 35 secured acres on the Nellis Air Force Base in Las Vegas, Nevada.

A combination of inadequate investments since the first building was initially occupied in 1989 and issues revolving around landlord responsibilities have caused

Aerial view of RSL-Nellis

Fail

infrastructure over the next ten years are based on the Maintenance Summits and the resulting NNSA corporate goals to reduce deferred maintenance on all facilities and infrastructure to industry standards and to reduce deferred maintenance on all mission-critical facilities and infrastructure to less than 5 percent of replacement plant value.

Data were extracted from the Facility Information Management System as of FY 2005 end of fiscal year accounting. The Facility Information Management System is updated annually in September. Inspection of all facilities and infrastructure identified $330 million in deferred maintenance backlog.

Table 4-1 shows specific details on the current facility conditions of NNSA/NSO's active and spare buildings by gross square footage as of FY 2007. Table 4-2 shows specific details on the predicted future facility conditions of NNSA/NSO's active and spare buildings by gross square footage in FY 2016.

Table 4-1: Current Conditions of NNSA/NSO's Active and Spare Buildings

Use Category	Summary of Current (FY 2007) NNSA/NSO Facility Condition Percentage in Excellent, Good, Adequate, Fair, Poor, or Fail Condition Total Square Footage = 3,068,641 for FY 2007					
	(1) Excellent	(2) Good	(3) Adequate	(4) Fair	(5) Poor	(6) Fail
a. Administrative (Office)	7.7%	1.0%	2.9%	4.2%	2.9%	1.5%
b. Storage	8.8%	1.5%	1.3%	4.4%	3.3%	0.6%
c. Industrial/Production/Process	7.3%	2.1%	3.1%	2.3%	1.9%	0.0%
d. Research and Development	4.6%	1.5%	0.4%	1.3%	0.2%	0.0%
e. Service Buildings[1]	6.0%	1.0%	2.1%	4.0%	1.5%	1.9%
f. Other (All other categories)	6.0%	2.1%	3.5%	5.4%	0.4%	1.5%
TOTAL (a-f above)	40.4%	9.2%	13.3%	21.6%	10.2%	5.5%
Projected Sitewide Facility Condition Index (FCI) = 0.09						

[1] Service Buildings DO NOT include service structures (structures that provide service support function that is close to the point of consumption, for example, gasoline pumps)

Table 4-2: Predicted Future Conditions of NNSA/NSO's Active and Spare Buildings

Use Category	Summary of Future (FY 2016) NNSA/NSO Facility Condition Percentage in Excellent, Good, Adequate, Fair, Poor, or Fail Condition Total Square Footage = 3,045,679 in FY 2016					
	(1) Excellent	(2) Good	(3) Adequate	(4) Fair	(5) Poor	(6) Fail
a. Administrative (Office)	7.8%	1.1%	3.0%	4.2%	3.0%	1.5%
b. Storage	8.9%	1.5%	1.3%	4.0%	3.0%	0.6%
c. Industrial/Production/Process	7.4%	2.1%	3.2%	2.3%	1.9%	0.0%
d. Research and Development	4.6%	1.5%	0.4%	1.3%	0.2%	0.0%
e. Service Buildings[1]	6.1%	1.1%	2.1%	4.0%	1.5%	1.7%
f. Other (All other categories)	6.1%	2.1%	3.6%	5.5%	0.2%	1.5%
TOTAL (a-f above)	40.9%	9.4%	13.6%	21.3%	9.8%	5.3%
Projected Sitewide Facility Condition Index (FCI) = 0.0552						

[1] Service Buildings DO NOT include service structures (structures that provide service support function that is close to the point of consumption, for example, gasoline pumps)

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reached a target condition which can be maintained at optimum levels and will then function at optimum levels.

4.1.2.2 Utilization

The NNSA/NSO space utilization process is initiated in accordance with NNSA/NSO Manual 412.XA, *Project Screening and Location Approval Process.* The objectives of this process are to ensure that projects conducted at the Nevada Test Site, North Las Vegas Facility, or other facilities under the control of NNSA/NSO are an appropriate use of the site and its resources and to ensure that new missions are compatible with existing missions.

The occupancy and/or conduct of operations involving NNSA/NSO operated and leased real estate are authorized by a Real Estate/Operations Permit, which is issued in accordance with NNSA/NSO Manual 412.X1C, *Real Estate/Operations Permit.*

The Real Estate/Operations Permit process is administered by NNSA/NSO. An NNSA/NSO project manager ensures that all new work, including proposed changes to work, is consistent with the approved Real Estate/Operations Permit. Newly identified risks are evaluated prior to authorizing use of buildings, facilities, or land areas. Bechtel Nevada performs the space management function to achieve effective and cost efficient use of NNSA/NSO facilities.

All operating and operational standby facilities and buildings must have an approved and current Real Estate/Operations Permit assigning the facility or building to the using organization. The existence of other agreements or authorization processes does not preclude the requirement for a current NNSA/NSO Real Estate/Operations Permit. Bechtel Nevada performs the space management function to achieve effective and cost efficient use of NNSA/NSO facilities. Bechtel Nevada's space management process reacts to changing work operations and activities to integrate space use and organizations performing the work.

4.1.2.3 Future Space Needs

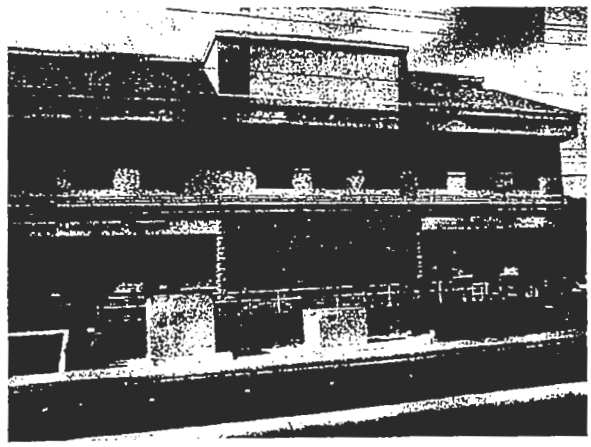
Future space needs are dependent on the NNSA vision for the NTS. Space needs will increase if functions from other sites are relocated to the NTS. The extent to which space needs increase will depend on the function and number of personnel that support it. The potential exists for a dramatic increase in square footage required for these functions.

Current plans to replace buildings currently in use in Mercury with energy efficient buildings will house more personnel on a smaller footprint. It will enable personnel currently working in Control Point buildings in Area 6 to be relocated to the new Mercury buildings. An assessment of square footage needs by the various groups that will occupy these new buildings is currently being conducted to ensure that the use of the new space will be optimized.

Space required by Wackenhut personnel to meet growing security needs at the NTS is discussed in detail in Section 4.2.1, Security Infrastructure.

4.1.2.4 Leased Space

Spaced leased on Shadow Lane in Las Vegas, Nevada, will continue to function indefinitely as an office for the Bechtel Nevada Employee Assistance Program. Confidentiality necessary to support this program requires a satellite location.



Shadow Lane Facility

The Cheyenne Facility in Las Vegas, Nevada, is temporary leased space. The NNSA decided to relocate many North Las Vegas Facility occupants to the Cheyenne Facility in response to the increased positive Beryllium-induced Lymphocyte Proliferation Tests of employees located in the B-1, B-2, and B-3 buildings. Buildings B-1 and B-2 were decommissioned through the summer of 2004. Building B-3 is slated for rehabilitation. This lease will terminate upon completion of the B-3 rehabilitation and subsequent occupancy by employees currently housed at the Cheyenne Facility.

Cheyenne Facility Building 4

Six NNSA/NSO buildings are constructed on property owned by the U.S. Air Force at Nellis Air Force Base in Las Vegas, Nevada. There is a Memorandum of Agreement between the U.S. Air Force and the NNSA whereby the land belongs to the Air Force, but is under lease to the NNSA for 25 years (as of 1989), with an option for a 25-year extension.

The added security and logistical convenience of being adjacent to the Nellis Air Force Base runway is particularly advantageous for accommodating NNSA/NSO's nuclear emergency response activities.

The Remote Sensing Laboratory - Andrews occupies one building and one hangar on the Andrews Air Force Base in Camp Springs, Maryland. The building, which is owned by NNSA/NSO, was constructed on property owned by the U.S. Air Force. There is a Memorandum of Agreement between the U.S. Air Force and the NNSA whereby the land belongs to the U.S. Air Force and is under lease to the NNSA for 25 years (as of 1999). The leased hangar space allows access to, and use of, the Andrews Air Force Base runway. The Remote Sensing Laboratory - Andrews provides emergency response resources for weapons-of-mass destruction incidents. The laboratory also has resources that can be used to assess environmental and facility conditions using complex radiation measurements, and resources to provide protection systems for critical infrastructure.

Livermore Operations, located in Livermore, California, occupies a single leased facility. Livermore Operations provides resources for experiments in high-energy density physics and hydrodynamics in support of the Stockpile Stewardship Program. This space will continue to be leased to provide an appropriate location to support the NTS and the national weapons laboratories through the development and fabrication of key diagnostics. Los Alamos Operations is a leased building located atop the Pajarito Plateau in North-central New Mexico near Los Alamos. Los Alamos Operations provides resources for material dynamic and hydrodynamic experimental programs in support of the Stockpile Stewardship Program. Los Alamos Operations also supports the NTS by developing the diagnostic designs proposed by physicists from the Los Alamos National Laboratory. This support ranges from concept development to field demonstrations to data interpretation. Los Alamos Operations also has a satellite location supporting Sandia National Laboratories in Albuquerque, New Mexico at Sandia National Laboratories' Technical Area IV location on Kirtland Air Force Base.

The Special Technologies Laboratory is located in three leased buildings in Santa Barbara, California, near the campus of the University of California at Santa Barbara. The Special Technologies Laboratory provides specialized expertise in radiation detection and spectroscopy, applied physics, software and firmware, and compact low-power electronics.

Leased facilities at auxiliary sites are necessary to ensure the support team is located where the work in support of the missions is conducted. These leases are expected to continue into the foreseeable future.

4.1.2.5 Land-Use Planning

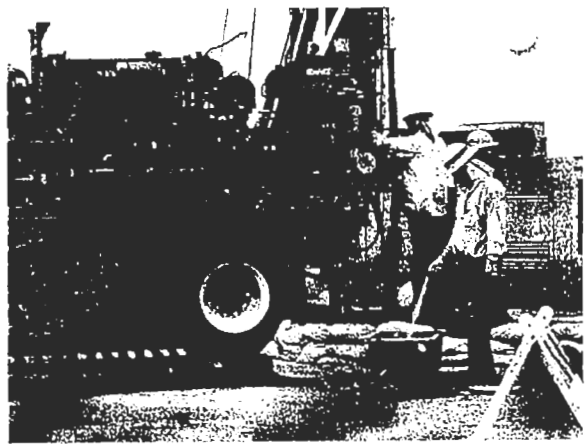
4.1.2.5.1 Long-Term Stewardship

The NNSA's Hydrologic Resources Management Program's primary responsibility is to acquire hydrologic data and information of groundwater supplies to support ongoing activities and to assist in planning new uses for the NTS. The main objective of this program is to provide a sound technical basis for NTS groundwater use decisions regarding the quality and quantity of water resources available on and around the NTS on a long-term scale. A major element is the protection and long-term stewardship of NTS groundwater resources. A range of activities including monitoring of groundwater levels, quality and consumption, monitoring well evaluation, and maintaining a wellhead protection program are conducted to accomplish this element. The program supports groundwater flow model development for both the Death Valley Region, which includes the NTS, and for the NTS itself, and will continue to support refinement of these models. Based upon hydrologic investigations and modeling, proposed new groundwater uses are evaluated (on and near the NTS) for their potential impacts on NTS groundwater reserves, quality, flow paths, and radionuclide migration.

The physical controls needed to ensure the protection of people and the environment from exposure to contaminated sites at the NTS will depend on future land-use policies, remediation, and closure activities. All environmental restoration activities at the NTS (remediation and closure of historically contaminated sites) are the source of residual radioactive materials. Remediation of environmental restoration sites at the NTS takes place under the 1996 Federal Facilities Agreement and Consent Order between the U.S. Department of Energy, the state of Nevada, and the U.S. Department of Defense. The Federal Facilities Agreement and Consent Order defines a Resource Conservation and Recovery Act-like process for remediation and closure of these sites and requires the state of Nevada review and approval of all corrective actions.

The results of the restoration activities associated with the environmental restoration sites (including underground test areas, industrial, and soil sites) need to be reviewed. The overall result of the review will be a determination of whether any changes are needed to ensure the continued adequacy of the physical controls with respect to radionuclide releases from sources of residual radioactive materials other than the waste disposal sites. The review will also identify data gaps and uncertainties associated with sources of residual radioactive material.

Future land use is another key element, and changes in land use must be considered in annual determinations of adequacy. The review of land use is to be based on a review of documentation such as land-use plans or planning documents, National Environmental Policy Act documents (e.g., environmental assessments, environmental impact statements), long-term stewardship documents, surveys of land use (past, present, and projected) adjacent to the U.S. Department of Energy site, and other relevant documents. The overall result of the review will be a determination of whether any changes are needed to ensure the continued adequacy of the controls with respect to land-use assumptions. The current and future land-use planning for the NTS is described in the *1996 Final Environmental Impact Statement for the Nevada Test Site and Offsite Locations in the State of Nevada*. The Environmental Impact Statement is implemented through the *1998 Nevada Test Site Resource Management Plan*.



Drilling activities for the North Las Vegas Facility groundwater project

4.1.2.5.2 National Environmental Policy Act (NEPA)

The NEPA (*Title 42 United States Code 4321*, as amended), was one of the first laws written that establishes the broad national framework for protecting our environment. NEPA's basic policy is to ensure that all branches of government give proper consideration to the environment prior to undertaking any major federal action that significantly affects the environment.

NNSA/NSO uses three levels of documentation to demonstrate compliance with NEPA. The first level is an Environmental Impact Statement; a document that contains a full disclosure of the potential environmental effects of proposed actions and the reasonable alternatives to those actions. The second level is an Environmental Assessment; a document containing a concise discussion of proposed actions and alternatives, and the potential environmental effects. The Environmental Assessment is used to determine if an Environmental Impact Statement is necessary. The third level is a Categorical Exclusion Determination, which documents classes of action that have been found to have no adverse environmental impacts based on similar previous activities.

Since November 1994, NNSA/NSO has had full delegation of authority from the U.S. Department of Energy-Headquarters for Categorical Exclusion Determinations, Environmental Assessments, issuing Findings of No Significant Impact, and documenting floodplain and wetland actions related to NNSA/NSO proposed actions.

To ensure NEPA compliance, the NNSA/NSO Work Acceptance Process Procedural Instructions require that a determination be made on a NEPA Environmental Evaluation Checklist which is completed for all proposed projects or activities (letter to Bechtel Nevada Distribution, U.S. Department of Energy, National Nuclear Security Administration Nevada Operations Office, Las Vegas, Nevada, February 25, 2000, from Kathleen A. Carlson). Once a checklist is completed, the NNSA/NSO NEPA Compliance Officer reviews it to determine whether the project or activity is included in the NTS Environmental Impact Statement and Record of Decision, or covered under another previously completed NEPA analysis. The projects presented in this *TYSP* will undergo an appropriate level of analysis and documentation as required by NEPA.

4.1.2.5.3 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The CERCLA and the Superfund Amendments and Reauthorization Act provide a framework for the cleanup of waste sites containing hazardous substances and an emergency response program in the event of a release of a hazardous substance to the environment. No hazardous waste cleanup operations on the NTS are regulated under CERCLA; they are instead regulated under the resource Conservation and Recovery Act. The only requirements of CERCLA applicable to NTS operations pertain to an emergency response program for hazardous substance releases to the environment. Federal, state, and local emergency planning authorities must be provided information regarding the presence and storage of hazardous substances and their planned and unplanned environmental releases, including provisions and plans for responding to emergency situations involving hazardous materials. In addition, federal compliance with right-to-know and pollution prevention requirements requires all federal facilities to comply with the provisions of the Emergency Planning and Community Right-to-Know Act

Video mole survey conducted on sewer pipes, soil sampling; and global positioning system survey of corrective action unit 543

including the requirement that the local emergency planning committee and state emergency response agencies be notified immediately of accidental or unplanned releases of an extremely hazardous substance to the environment. Also, the national response center must be notified if the release exceeds the CERCLA reportable quantity for the particular hazardous substance.

4.1.2.5.4 Assigned Use Areas

Figure 4.4 depicts the current layout and area division of the NTS. It also depicts the corridor that defines the primary area of activity for defense programs at the NTS. As shown, most mission-critical facilities and infrastructure on the NTS are located within this corridor. The majority of maintenance, support, and development activities will be directed towards improving facilities and infrastructure in this corridor.

The NTS has consolidated most of the NNSA experimental facilities along a central corridor parallel to the Mercury Highway. This allows the high hazard experiments to occur in a fairly cost effective manner and the focus to remain on the mission-critical elements of the NTS. It also allows maintenance to be reduced for the majority of the site, where the area is approximately 1,375 square miles. Mission-critical buildings and infrastructure are identified by users through the Site Development Working Group.

Roads that provide access to the mission-critical buildings are located along, or in near proximity to, the Mercury Highway, the main thoroughfare on the NTS. The roads outside the designated corridor are not maintained unless paid for by a specific program.

Several infrastructure elements within the NTS have replaced single function structures with a multifunction structure. Examples of this are power and telephone lines which are carried on the same poles and the 138kV high voltage lines and fiber optic cables that are supported by common structures. Communication towers support a variety of communication media including microwave, two-way radio, and pagers.

The efforts that result in consolidation, improved safety and security, and economies of scale advantages have enhanced the capabilities necessary to maintain the Stockpile Stewardship Program, as well as, meet the national security technology needs of other federal agencies and other funding sponsors that choose to locate their projects and activities at the NTS.

4.1.3 Site Footprint Management

After more than 40 years of testing, the NTS has had various groupings of buildings and other structures onsite. Since the cessation of the nuclear testing in 1992, and the subsequent creation of the Stockpile Stewardship Program, NNSA/NSO and Bechtel Nevada have consolidated working environments and disposed of many excess facilities.

Planning and preparation for the disposition of excess facilities has been a high priority at the NTS since 2001 when Bechtel Nevada established an aggressive and effective program, sponsored by the Facilities and Recapitalization Initiative, to dispose of buildings that were no longer needed.

The process in place today is to identify buildings that no longer support NNSA/NSO's missions, programs, or support requirements and dispose of those excess buildings. Disposing of such buildings results in significant cost and/or risk reductions. The data reported in the TYSP reflect the current and projected NNSA excess buildings elimination and new construction at the site. Identification of sources to fund disposition of excess buildings is ongoing.

Controlled demolition of Building B-2

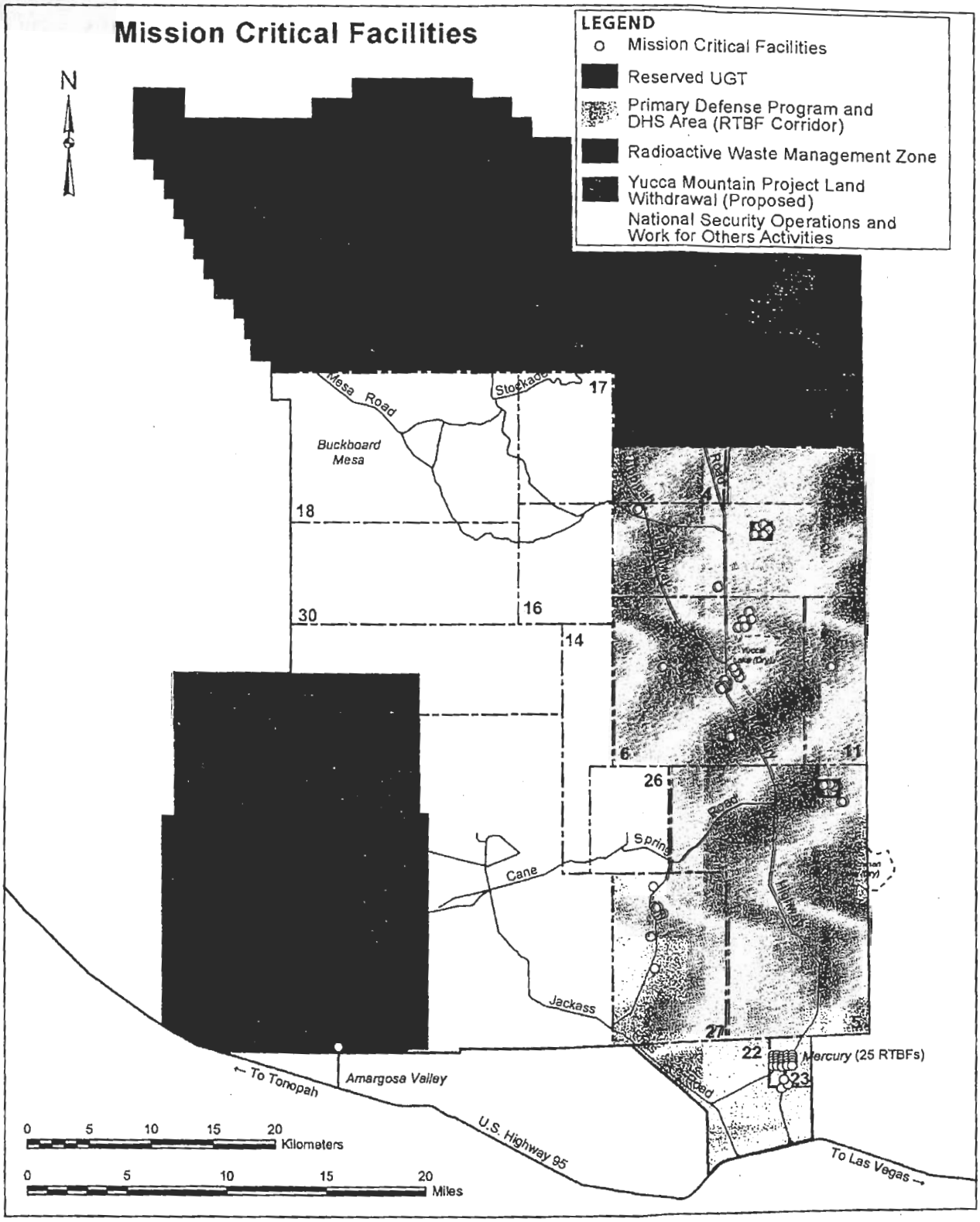


Figure 4-4: NTS Utilization Readiness in Technical Base and Facilities (RTBF) Corridor

4.1.3.1 Excess Facilities Footprint Elimination

Disposition of excess buildings has been identified for FY 2006 through FY 2009 and totals 58,944 gross square feet. Ten buildings or s tructures totaling 39,662 gross square feet are scheduled for disposition in FY 2006. Four buildings or s tructures totaling 14,260 gross square feet are scheduled for disposition in FY 2007. In FY 2009, one building that is 5,022 gross square feet has been identified for disposition.

Excess building demolition is supported by the Facilities and Infrastructure Recapitalization Program funding and is executed by the prioritized list provided in t his T YSP.

Bechtel Nevada has scheduled disposal of uncontaminated buildings on the disposal list through FY 2009. Because the FY 2004-2005 demolition program fulf ills NNS A/NSO's requir ement to dispose of 50 percent of all non-contaminated real property determined t o be excess to all NNS A mission requirements, Bechtel Nevada has exceeded the requirement.

4.1.3.2 New Construction Footprint Added

A summary of new construction footprint added since the FY 2003 baseline is summarized in Appendix A, Attachment E-2. The new construction scheduled for FY 2007 and beyond is primarily funded by other government agencies (U.S. Department of Defense), work for others (U.S. Department of Homeland Secur ity), and Readiness in Technical Base Facilities Line It em (Fire Stations 1 and 2). Several projects that were included in t he *FY 2006 TYCSP* were reduced in scope or eliminat ed due to funding cons traints.

4.1.3.3 Grandfathered Footprint Added

A total of 23,282 gross square feet of grandfathered footprint were added by t he Atlas Pulsed-Power Facility (22,457 gross square feet) and the Atlas Site (875 gross square feet).

4.1.3.4 Site Footprint Reduction Analysis

The Excess Facilities Disposition Plan is contained in Appendix A, Attachment E-1. The proposed new construction for space added spreadsheet (Appendix A, Attachment E-2) is included to provide information f or t he offset of disposed buildings as requested by the guidance. This information is summarized in a graphic representation (Appendix A, Attachment E-3) of gross square feet of space eliminated and space added between FY 2002 and FY 2010. Figure 4-5 summarizes the gross square foot tracking space associated with the Facility Disposition Plan.

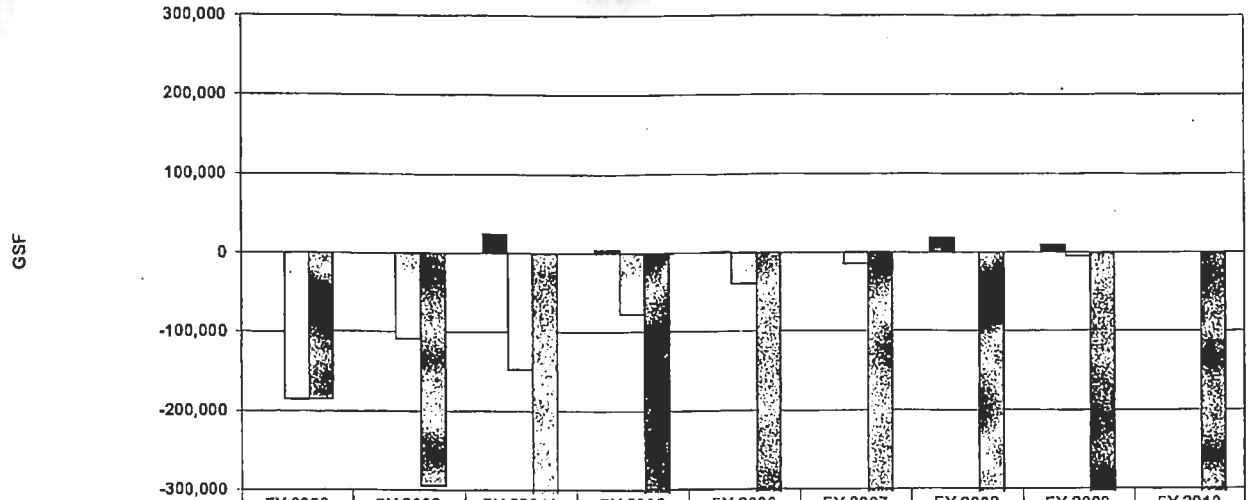
4.1.3.5 Waiver and Transfer

To date, 200,000 gross square feet has been transferred to Sandia N ational Labor atories.

4.1.4 Deferred Maintenance Reduction/Facility Condition Index

Bechtel Nevada, under NNSA/NSO oversight, has implemented the Facility and Infrastructure Assessment Process and has issued Infrastructure Management Plans to identify significant areas of deferred maintenance during FY 2002 and FY 2003. A *FY 2006 Bechtel Nevada Annual Maintenance Plan* has been developed to coordinate deferred maintenance activities. The condition assessment pr ocess,

Maintaining telecommunications on Hill 200



	FY 2002	FY 2003	FY 20041	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
New Construction (gsf)	0	0	24,234	4,596	1,600	0	18,500	10,000	0
Space Eliminated (gsf)	-185,224	-109,250	-147,977	-77,748	-39,662	-14,260	0	-5,022	0
Cumulative Space Impact	-185,224	-294,474	-418,217	-491,369	-529,431	-543,691	-525,191	-520,213	-520,213

Figure 4-5: Gross Square Foot (gsf) Tracking Space Summary

implemented in FY 2002, accounts for the correct identification and subsequent large increase in deferred maintenance shown in the TYSP. This effort supported the NNSA/NSO goal to establish a deferred maintenance baseline in FY 2003. Deferred maintenance and the overall maintenance planning and status is developed and published annually in the *FY 2006 Bechtel Nevada Annual Maintenance Plan*. The following represents a high-level summary extracted from that document. Additional details may be found in the *FY 2006 Bechtel Nevada Annual Maintenance Plan*.

Deferred maintenance as defined in the guidance for the *FY 2003 TYSP* is the basis for Bechtel Nevada's identification of the deferred maintenance baseline. Determination of the deferred maintenance baseline used the following criteria in defining deferred maintenance:

- Maintenance required during the year that was beyond the site's current year funding capability was identified as deferred maintenance.
- Maintenance identified as of a substantial nature that cannot be budgeted within current funding profiles is identified as deferred maintenance.
- The Facility and Infrastructure Assessment and Condition Assessment Survey processes, as well as the Infrastructure Management Plans, have identified facility and infrastructure components that are being used well beyond their useful life cycle. These components are subject to imminent failure and required replacement several years prior to FY 2003 and are identified as deferred maintenance.
- The Infrastructure Management Plans have identified major elements in the infrastructure that require replacement (such as roads, water, communication equipment, and power system components) and therefore represent deferred maintenance. Cost estimates for these projects and the associated deferred maintenance are based on rough-order-of-magnitude-type estimates.

Attachment F-1 (Appendix A) presents the deferred maintenance baseline that was established in FY 2003. Attachment F-2 (Appendix A) presents the projected deferred maintenance reduction data for both mission-critical and non-mission-dependent facilities and infrastructure. Figure 4-6 depicts that the buy down in mission-critical deferred maintenance will reach the corporate goal of 5 percent by FY 2009. Figure 4-7 shows that the total deferred maintenance backlog (non-mission-dependent facilities and infrastructure) is projected to be reduced to less than 10 percent by FY 2009. The values in the Condition Assessment Information System were used

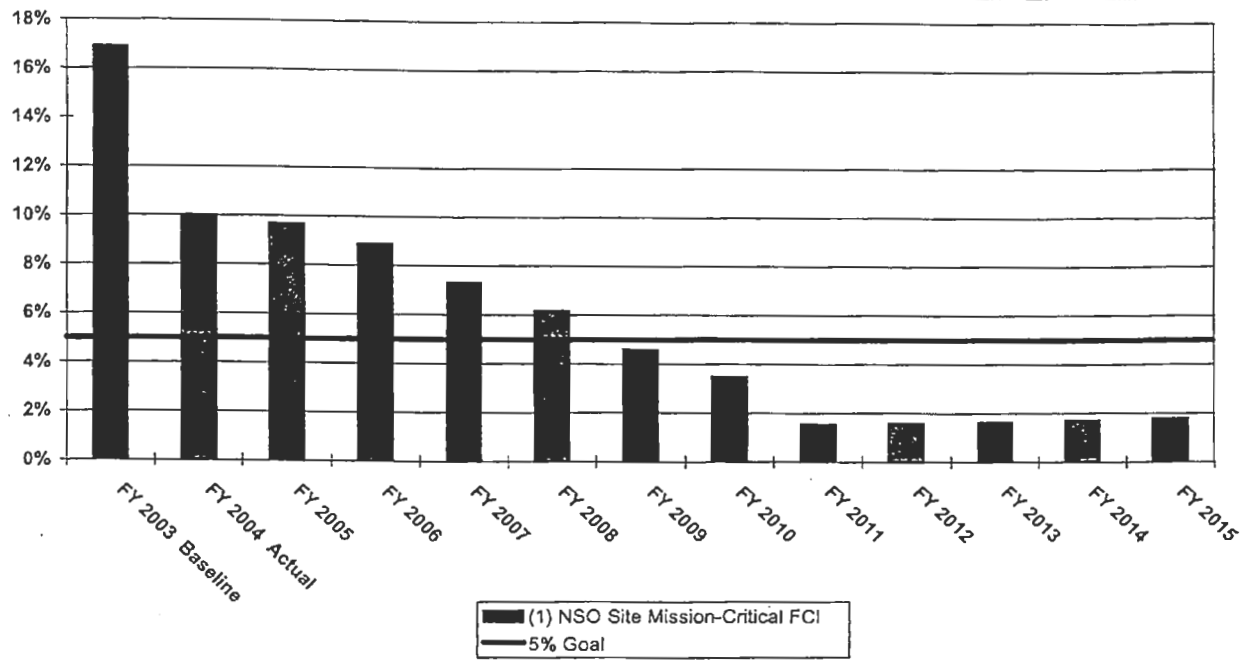


Figure 4-6: Buydown in Mission-Critical Deferred Maintenance to Reach Corporate Goal of 5% by FY 2009

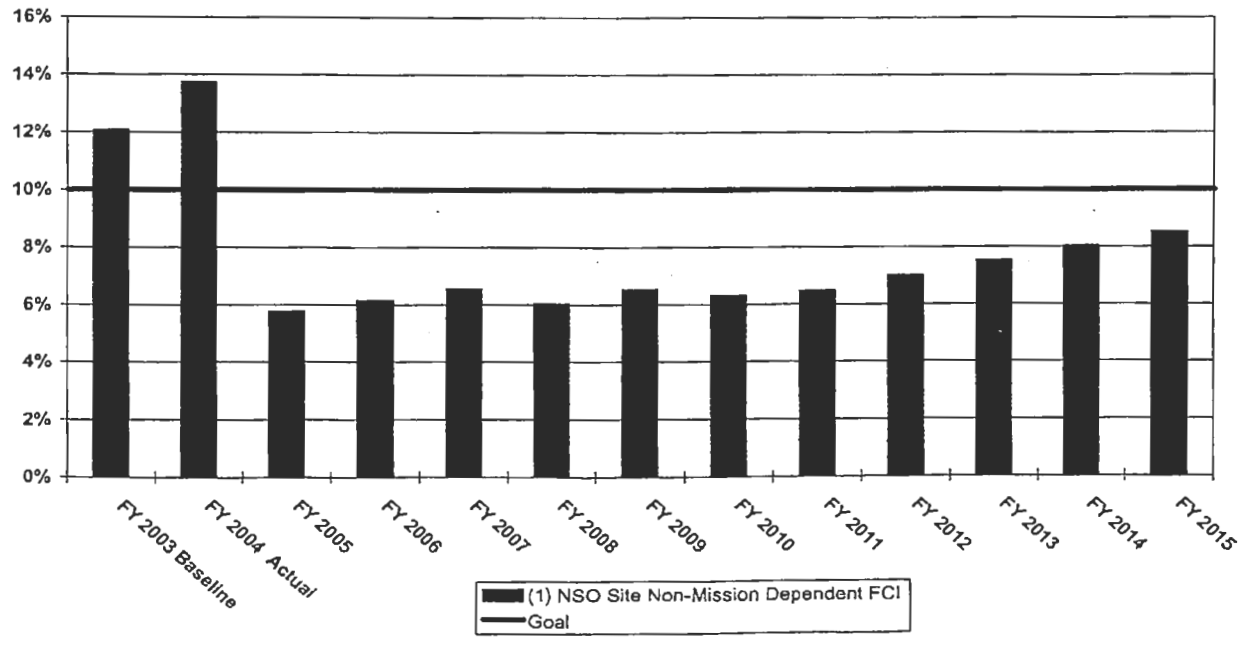


Figure 4-7: Total Non-Mission-Dependent Deferred Maintenance Backlog to Reach Corporate Goal of Less than 10% by FY 2009

to calculate the deferred maintenance. These values are included in the *FY2006 Bechtel Nevada Annual Maintenance Plan*.

Deferred maintenance buy down with general plant projects and expense projects is being accomplished chiefly through Facilities and Infrastructure Recapitalization Program funding, with funding for deferred maintenance projects aggressively averaging over 75 percent of funding through the Facilities and Infrastructure Recapitalization Program that concludes in FY 2011. The remaining 25 percent of Facilities and Infrastructure Recapitalization Program funding is applied primarily to recapitalization projects. This helps the shortfall of recapitalization of all the Bechtel Nevada facilities and infrastructure, a problem that is being corrected as the Facilities and Infrastructure Recapitalization Program terminates in FY 2011 with a planned increase in Readiness in Technical Base and Facilities funding.

Building disposition activities removed over $8.6 million in deferred maintenance from FY 2003 through FY 2006.

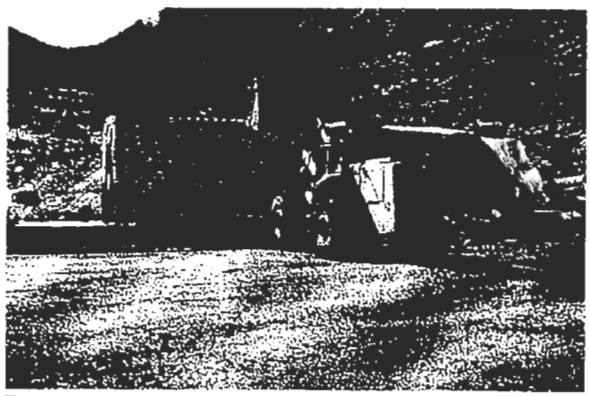
Other funding sources that are buying down deferred maintenance include Line Item funding and site maintenance. NNSA/NSO's current approved Line Items, as shown in Attachment A-1 in Appendix A, include four projects with deferred maintenance, which buys down approximately $15 million during the planning period. Site maintenance activities also are planned to buy down $1.5 million in deferred maintenance per year during the planning period.

Deferred maintenance reduction will be a significant activity in the next few years. In order for the deferred maintenance backlog to decrease, Bechtel Nevada must maintain maintenance funding (required maintenance) at approximately 2 percent of replacement plant value and establish a recapitalization funding profile at approximately the same level.

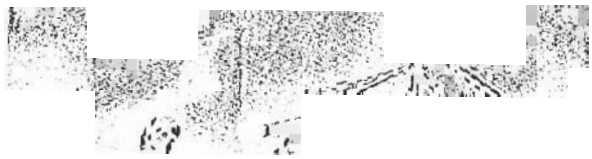
Previously, the definition of required maintenance provided only forecasts for preventive maintenance and predictive maintenance. Beginning in FY 2003, required maintenance projections included a planned reduction of deferred maintenance. In order to meet the commitments established at the Deferred Maintenance Summits, required maintenance in FY 2003 was planned at higher levels than in past years. The required maintenance total was reflected in the planned increase of maintenance projects and, in general, maintenance projects derived from the condition assessment program. The condition assessments support the increase requested to meet deferred maintenance reduction targets.

The backlog of maintenance and repair projects is over four years, and growing rapidly as the facilities and systems age. Yearly maintenance and repair requirements continued to grow through FY 2005. The backlog of maintenance and repair stabilized at that point as the Condition Assessment Surveys were completed in FY 2003-2005. How fast the backlog is reduced will depend on the funding levels for all projects. Maintenance and repair projects are funded from the facility space charges. The maintenance and repair program is limited to approximately $3 million per year. This will contribute significantly to the reduction in deferred maintenance.

The direct funding of Infrastructure General Plant Projects has been eliminated over the last five years and Readiness in Technical Base and Facilities funds are projected to be zero during the next ten years.



Demolition of building 12-899



The Federal Facilities Council recommends an investment equal to 2-4 percent replacement plant value as a minimum maintenance investment for mission-critical facilities and infrastructure. The July 18, 2005, letter from Tom D'Agostino, Acting Deputy Administrator for Defense Programs, subject: *Maintenance of the NNSA Facilities and Infrastructure*, directed that a minimum of 2 percent replacement plant value be invested in maintenance at every NNSA site. At NSO's facilities, the maintenance investment is established using an indirect space charge fee to cover the majority of our facilities and infrastructure, combined with direct funded maintenance provided by the Programs to support key mission-critical Programmatic facilities. The maintenance investment is reported quarterly to NNSA in a standard report called the Integrated Facilities and Infrastructure Crosscut which places burdens on indirect maintenance funding so that it may be nominally compared to the direct funded maintenance. The sum of those investments then may be compared to the replacement plant value of the site, which by definition is the burdened replacement cost.

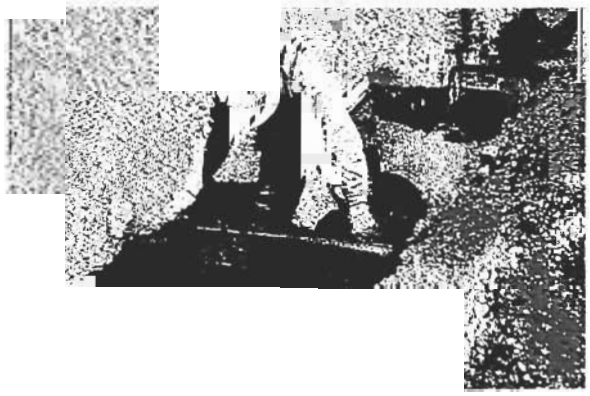
It is critical to note here that the NSO's maintenance program has been tracking at over two percent maintenance investment until FY 2005. However, in FY 2005 two things occurred to impact this calculation. First the evaluation of replacement plant value was modified and a new method was integrated into the Facility Information Management System. This was coupled with a close evaluation of NTS facilities and infrastructure to insure correct values were being used. The result of this re-evaluation was an approximately $400 million increase in replacement plant value. The immediate consequence of the increase in replacement plant value was a corresponding decrease in percentage of replacement plant value invested in maintenance. The FY 2005 maintenance plan was based on the lower replacement plant value and could not be modified midyear to adapt to the change. The definition of what was "mission essential" (now mission critical) was strictly applied so the base required to support completion of the Defense Programs mission was more accurately identified, increasing the mission critical replacement plant value significantly. This major one-time modification is now in place.

The total NSO replacement plant value for all facilities and infrastructure is approximately $2.8 billion. Therefore, to meet industry standards, a sustaining maintenance investment of between $56 million and $112 million is required annually. However, there are 66 facilities at the NTS with a replacement plant value of $423 million that have no value to the mission, are in the disposition cycle and will eventually become excess, and/or have limited or no utilization. By removing the $423 million replacement plant value from the $2.8 billion replacement plant value the new total replacement plant value for operation facilities and infrastructure is about $2.4 billion. Therefore, this will lower the sustaining maintenance investment, of two to four percent of replacement plant value, to between $48 million and $96 million annually.

In FY 2005, $24.5 million was budgeted in the indirect budget for sustaining maintenance. However, since replacement plant value is calculated using direct funding, which includes cost model burdens, the

Heating, ventilation, and air conditioning unit repair in the summer time

eams.



Required maintenance does not include costs for corrective maintenance, which is the repair of failed or malfunctioning equipment, systems, or facilities to restore them to intended function or design. Required maintenance consists of:

> *Estimates of all costs to perform maintenance activities for a building or other structure and facility that one would normally expect to be accomplished as determined by engineering/maintenance/life-cycle analysis and/or vendor maintenance scheduling.*

Required maintenance reported in the Facility Information Management System is unconstrained and reflects requirements, while the budgeted number will reflect actual fiscal year allocation. The required maintenance number was derived using requirements from the total real-property inventory ($2.4 billion).

When reporting required maintenance in the Facility Information Management System database, Bechtel Nevada uses the definitions from the U.S. Department of Energy Chief Financial Officer's guidelines. To meet the commitments established at the Deferred Maintenance Summits, Bechtel Nevada planned higher levels of required maintenance than in past years. Bechtel Nevada's FY 2003 prediction stated:

> *In the next 5 years, deferred maintenance and corrective maintenance is projected to shrink as baseline maintenance funding grows to 2-4 percent of replacement value.*

The total deferred maintenance in the FY 2003 baseline was identified at $330 million. The total amount of deferred maintenance expressed in dollars grew because of a much more thorough and accurate condition assessment of all facilities and infrastructure. The required maintenance total reflects the planned increase of maintenance projects derived from the condition assessment program. These projects support the increase requested to meet deferred maintenance reduction targets. In FY 2003, the rigorous condition assessments were internally audited to ensure consistent identification of deficiencies. In FY 2004, Sandia National Laboratories conducted an independent audit of the FY 2003 condition assessments. In FY 2005, Bechtel Nevada completed the first full cycle of facility and infrastructure assessments conducted by certified Condition Assessment Information System inspectors. In addition to the stronger assessment process now in use, development of maintenance projects by Bechtel Nevada's Infrastructure Department increased deferred maintenance at a level that will provide the baseline for achieving NNSA corporate goal reductions.

Open-air maintenance

Facilities and Infrastructure Recapitalization Program and Readiness in Technical Base and Facilities direct funds will assist in achieving the desired level of deferred maintenance reduction. Indirect maintenance funding remains insufficient to maintain the deferred maintenance goals in mission-critical facilities in the long-term. As a consequence, achieving the desired deferred maintenance reductions will require additional direct and indirect funding identified in the *FY 2006 Bechtel Nevada Annual Maintenance Plan*.

For the past four years, the required maintenance reported in the Facility Information Management System has declined. This reduction in projected requirements was based on the method of calculation used for required maintenance per the Bechtel Nevada cost model. The estimate was based only on the cost of preventive maintenance and predictive maintenance craft hours applied during the previous year. With the advent of a more flexible computerized maintenance management system, maintenance managers have been able to perform a more accurate job of segregating preventive maintenance and predictive maintenance from other work.

Beginning in FY 2001, the reduction in reported completion rates was caused by cost model changes that shifted overhead charges out of recharge pools.

However, there was no actual reduction in preventive maintenance work load. The apparent decline from FY 1999 to FY 2002 was not due to a reduction in hours applied to preventive maintenance (an historical average of 45,841), but a reduction in the burdened cost of labor applied. With development of the *FY 2006 Bechtel Nevada Annual Maintenance Plan* a consolidated site-wide plan, required maintenance shown in the Facility Information Management System will track consistently with the TYSP projections and will be sorted by mission-critical versus other facilities and infrastructure.

Three factors affect this:

(1) A revised comprehensive presentation of need (direct maintenance, indirect maintenance, Facilities and Infrastructure Recapitalization Program and Maintenance Reinvestment projects, and the planned maintenance identified for accomplishment).

(2) Realignment with the TYSP strategy for deferred maintenance reduction.

(3) A total picture of the amount of funding required for maintenance was provided for the first time in FY 2003. Prior to FY 2003, the Facility Information Management System estimates of required maintenance did not include authorized planned maintenance.

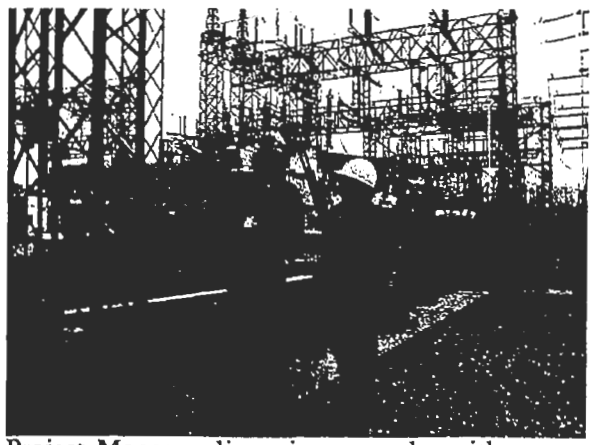
In FY 2007, required maintenance numbers will continue to increase as projected in FY 2006, reflecting the expectations expressed in the deferred maintenance reduction commitments. However, it is unknown at this time whether budgeted maintenance will increase. Deferred maintenance reduction will experience heightened activity in the next few years. To achieve a decrease in deferred maintenance, the NNSA must first maintain maintenance funding (required maintenance) at approximately 2 percent of replacement plant value and establish a recapitalization funding profile at approximately the same level. Providing an accurate required-maintenance estimate is one component of the solution to enable budgeting forecasts to cover maintenance needs in out years. Institutional General Plant Projects and Line Item projects are also necessary components to reduce deferred maintenance to within industry standards.

4.1.6 Identification of Replacement-in-Kind Requirements

Replacement-in-kind is an evolving program coming from NNSA/NA-10. Replacement-in-kind is conceptually designed to provide for key recapitalization needs as the Facilities and Infrastructure Recapitalization Program transitions to Readiness in Technical Base and Facilities. Replacement-in-kind is designed to provide a funding mechanism for replacement of large facility or infrastructure systems at NNSA sites for projects exceeding $500,000.

During development of the FY 2003 deferred maintenance baseline, requirements were established to forecast the replacement dates for facility and infrastructure subsystems based on expected physical lives. Replacement information may be modified after periodic condition assessments. Specific replacement-in-kind projects are identified in Appendix A, Attachment F-6, and include only replacement-in-kind needs associated with non-programmatic real property assets.

Projects were developed utilizing the projects module of the Condition Assessment Information Survey software and include deferred maintenance identified as part of the FY 2003 deferred maintenance baseline and deferred maintenance identified during roof assessments.



Project Manager discussing upgrades with Construction Program Manager at Jackass Flats substation

4.1.7 Utilities

4.1.7.1 NTS Utilities

The FY 2005 Facility Infrastructure Surveys revealed that 44 percent of the utilities' infrastructure elements need major rehabilitation or replacement. Many elements in the electrical, water, and communications areas were rated as poor. These components are discussed in the following subsections.

4.1.7.1.1 Electrical Power

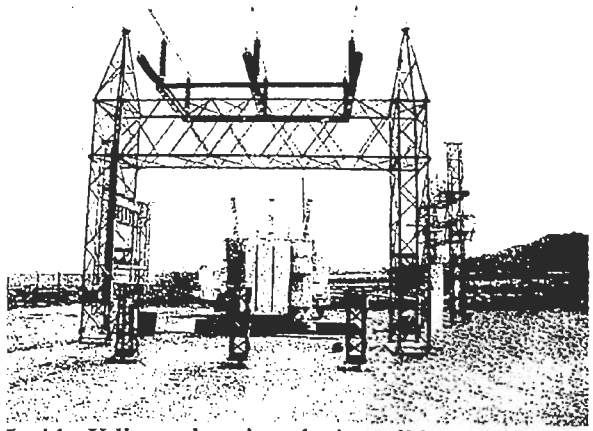
Most of the NTS power system is over 30 years old. Three Line Item projects over the past five years, coupled with aggressive maintenance, have stemmed the tide of transmission system failures. However, the age of the power system components and the lack of spare parts on the market leave a substantial amount of work to bring the power system to a future safe and reliable service status required to support all Defense Program activities at the NTS.

In FY 2003, Bechtel Nevada completed a Power Transmission System Management Plan. The following information is taken from the condition assessments and the management plan.

The 138kV Substation Modernization Project (completed in FY 2002) and the Bus Upgrades Project (completed in FY 2005), along with other projects, have made progress in upgrading the NTS's aging power system. The replacement of transmission and distribution components during this 10-year period will bring these components into fair to adequate condition, which is still short of the goal of good condition. These components consist of power lines, substations, oil fused cutouts, oil circuit reclosers, oil circuit breakers, vacuum circuit breakers, and transformers. The replacement of failing oil-based protective interrupting devices, valued at over $30 million, will be accomplished over a 5-year period that started in FY 2005. These devices are integral to the reliable and safe operation of the NTS's electrical transmission and distribution systems. Also, the repair of 60 miles of transmission lines with failing poles and cross-arms will be necessary in the last half of the ten-year period. One 12.5 kV distribution system is in poor condition, and needs to be replaced in the next 10 years. The replacement and upgrade of the Supervisory Control and Data Acquisition system for the 138kV electrical transmission system are also required during the planning period. Without these projects, maintenance personnel will lose remote control capability of the switching for the system. Labor and maintenance costs to keep the system functioning will increase as a result. Projects to correct these potential areas of failure are shown in Appendix A, Attachments A-3 and A-5.

The capacity of the NTS power system is adequate for the current loads and projected loads; however, the system's capacity is becoming more strained as the surrounding utilities continue to grow at a record pace. Exeter and Associates performed a load study for the NTS in FY 2001, which predicted a modest growth in loads over the next several years. Based on that projection, the NTS is expected to increase its loads to a possible 40+MW by FY 2008. At this load level, combined with projected utility growth, the 138kV transmission system will be at peak capacity. The utilities serving the NTS are planning upgrades that will increase total system capacity and Bechtel Nevada has informed power suppliers of our expected loads to allow proper planning.

Power requirements at the NTS have changed significantly since last year, when the TYSP reported a requirement for the Yucca Mountain Project of 52 MW. Since then, the current plan for the Yucca



Inside Valley substation during oil-based protective interrupting device replacement

cutoff while responsibility for the sewage outfall lines begins at the property site line. Overall, the current condition of all N orth Las Vegas Facility Com plex utilities infrastructure is good with only minor repairs required periodically. N o major repairs or replacements are anticipated, and with the replacement of a section of failed gas line in FY2003, current capacities of equipment and lines are sufficient for existing loads.

4.1.7.3 Remote Sensing Laboratory - Nellis Utilities

Utility support to the Remote Sensing Laboratory - Nellis is th rough t he Nellis Air F orce Base utility systems, which in turn, are supported by local utility companies. NNSA/NSO maintains utility connections to the existing base infrastructure. These connections are relatively new and in good condition. The electrical system to the Remote Sensing Laboratory - Nellis compound is adequate to provide an additional 2 MW of po wer. However, the ability to move that power through the Remote Sensing Laboratory - Nellis compound is nonexistent, since the existing electrical distribution system is only capable of suppor ting pr esent demands.

The water system suffers from constant low pressure, which continues to endanger the Remote Sensing Laboratory - Nellis mission by shutting down the water-cooled condensers that allow the air conditioning sys tem to function. Also, no expansion or addition of water-consuming facilities can be made until a new water source can be installed. Nellis Air Force Base has announced a w ater loop pr oject in the next five years and has invited NNSA/NSO to participate. In the interim, Nellis has offered to allow NNSA/NSO to tap into the water line running to Area 2 and to extend a line approximately 4,000 feet from the perimeter road to the compound. Eventuall y, t his int erim line could be capped and t he same connection used on the new loop that would be adjacent to the property. The most economical ne w source is approximately 1 mile east of the compound and belongs t o the Southern N evada Water Authority. Bechtel Nevada is working wit h Nellis Air For ce Base to solve the water problem. A project is scheduled for FY 2006 to meet Nellis Air F orce Base's timeline.

Preventive maintenance at a Remote Sensing Laboratory – Nellis facility

4.1.7.4 Remote Sensing Laboratory - Andrews Utilities

Utilities ar e provided by Andrews Air Force Base utility systems, which are supplied by local utility companies. NNSA/NSO only maint ains utility connections to the existing base infrastructure. Currently, these connections ar e relatively new and in good condition, so no major repair or replacements are needed.

4.1.7.5 Livermore Operations Utilities

All utilities ar e provided by local utility com panies.

4.1.7.6 Special Technologies Laboratory Utilities

All utilities ar e provided by local utility com panies.

4.1.8 Energy Management

The Bechtel Nevada Energy Manag ement Program mission is t o im plement t he energy Policy Act of 2005 through reducing t he use and cos t of energy in NNSA/NSO facilities by adv ancing energy ef ficiency, water conservation, and t he use of solar and ot her renewable energy sources.

NNSA/NSO currently utilizes electricity, fuel oil, natural gas, liquid petroleum gas, and steam in their facilities. Vehicles and equipment are powered by automobile gasoline, diesel, aviation gasoline, and jet fuel.

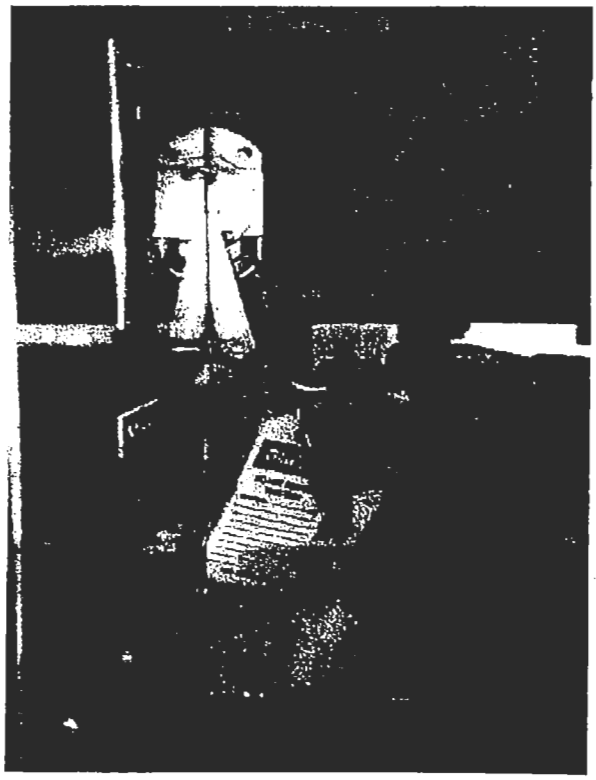
Historical energy use has steadily declined since FY 1985, the year established by NNSA/HQ as the base year for energy consumption. By FY 2003, NNSA/NSO sites had achieved a 57 percent reduction in energy consumption from the baseline. Recent increases in activities have reduced the reduction to 37 percent which is still above the previous Presidential Directive to reduce energy by 35 percent by FY 2010. One of the current energy goals is to reduce the greenhouse gas emissions that results from building energy use by 30 percent below FY 1990 levels by FY 2010. Energy use in terms of British Thermal Units was 216 x 10^9 or FY 1985 and 136 x 10^9 for FY 2005, a decrease of 36.9 percent for that time period. Petroleum-based fuel usage in NTS buildings totaled 318,852 gallons in FY 1985 and 137,392 gallons in FY 2005, a reduction of 56.9 percent for that time period.

Prior years' accomplishments in energy savings qualified for In-house Energy Management funding to perform energy savings projects. The projects included retrofitting lighting for the Remote Sensing Laboratory -Nellis, and NTS buildings 23-117 and 23-132; installing programmable thermostats for 100 buildings; installing electrical meters at NTS; and an Energy Savings Performance Contract was expected to retrofit lighting at all North Las Vegas buildings and the Remote Sensing Laboratory-Nellis hangar. All North Las Vegas Facility buildings are controlled through an energy management system that controls lighting and heating, ventilation and air conditioning during off hours and weekends. Most of the facility was desert landscaped to reduce water consumption.

Existing site-wide energy management programs include a policy statement and procedure for no cost/low cost energy conservation opportunities. In addition, maintenance personnel developed a facility condition inspection program to prevent additional deterioration and to minimize the impact of system failure on operations within the facility. The inspection program ensures that facilities and installed equipment are maintained in an energy-efficient condition that adequately supports the present mission and long-range planning requirements associated with the structures, systems, and components. A total of 300,000 square feet of existing facilities were audited for energy consumption.

Currently two utility companies have demand-side management programs available in which NNSA/NSO participates: the Express Efficiency Rebate Program from Pacific Gas and Electric Company and Sierra Pacific Power Company. The rebates from Pacific Gas and Electric Company and Sierra Pacific Power Company offer NNSA/NSO reduced savings on the utility bill when efficient products, such as lighting and programmable thermostats, are installed.

Bechtel Nevada implemented a company procedure to define internal energy controls for new buildings and building alterations. Beginning with the Conceptual Design Phase, and prior to actual construction, new buildings will automatically be evaluated for life cycle cost-effective energy efficient technologies. New building commissioning principles will be used in all new design and construction projects.



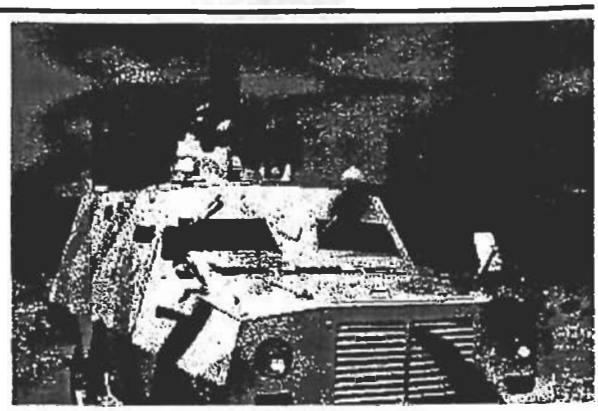
Lockout-tagout electrical safeguard

Recently, Bechtel Nevada evaluated a potential Energy Savings Performance Contract at the NTS. NNSA/NSO is actively responding to newest Presidential request to reduce energy by 10 percent compared to new FY 2004 baseline. NNSA/NSO utilizes energy star computer systems, copiers, and printers and in conjunction with Bechtel Nevada Procurement has set forth requirements to purchase products within the 25 percent energy efficiency barrier from vendors who provide such products. Over 50 percent of the energy-consuming products purchased by Bechtel Nevada meet the Federal Energy Management Program's criteria for energy efficiency. In FY 2000, Building 177 and Building 132 at the NTS were labeled Energy Star Buildings. These were the first two facilities in the DOE complex to receive an Energy Star rating. Bechtel Nevada established an energy-savings process improvement project to sponsor a contest for employees to provide ideas and look for energy and costs savings opportunities. It determined that the best no cost energy-saving efforts will be to increase awareness. This would involve employees and provide incentives to save energy. It would also include sponsoring activities to ensure that thermostat temperatures are moderated; lights are turned off when not in use, and other energy-saving actions. A Bechtel Nevada website was established to link to federal and local sites which promote energy saving ideas. Bechtel Nevada launched an employee incentive energy-savings suggestion program in FY 2006. The results of the suggestions implemented through this program and progress towards a 10 percent energy savings goal are tracked and reported.

Additional significant future savings can be accomplished. Current efforts include obtaining support for the renovation of Mercury Base Camp at the NTS show to achieve significant energy savings. Over 60 billion British Thermal Units per year can be saved through new energy efficient facilities after phase II is complete.

4.2 Security

As a result of the events of September 11, 2001, several programmatic initiatives were implemented to strengthen the safety and security at all facilities in the DOE/NNSA complex. They include: permanent implementation of an increased security posture that



Security personnel on maneuvers at the NTS

corresponds to the third of the five levels of national security conditions; several cumulative increases in defined adversary capabilities as reflected in the revisions to the Design Basis Threat; and mandated implementation of a Security Police Officer-III/Special Response Team program at NNSA/NSO. A formal vulnerability analysis was conducted to evaluate the impact of these changes on the security of NTS facilities, coupled with the transition of the Device Assembly Facility to a full time Category I Special Nuclear Material facility. This analysis will be reflected in the updated *Site Safeguards and Security Plan*. This plan, the required security enhancements and corresponding increases in funding have been coordinated with site Federal Security Staff and approved by the Federal Site Manager. One new requirement under the enhanced security posture is a screening guard station located on the access road to the Device Assembly Facility, just off Mercury Highway, where all vehicles approaching the Device Assembly Facility will be examined prior to their approach to the Device Assembly Facility.

Due to Design Basis Threat-related security initiatives implemented at the NTS over the past year, including essentially doubling the size of the protective force, and increasing their armament, existing facilities are inadequate. The impact of these enhancements is seen in dramatic increases in basic daily requirements such as expanded locker space for protective force personnel, along with increased space for equipment storage and weapons armory capacity. Hiring and training the additional required protective force personnel has placed extreme demands on limited classroom space at the NTS. Implementation of the Security Police Officer-III/Special Response Team program and its extensive training regimen cannot be

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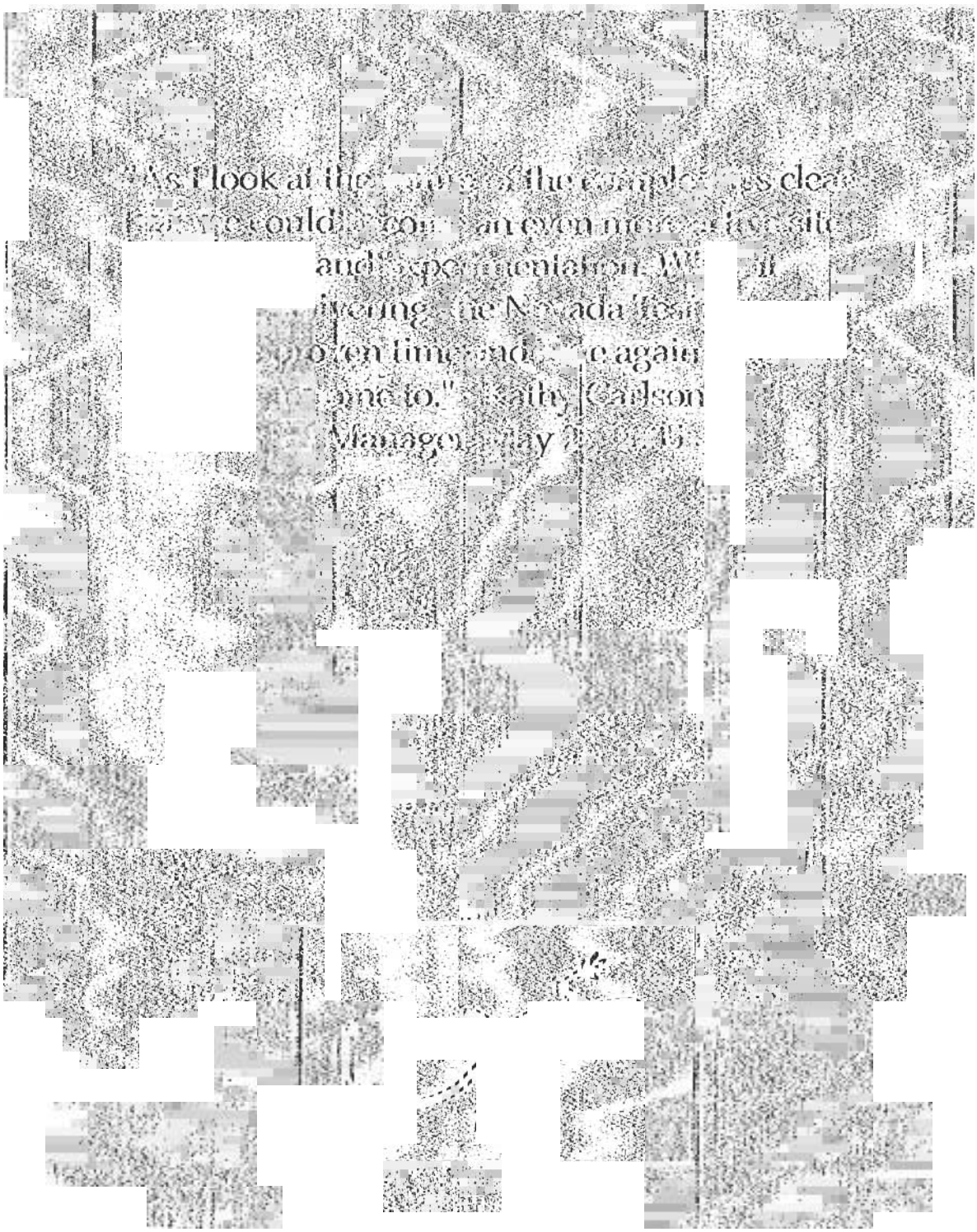
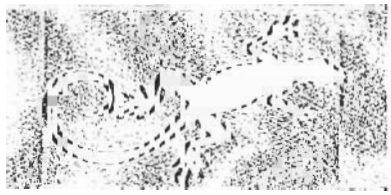
Facilities and Infrastructure Projects/ Activities and Cost Profile





the results captured in the Condition Assessment Information System database. At that time, the Condition Assessment Information System did not have models developed to determine the deferred maintenance values for utility infrastructure, therefore the deferred maintenance was identified through projects developed to correct infrastructure deficiencies identified through Condition Assessment Survey inspections and previously prepared Utility Management Plans. Since neither the Facility Information Management System nor Condition Assessment Information System databases had provisions to capture deferred maintenance against utility infrastructure, original efforts to capture this information was project based and included in the databases as major utility single line entries until adequate infrastructure elements could be defined and established in the databases. That effort was completed this year and several hundred new elements have been defined in Facility Information Management System and Condition Assessment Information System that allow the inclusion for replacement plant value and deferred maintenance for each element.

CP-40 fiber optic cabling project

All infrastructure utility replacement plant value and deferred maintenance associated with developed projects were reapportioned to the individual infrastructure elements in the databases. Site planning activities that define replacement plant value and deferred maintenance evolved from a project-defined to an element-defined approach. The Facility Condition Index is now more accurately defined based on specific facilities and infrastructure elements. With deferred maintenance now defined on a more refined level of detail, a significant shift of deferred maintenance from non-mission dependent to mission critical has occurred as reflected in Attachment F-2 in FY 2005. The shift in mission-critical deferred maintenance was accompanied by the associated shift in mission-critical replacement plant value as shown of Attachment F-2. This shift in mission-critical values raised the Facility Condition Index slightly but NSO sites are still on target to meet Corporate goals in FY 2009 as shown by Attachments F-4 and F-5.

The Site Development Working Group reevaluated NSO's mission-critical facilities and infrastructure from the NTS, North Las Vegas Facility, and the Remote Sensing Laboratory–Nellis resulting in the addition of 60 facilities and associated infrastructure to the mission-critical list, Attachment G. Although the addition of these facilities and infrastructure shifted more deferred maintenance and replacement plant value to mission-critical values, there was little additional impact to the Facility Condition Index.

Projects removed from the *Fiscal Year (FY) 2006 Ten-Year Site Plan (TYCSP)* include projects removed from the Facilities and Infrastructure Recapitalization Program list that did not have associated deferred maintenance and projects that were de-scoped, e.g., Radiological/Nuclear Countermeasures Test and Evaluation Complex. In addition, Readiness in Technical Base and Facilities Line Item "Replace HVAC for CP-1 and CP-9 with Central Chiller Plant System" was deleted.

Projects added to the *FY 2006 TYCSP* are primarily deferred maintenance projects proposed for Facilities and Infrastructure Recapitalization Program funding.

5.3 Facilities and Infrastructure Cost Projection Spreadsheets

Cost projection spreadsheets provide an understanding and overview of the forecasts for NNSA/NSO facilities and infrastructure projects and other activities for FY 2007 - 2016. A general overview and the cost projection spreadsheets (Attachments A-1 through A-6) are included in Appendix A.

Highlight

The Bechtel Nevada Fire and Rescue team has created a fire fighting compressed air foam system backpack that can be mounted on the back of a typical All Terrain Vehicle. The system is used by the NTS Fire and Rescue team to mitigate fire risk and incorporate innovative methods and concepts to protect NTS workers, property, and the environment. Six All Terrain Vehicles, equipped with the wildland fire suppression system, are towed by trailers to get as close to a fire scene as roads allow. Using water, foam, and compressed air to produce 25 gallons of foam per gallon of water (with no external water or power source) the fire fighters can conduct containment activities safely and quickly. Time is essential and these All Terrain Vehicles not only get fire fighters to the fire scene quickly, with the ability to conduct effective fire suppression, but also give fire fighters the ability to stay on the fire line longer. When supplies run low, the All Terrain Vehicle operators return to the fire truck to replenish their materials. The All Terrain Vehicles enable fire fighters to get to and defeat fires in remote areas quickly, minimizing not only the fire's damage but also the physical impact to fire fighters. The All Terrain Vehicle Wildland Fire Suppression System has attracted interest among area fire departments and commercial vendors, some of whom have been trying to develop a similar concept for years.

The excessive amount of rain that fell on the NTS during the winter caused a 67 percent higher-than-average vegetation growth rate. During the summer, the team responded to approximately 31 wildland fires that burned more than 13,000 acres, threatening radiological and cultural areas, communications towers, and power lines. The All Terrain Vehicle became an excellent tool to mitigate the fire risk created by this overgrowth and facilitated aggressively attacking fires when they are small to ensure the site's assets were not impacted by the fires.

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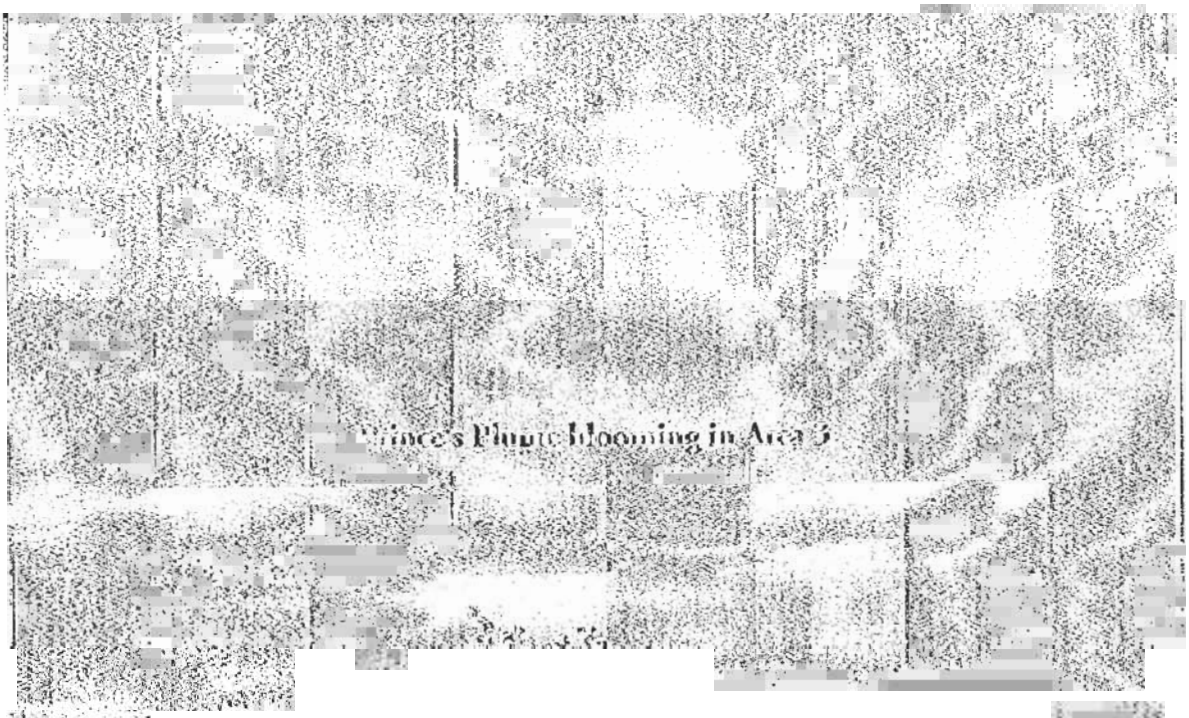
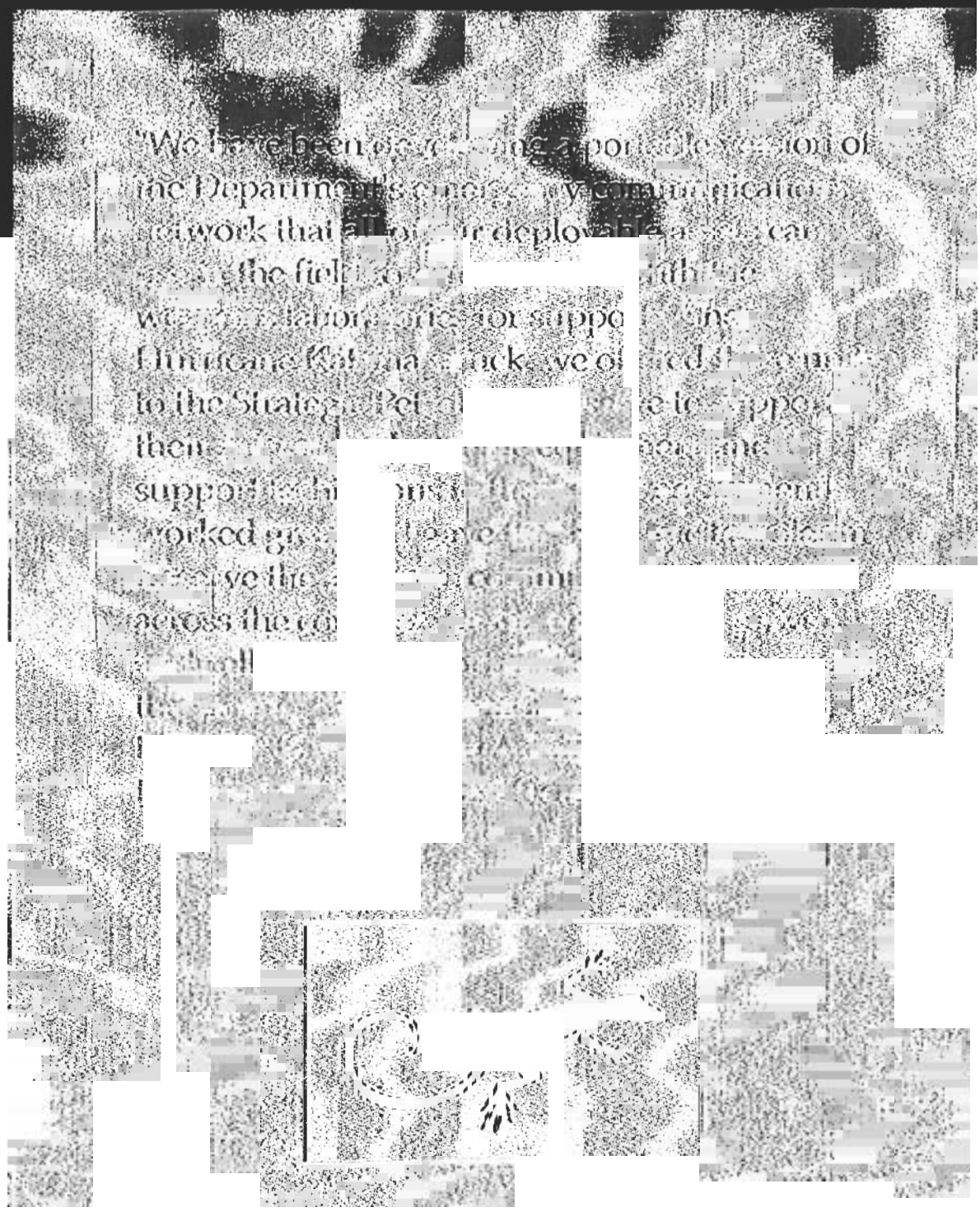


FY 2007 NNSA/NSO
Ten-Year Site Plan



Appendix A: Attachments A, C, and E–H

Facilities and Infrastructure Cost Projection Spreadsheets

The following cost projection spreadsheets provide an understanding and overview of the forecasts for all the NNSA/NSO facilities and infrastructure projects and other activities for FY 2006-2015. A general overview of each spreadsheet attachment follows.

Attachment A-1: Line Item Cost Projection Spreadsheet for Nevada Site Office. Line Item projects listed represent approved Line Items in coordination with the Integrated Construction Program Plan adopted by NA-10. All Line Items shown on this attachment are mission-critical and all but Atlas have deferred maintenance buy-down elements. In addition, all non-NNSA Line Items projects are listed, but are segregated from NNSA Line Items.

Attachment A-2: Proposed Line Item Cost Projection Spreadsheet for Nevada Site Office. This attachment was allowed to show Line Items which are badly needed but are not currently funded. These projects require line item funding but are either utility type projects or housing projects, which are not currently being approved by the Integrated Construction Program Plan.

Attachment A-3: RTBF/Operations of Facilities Cost Projection Spreadsheet for Nevada Site Office. This spreadsheet includes all Expense projects and General Plant projects not funded through the Facilities and Infrastructure Recapitalization Program and specifically includes the supplemental funding and projects for the National Center for Combating Terrorism. Safeguard and Securities projects are also shown on this spreadsheet. This spreadsheet also shows the Operations of Facilities operations and maintenance budgets and breakout by Readiness in Technical Base and Facilities.

Attachment A-4: Facilities and Infrastructure Recapitalization Program Cost Projection Spreadsheet for Nevada Site Office. This spreadsheet shows facility and infrastructure projects on an integrated, complex-wide prioritized list which includes General Plant Project and Expense-type projects. Total funding shown on this spreadsheet is within the Future Years National Security Program funding limitations. All projects with deferred maintenance have been scheduled before FY 2012 since Facilities and Infrastructure Recapitalization Program funding is scheduled to end after FY 2011. Projects scheduled after FY 2011 are assumed to be completed with another funding source but remain on the list to show needed projects during the entire planning period. This spreadsheet also shows Facilities and Infrastructure Recapitalization Program funding for planning, design, and facility disposition.

Attachment A-5: Non-NNSA Facilities and Infrastructure Cost Projection for Nevada Site Office. This spreadsheet shows facilities and infrastructure projects associated with non-NNSA tenant programs and activities. This spreadsheet was completed consistent with fiscal planning guidance provided by applicable tenant programs or activities.

Attachments A-6 (a-d): Security Infrastructure Cost Projection for Nevada Site Office. These spreadsheets crosswalk security infrastructure projects currently accepted for execution and planning for FY 2006 and FY 2007. It identifies security infrastructure projects accepted by Readiness in Technical base and Facilities, approved and proposed Line Item projects, Facilities and Infrastructure Recapitalization Program funding, and other facilities and infrastructure project funding. A list of planned unfunded projects is prioritized using the Security Infrastructure rating Matrix.

Facilities and Infrastructure Recapitalization Program Prioritized List of FY 2005 and FY 2006 Projects

Attachment C: NNSA Summary of Current Condition and Required Future (FY 2016) Condition Nevada Site Office Table. This table summarizes percentage of gross square footage for each building by condition category and provides a total square footage for the facilities upon which the percentages are based.

Attachment E-1: NNSA Excess Facilities Footprint Elimination Plan Nevada Site Office Spreadsheet. This spreadsheet reflects all facilities that are currently excess to DOE and those that will become excess in the FY 2007-2016 period.

Attachment E-2: NNSA New Construction Footprint Added Nevada Site Office Spreadsheet. This spreadsheet reflects the new facilities to be constructed through 2016. The spreadsheet also indicates the type of funding to be used for the new construction.

Attachment E-3: NNSA Grandfathered Footprint Added. This spreadsheet identifies projects that meet the provision that approval for start of construction was provided prior to FY 2003.

Attachment E-4 (a-b): NNSA and Multi-Program Site Footprint Tracking Summary Nevada Site Office Spreadsheet and Graph. This spreadsheet and graph displays actual and projected NNSA's total gross square feet based on Attachments E-1 and E-2. Leased space will all be displayed.

Attachment E-5: NNSA Waiver and Transfer Log. This table manages and documents, at the site level, approved or pending requests for waivers and transfers of banked gross square footage.

Attachment E-6: FY 2006 Leased Space. This spreadsheet outlines the NNSA portfolio of FY 2006 leased space.

Attachment F-1: NNSA FIRP FY 2003 Deferred Maintenance Baseline Nevada Site Office ($000s) Spreadsheet. This spreadsheet is a summary of the Deferred Maintenance Baseline. This spreadsheet reflects maintenance values in terms of mission-critical facilities and infrastructure as well as the total replacement plant value for all facilities and infrastructure.

Attachment F-2: NNSA Total Deferred Maintenance and Projected Deferred Maintenance Reduction Nevada Site Office ($000s) Spreadsheet. This spreadsheet reflects any new growth of deferred maintenance. This spreadsheet presents maintenance values in terms of mission-critical facilities and infrastructure as well as the total replacement plant value for all facilities and infrastructure.

Attachment F-3: NNSA Total Deferrd Maintenance, Mission -Critical Deferred Maintenance, and New Deferred Maintenance Growth Spreadsheet and Graph. This chart illustrates the Site's total NNSA deferred maintenance and the NNSA deferred maintenance for mission critical facilities and infrastructure.

Attachment F-4: NNSA Progress Towards FY 2009 Goal of <5% Deferred Maintenance for Mission-Critical Facilities and Infrastructure (FY 2003-FY 2016) Nevada Site Office Graph. This graph illustrates how NNSA/NSO will aggressively reduce deferred maintenance to within industry standards.

Attachment F-5: NNSA Progress Towards FY 2009 Goal of <10% Deferred Maintenance for Non-Mission Critical Facilities and Infrastructure (FY 2003-FY 2016) Nevada Site Office Graph. This graph illustrates how NNSA/NSO will reduce deferred maintenance for non-mission essential facilities and infrastructure.

Attachment F-6: NNSA Replacement-in-Kind Nevada Site Office Graph. This spreadsheet identifies specific replacement-in-kind projects, and includes only replacement-in-kind needs associated with non-programmatic real property assets.

Attachment F-7: NNSA Identification of Replacement-In-Kind requirements Spreadsheet. This spreadsheet provides the current replacement-in-kind requirements over $500 thousand.

Attachment G: NNSA Mission-Critical Facilities and Infrastructure Nevada Site Office Spreadsheet. This spreadsheet lists NNSA/NSO mission-critical facilities and infrastructure.

Attachment H: Site Security Infrastructure Portfolio for Nevada Site Office. This spreadsheet lists the various facilities that support NTS security.

Attachment A-1

Facilities and Infrastructure Cost Projection Spreadsheet

Line Item Projects for Nevada Test Site

($000s)

Priority (1)	Project Name (2)	Project Number (3)	Deferred Maintenance Identifier(s) (3a)	Mission Critical (Y or N) (4)	Deferred Maintenance Reduction (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total (8)	Prior Years Funding (9)	FY 2005 (10)	FY 2006 (11)	FY 2007 FYNSP (12)	FY 2008 FYNSP (13)	FY 2009 FYNSP (14)	FY 2010 FYNSP (15)	FY 2011 FYNSP (16)	FY 2012 (17)	FY 2013 (18)	FY 2014 (19)	FY 2015 (20)	FY 2016 (21)
1	Electrical Power Systems Safety, Communications and Bus Upgrades	01-D-103.3					OPC	165	165												
		02-D-107					PE&D	2,693	2,693												
							LI	10,733	10,733												
				Y	10,821																
2	NTS Replace Fire Station No. 1 and No. 2, Area 6 and Area 23	04-D-103.1					OPC	-	-												
		06-D-402					PE&D	-	-												
		NTS-00-020					LI	22,364			8,284	14,080									
				Y	4,142	30,860															
3	Bldg. 8-3 Remediation Restoration & Upgrade NLV[1]						OPC	500		500											
		06-D-404					PE&D	-													
							LI	18,000			16,000										
				N																	
							Total	18,000													
						Costs for All NNSA Site Line Items		52,455	13,691	500	24,284	14,080									
1	Radiological/Nuclear Countermeasure Test and Evaluation Complex (Rad/NucCTEC)	XXX-X-XXX		Y		11,500	LI	33,000	2,841	7,578	20,229	2,552									
							Total	33,000	2,841	7,578	20,229	2,552									
						Costs for Program A		33,000	2,841	7,578	20,229	2,552									
1	Yucca Lake Runway	XXX-X-XXX		Y			LI	11,140		11,140											
2	Yucca Lake Hangar Complex	XXX-X-XXX		Y		29,130	LI	22,600		11,390	11,210										
							Total														
						Costs for Program B		33,740		22,530	11,210										

Note:

1. HQ has directed BN to use indirect funds (rather than RTBF) to finance OPC costs for B-3.
   The $2.8 million of indirect funds required for the move are not reflected in the Line Item Other Project Costs.

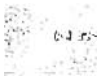
Attachment A-2
Facilities and Infrastructure Cost Projection Spreadsheet
Proposed Line Item Projects for NNSA Nevada Test Site
($000s)

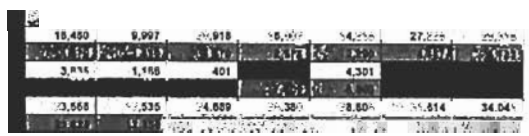
Priority (1)	Project Name (2)	Project Number (3)	Deferred Maintenance Identifier(s) (3a)	Mission Critical (Y or N) (4)	Deferred Maintenance Reduction (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total (8)	FY 2006 (11)	FY 2007 (12)	FY 2008 (13)	FY 2009 (14)	FY 2010 (15)	FY 2011 (16)	FY 2012 (17)	FY 2013 (18)	FY 2014 (19)	FY 2015 (20)	FY 2016 (21)
1	NTS Cafeteria (Area 6)	XXX-XX-XXX					OPC	279			279								
							PE&D	1,454				1,454							
							CI	6,535					6,535						
		NTS-05-032		Y	696														
2	NTS Fire Alarm System Replacement	XXX-XX-XXX					OPC	454					454						
		XXX-XX-XXX					PE&D	2,880						2,880					
							CI	15,120								15,120			
		NTS-00-005		Y															
							Total Costs for Program A	25,722			279	1,454	6,989	2,880		15,120			
1	Mercury Highway	XXX-XX-XXX					OPC	200	200										
		XXX-XX-XXX					PE&D												
							CI	15,800			7,800	8,000							
		NTS-00-003		Y	17,736														
							Total Costs for Program B	16,000	200		7,800	8,000							
							Total Costs for All NNSA Site Line Items	42,722	200		8,079	9,454	6,989	2,880		15,120			

Attachment A-3
NNSA Facilities and Infrastructure Capital Projection Spreadsheet
NTS/Operations of Facilities for Nevada Test Site
($000s)

Priority (1)	Project Name (2)	Project Number (3)	Station Critical (Y or N) (4)	Defense Mission Activities (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total ($)	Prior Years (9)	FY 2005 (10)	FY 2006 (11)	FY 2007 PYDP (12)	FY 2008 PYDP (13)	FY 2009 PYDP (14)	FY 2010 PYDP (15)	FY 2011 PYDP (16)	FY 2012 PYDP (17)	FY 2013 (18)	FY 2014 (19)	FY 2015 (20)	FY 2016 (21)
	U1a - U1a Shaft Re-Use		Y			E	5,000							2,500	2,412					
	U1a - Pavement of Compac Area		Y			E	1,500												1,500	
	U1a - Complex Mining		Y			E	3,400						400							3,000
	U1a - Contaminant Bulkheads		Y			E	2,000													2,000
	JASPER - Water Line Upgrade		Y			E	400			400										
	JASPER - Utility Re-Route		Y			E	100							100	40					
	JASPER - Cathodic Protection		Y			E	40								33					
	JASPER - Building 9110 Temperature control		Y			E	80								200					
	JASPER - Communications upgrade		Y			E	300								80					
	JASPER - Building 9100 Temperature Control upgrade		Y			E	100									20				
	JASPER - Building 9110 insulation and crack sealing		Y			E	150									150				
	JASPER - Electrical Power upgrades		Y			E	60									50				
	JASPER - Laser room separation		Y			E	250							250						
	JASPER - Cart Path		Y			E	600						600							
	JASPER - Water and sewer equipment upgrades		Y			E	200									200				
	JASPER - Building 9200 upgrades		Y			E	350										300		150	
	JASPER - New forklift purchase		Y			E	25										100			
	JASPER - Purchase new FRA		Y			E	80							25						
	JASPER - Purchase gun Hora		Y			E	200							80						
	JASPER - CAK power conditioner		Y			E	100												200	
	JASPER - Purchase gun barrel		Y			E	100												100	
	JASPER - Single side office Trailer		Y			E	45												45	
	JASPER - Fire Station Radio Site		Y			E	250												250	
	JASPER - Fire Station Fuel Tank Replacement		Y			E	600												600	
	NE - Water and Supply water to Water Site		Y			E	60						60							
	NE - Resident Flooring in all of 633/U320		Y			E	2,000									261	239	2,000		
	NE - Build an Equipment Garage at Baur		Y			E	400											200	400	
	NE - PA/Communications System Update		Y			E	150												150	
	NE - Build Hood Control Structures at Baur		Y			E	400												400	
	NE - Replace the Unit System at Baur		Y			E	150												150	
	NE - Shelters in buildings 3320 & 3324		Y			E	100						100							
	NE - Build Bio-Containment at BEEF		Y			E	200									200				
	NE - Replace HVAC Systems at BEEF		Y			E	150													150
	NE - Replace HVAC Systems at BEEF		Y			E	100									100				
	NE - Replace the Hunden Trailer at BEEF		Y			E	200											200		
	NE - Build a Maintenance Shop at BEEF		Y			E	250											250		
	NE - Shelters bring with Intercom at BEEF		Y			E	100							100						
	NE - Replace surface test power cables at BEEF		Y			E	2,500								2,500					
	NE - Provide protected parking for the Hydrogen Tube Trailer at BEEF		Y			E	500							500						
	NE - Install permanent Monitoring and a septic system for BEEF		Y			E	600													600
	APPF - Well water chlorination		Y			E	317													317
	APPF - Well water chlorination		Y			E	75													75
	JNF - NNSA & UNL					E	308,320		18,172	89,491	23,907	23,435	14,782	25,400	23,358	27,051	27,611	28,989	29,399	20,722
	U1a - NNSA & UNL		Y			E	102,286		16,965	13,854	13,831	14,300	13,280	15,801	18,155	19,686	17,965	17,543	16,024	18,539
	JASPER - NNSA & UNL		Y			E	80,230		6,876	4,932	8,091	5,654	6,250	6,980	6,861	7,033	7,230	7,432	7,840	1,854
	NE Facilities - BUCER - NNSA & UNL		Y			E	13,007		1,967	885	994	1,003	1,070	1,095	1,148	1,175	1,206	1,242	1,276	1,312
	NE Facilities - BEEF - NNSA & UNL		Y			E	7,805		-	253	651	855	200	717	752	763	791	813	836	859
	ACV - NNSA		Y			E	25,228		1,825	1,653	1,739	1,788	1,838	1,889	1,842	1,896	2,052	2,109	2,166	2,229
	RSL - NNSA		Y			E	29,500		2,144	2,186	2,218	2,280	2,344	2,409	2,477	2,548	2,617	2,691	2,766	2,843
	TA - NNSA		Y			E	27,000		3,680	1,882	1,299	1,415	1,827	1,878	2,002	2,041	2,038	2,157	2,217	2,279
	LAO - NNSA		Y			E	3,000		3,000	(311)										
	APPF - NNSA & UNL		Y			E	2,963		3,503											
							12,988		3,443	3,778	1,280	345	441	460	481	501	581	626	644	995

Notes:
1. These projects are identified as Congressional Earmarks




18,450
9,997
27,225
1,166
401
4,301
34,049

Attachment A-5
Other Facilities and Infrastructure Cost Projection Spreadsheet
For Nevada Test Site
($000s)

Priority (1)	Project Name (2)	Project Number (3)	Mission Critical (Y or N) (4)	Deferred Maintenance Reduction (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total (8)	Prior Years (9)	FY 2005 (10)	FY 2006 (11)	FY 2007 FYNSP (12)	FY 2008 FYNSP (13)	FY 2009 FYNSP (14)	FY 2010 FYNSP (15)	FY 2011 FYNSP (16)	FY 2012 (17)	FY 2013 (18)	FY 2014 (19)	FY 2015 (20)	FY 2016 (21)
1	NTS Radiographic Equipment Warehouse 6-CP-100	NTS-03-068	N			TBD	1,214													
2	NTS Upgrade SCADA System - Substations 13-16	NTS-03-067	N			TBD	4,675													
3	NTS Construct 3 Water Storage Tanks - Areas 5 and 6	NTS-02-098	N			TBD	4,500													
4	NTS Network Operations Center Consolidation (NOC)	NTS-03-073	N			TBD	4,872													
5	NTS Construct Fire Training Facility	NTS-02-101	N			TBD	4,000													
6	NTS LAN Cabling Upgrades at Area 25	NTS-03-052	N			TBD	4,936													
7	NTS Upgrade SCADA System - Substations 9-12	NTS-02-128	N			TBD	3,600													
8	NTS Rebuild Splice Pit, A-25	NTS-02-105	N	300		TBD	300													
9	NTS Repair Pahute Mesa Rd (Mercury Hwy to Tippipah Hwy)	NTS-03-059	N	500		TBD	500													
10	NTS Repair Road 18-03/Airport Rd (Pahute Mesa Rd to Buckboard Mesa Rd)	NTS-03-060	N	700		TBD	700													
11	NTS Restore Jackass Flats Rd (Mercury By-Pass to 27-01)	NTS-00-068	N	3,500		TBD	3,500													
12	NTS Reconstruct Pahute Mesa Rd (End of Pavement to Buckboard Mesa Rd)	NTS-03-063	N	3,000		TBD	3,000													
13	NTS Maintain Buckboard Mesa Rd (Road 18-03 to Pahute Mesa Rd N)	NTS-03-064	N	280		TBD	280													
14	NTS Renovate Water Distribution System, A-25	NTS-00-014	N	3,060		TBD	3,060													
15	NTS Resurface Pahute Mesa Airstrip	NTS-96-061	N	1,900		TBD	1,900													
16	NTS Replace Copper Cabling RLCM to Gate 510, Area 25	NTS-02-107	N	700		TBD	700													
17	NTS Replace Copper Cabling from Area 12 to Pahute Airport	NTS-02-112	N	2,201		TBD	2,200													
18	NTS Repair Stockade Wash Rd (Rainier Mesa Rd. - Holmes Rd.)	NTS-03-065	N	386		TBD	386													
19	NTS Reconstruct Stockade Wash Rd (Holmes Rd - Pahute Mesa Rd.)	NTS-03-066	N	7,900		TBD	7,900													
20	NTS Renovate Water Storage Tank North (Area 12)	NTS-04-021	N	600		TBD	600													
21	RSL Upgrade Onsite Landscaping	RSL-99-008	N			TBD														
22	RSL Covered Parking Structure (Andrews)	RSL-02-006	N			TBD	400										400			
						TOTAL														
	Program A (facilities & infrastructure reported under this category)						49,823													
1	Yucca Lake Power System Feeder		Y			GPP			1,752											
2	Yucca Lake Airfield Lighting		Y			GPP			1,656											
						TOTAL														
	Program B (facilities & infrastructure reported under this category)								3,408											

Attachment A-6(a) - FY 2006 - FY 2008
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Currently Funded Security Infrastructure Projects for Nevada Test Site ($000s)

Priority (1)	Project Name (2)	Site Specific Project Number (3)	Mission Critical (Y or N) (4)	Estimated Total Project Cost (8)	Planned Funding Source				
					Line Item A-1,2	RTBF A-3	FIRP A-4	Other A-5	DBT Related? Y or N
	FY 2006 Projects								
1	WSI Live Fire Shoot House	NTS-01-130	Y	1,568				X	Y
2	WSI Construct Observation/Training Tower	NTS-03-028	Y	800				X	Y
3	WSI Training Room (Triple Wide Trailer)	NTS-05-040	Y	545				X	Y
4	WSI Renovate Building 23-1002	NTS-05-049	Y	227				X	Y
5	WSI Construct Live Fire Obstacle Course	NTS-03-081	Y	500				X	Y
6	WSI Renovation of CP-41/43 (or CP-50) Interiors	NTS-XX-XXX	Y	500				X	Y
7	OUO Exemption 2	NTS-XX-XXX	Y	500				X	Y
FY 2006 Projects Total				4,640					
	FY 2007 Projects								
1	WSI DAF-CT-0858 GDS Equipment Installation	NTS-XX-XXX	Y	300				X	Y
2	WSI DAF Security Intercom Upgrade	NTS-XX-XXX	Y	200				X	Y
3	WSI Construct DAF Access Security Station	NTS-05-027	Y	2,500				X	Y
4	Replace DAF PIDAS Sensor System	NTS-XX-XXX	Y	1,500				X	Y
FY 2007 Projects Total				4,500					
	FY 2008 Projects								
1	WSI DAF Improvement Projects, Phase 1	NTS-XX-XXX	Y	400				X	Y
2	WSI DAF Porta-Coaxial (Radiax) Cable	NTS-XX-XXX	Y	300				X	Y
3	WSI Construct Vehicle Barrier System (DAF)	NTS-05-039	Y	4,900				X	Y
FY 2008 Projects Total				5,600					

Attachment A-6(b) - FY 2007 and FY 2008 Unfunded
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Security Infrastructure Projects for Nevada Test Site
($000s)

Priority (1)	Prioritization Score (2a)	Project Name (2)	Site Specific Project Number (3)	Mission Critical (Y or N) (4)	Total (8)	Proposed for either FY 2007 or FY 2008 funding	DBT Related? Y or N
1	50	WSI DAF Improvement Projects, Phase 2	NTS-XX-XXX	Y	3,000	FY 2007	Y
2	50	NSO/AMSS Renovate Building 114	NTS-XX-XXX	Y	800	FY 2007	Y
3	50	DAF Passive Aircraft Denial	NTS-05-042	Y	4000	FY 2007	Y
4	50	WSI DAF-CT-0821 AC Removal from MUX Boxes	NTS-XX-XXX	Y	600	FY 2007	Y
5	40	WSI Training Academy Annex	NTS-03-020	Y	1,650	FY 2007	N
6	30	Replace Las Vegas/NTS Unity Alarm System	NTS-XX-XXX	Y	800	FY 2007	Y
7	30	WSI Replace Operations Facility	NTS-05-029	Y	4,500	FY 2008	Y
TOTAL					15,350		

Attachment A-6(b) - FY 2007 and FY 2008 Unfunded
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
Security Infrastructure Projects for Nevada Test Site
($000s)

Priority (1)	Prioritization Score (2a)	Project Name (2)	Site Specific Project Number (3)	Mission Critical (Y or N) (4)	Total (8)	Proposed for either FY 2007 or FY 2008 funding	DBT Related? Y or N
1	50	WSI DAF Improvement Projects, Phase 2	NTS-XX-XXX	Y	3,000	FY 2007	Y
2	50	NSO/AMSS Renovate Building 114	NTS-XX-XXX	Y	800	FY 2007	Y
3	50	DAF Passive Aircraft Denial	NTS-05-042	Y	4000	FY 2007	Y
4	50	WSI DAF-CT-0821 AC Removal from MUX Boxes	NTS-XX-XXX	Y	600	FY 2007	Y
5	40	WSI Training Academy Annex	NTS-03-020	Y	1,650	FY 2007	N
6	30	Replace Las Vegas/NTS Unity Alarm System	NTS-XX-XXX	Y	800	FY 2007	Y
7	30	WSI Replace Operations Facility	NTS-05-029	Y	4,500	FY 2008	Y
TOTAL					11,350		

(a)
Poor
(c)

Facility Condition
Poor or Fair Condition

(3)
Inadequate

FY 2005 YSP	FY 2006	FY 2007
		Other
5.0%	0.0%	0.0%

Attachment E-1
Excess Facilities Footprint Elimination Plan

Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Priority Score (FIRP Only) (4)	Priority Rank (FIRP Only) (5)	Gross Square Footage (gsf) (6)	Year Ready To Start D&D (7)	Planned Demolition Year (8)	TEC to Demolition ($000s) (9)	FY2003 (baseline) Deferred Maintenance Reduction (for FIRP Demolition Only) ($000s) (10)	Yearly S&M Costs ($000s) (11)	Candidate for Transfer (12)	Contaminated (Yes or No) (13)	Notes (14)
FIRP	12-300	DIAGNOSTIC B-TUNNEL		N/A	2,520	N/A	2002	N/A	-	N/A		NO	
FIRP	12-355	SIGNAL TIMER STATION		N/A	168	N/A	2002	N/A	-	N/A		NO	
FIRP	12-44	STORAGE		N/A	672	N/A	2002	N/A	-	N/A		NO	
FIRP	12-8	SHEET MTL / CARPENTERS		N/A	6,440	N/A	2002	N/A	-	N/A		NO	
FIRP	12-9	LABOR /OPERATORS OFFICE		N/A	800	N/A	2002	N/A	-	N/A		NO	
FIRP	12-998881	POWER/COMM LINE SHOP		N/A	4,032	N/A	2002	N/A	-	N/A		NO	
FIRP	15-202621	MECHANIC SHOP		N/A	456	N/A	2002	N/A	-	N/A		NO	
FIRP	22-1113	ARMY WELL SOFTENER STATION		N/A	523	N/A	2002	N/A	-	N/A		NO	
FIRP	23-101	PROPERTY MANAGEMENT		N/A	6,861	N/A	2002	N/A	-	N/A		NO	
FIRP	23-102	SAFETY & HEALTH		N/A	8,330	N/A	2002	N/A	-	N/A		NO	
FIRP	23-110	CONTACT ADMIN ENG		N/A	8,470	N/A	2002	N/A	-	N/A		NO	
FIRP	23-501	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-502	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-503	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-504	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-505	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-506	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-507	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-508	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-513	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-514	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-515	DORMITORY		N/A	3,300	N/A	2002	N/A	-	N/A		NO	
FIRP	23-516	SWIMMING POOL BLDG.		N/A	1,132	N/A	2002	N/A	-	N/A		NO	
FIRP	23-W12	WAREHOUSE		N/A	4,030	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3107	SERVICE STATION		N/A	180	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3109	DISTRIBUTION BLDG. TCA		N/A	700	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3115	COMPRESSOR BLDG.		N/A	420	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3115A	CONTROL BLDG.		N/A	192	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3116	TEST CELL A PUMP HOUSE		N/A	912	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3117	PRESSURE STATION		N/A	400	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3125	USGS SHOP R-MAD COMPOUND		N/A	1,000	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3140	R-MAD POINT TEST & STR		N/A	3,356	N/A	2002	N/A	-	N/A		NO	
FIRP	25-3230A	RESTROOM		N/A	270	N/A	2002	N/A	-	N/A		NO	
FIRP	25-408536	J-12 MIDWAY BOOSTER		N/A	192	N/A	2002	N/A	-	N/A		NO	
FIRP	25-4839	POWER LINEMEN SHOP		N/A	555	N/A	2002	N/A	-	N/A		NO	
FIRP	06-910853	PAINT STORAGE		N/A	800	N/A	2003	N/A	0	N/A		NO	
FIRP	06-CP-2	RADSAFE		N/A	10,927	N/A	2003	N/A	0	N/A		NO	
FIRP	06-202683	TOOL STORAGE, BIGHOLE		N/A	1,344	N/A	2003	N/A	0	N/A		NO	
FIRP	06-2203A	DYNA-DRILL REPAIR PARTS		N/A	1,107	N/A	2003	N/A	0	N/A		NO	
FIRP	06-606	DYNA-DRILL REPAIR SHOP		N/A	1,092	N/A	2003	N/A	0	N/A		NO	
FIRP	06-CP-400	CAMERA STATION		N/A	1,800	N/A	2003	N/A	8	N/A		NO	
FIRP	06-CP-90	CONTROL POINT 90		N/A	5,494	N/A	2003	N/A	0	N/A		NO	
FIRP	12-10	DRY STORAGE (C)		N/A	4,800	N/A	2003	N/A	0	N/A	Yes	NO	
FIRP	12-11	AMBULANCE GARAGE		N/A	810	N/A	2003	N/A	0	N/A	Yes	NO	
FIRP	12-12	MEDICAL AID STATION		N/A	875	N/A	2003	N/A	2	N/A	Yes	NO	
FIRP	12-18	DRY STORAGE (C)		N/A	1,000	N/A	2003	N/A	0	N/A	Yes	NO	
FIRP	12-201802	FITTER SHOP (T)		N/A	4,840	N/A	2003	N/A	0	N/A		NO	
FIRP	12-201804	MECHANIC SHOP (E)		N/A	1,220	N/A	2003	N/A	128	N/A		NO	

(Yes or No)
(5000e)
(Yes or No)
N/A
NO

Attachment E-1
Excess Facilities Footprint Elimination Plan

Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Priority Score (FIRP Only) (4)	Priority Rank (FIRP Only) (5)	Gross Square Footage (gsf) (6)	Year Ready To Start D&D (7)	Planned Demolition Year (8)	TEC to Demolition ($000s) (9)	FY2003 (baseline) Deferred Maintenance Reduction (for FIRP Demolition Only) ($000s) (10)	Yearly S&M Costs ($000s) (11)	Candidate for Transfer (12)	Contaminated (Yes or No) (13)	Notes (14)
FIRP	11-1A	TWEEZER R&D		N/A	800	2004	2004	N/A	0	N/A		NO	
FIRP	11-2	TWEEZER EQUIP BLDG		N/A	1,488	2004	2004	N/A	0	N/A		NO	
FIRP	11-4	TOOL STORAGE		N/A	540	2004	2004	N/A	0	N/A		NO	
FIRP	23-106	DORMITORY (FY 2003 Funds)		N/A	3,693	2004	2004	N/A	172	N/A		NO	
FIRP	23-107	DORMITORY (FY 2003 Funds)		N/A	3,693	2004	2004	N/A	247	N/A		NO	
FIRP	23-300A	WALK-IN FREEZER		N/A	600	2004	2004	N/A	60	N/A		NO	
FIRP	23-A	DORMITORY (FY 2003 Funds)		N/A	3,429	2004	2004	N/A	190	N/A		NO	
FIRP	23-Q-21	ROCK SHOP		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-22	GEOLOGY SHOP		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-23	STORAGE QUONSET		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-26	RECREATION		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-27	Q-27 STAGING AREA		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-28	QUONSET HUT		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-29	ADMINISTRATION		N/A	960	2004	2004	N/A	102	N/A		NO	
FIRP	23-Q-30	ADMINISTRATION		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-31	QUONSET 31 (FY 2003 Funds)		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-32	QUONSET 32 (FY 2003 Funds)		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-33	HEALTH CLUB (FY 2003 Funds)		N/A	1,927	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-34	LAB		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-35	CHRISTIAN FELLOWSHIP		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-Q-36	STORAGE (FY 2003 Funds)		N/A	940	2004	2004	N/A	0	N/A		NO	
FIRP	23-S	DORMITORY (FY 2003 Funds)		N/A	3,300	2004	2004	N/A	227	N/A		NO	
FIRP	23-T	DORMITORY (FY 2003 Funds)		N/A	3,300	2004	2004	N/A	196	N/A		NO	
FIRP	23-U	DORMITORY (FY 2003 Funds)		N/A	3,300	2004	2004	N/A	204	N/A		NO	
FIRP	24-B-01	ADMINISTRATION		N/A	64,085	2004	2004	N/A	1,628	N/A		NO	
FIRP	24-B-02	EXECUTIVE		N/A	14,288	2004	2004	N/A	617	N/A		NO	
FIRP	25-3106	WAREHOUSE		N/A	2,036	2004	2004	N/A	2	N/A		NO	
FIRP	25-3133	MOTOR DRIVE BLDG		N/A	90	2004	2004	N/A	0	N/A		NO	
FIRP	25-3152	RAD-SAFE FACILITY		N/A	2,000	2004	2004	N/A	27	N/A		NO	
FIRP	25-4001	MINERS CHANGE HOUSE		N/A	2,040	2004	2004	N/A	0	N/A		NO	
FIRP	25-408541	CONTROL HOUSE J-11		N/A	286	2004	2004	N/A	0	N/A		NO	
FIRP	25-4224	STORAGE FACILITY		N/A	432	2004	2004	N/A	40	N/A		NO	
FIRP	25-4224A	PAINT SHOP		N/A	630	2004	2004	N/A	55	N/A		NO	
FIRP	25-4517	ECO SYSTEM ENVIRO STR		N/A	1,344	2004	2004	N/A	0	N/A		NO	
FIRP	25-202106	STACK MONITORING SYS		N/A	120	2004	2004	N/A	2	N/A		NO	
FIRP	25-202107	STACK MONITORING SYS		N/A	120	2004	2004	N/A	0	N/A		NO	
FIRP	25-3102	POWER HOUSE		N/A	1,428	2004	2004	N/A	15	N/A		NO	
FIRP	25-3119	ETS-1 MACHINE SHOP		N/A	3,200	2004	2004	N/A	0	N/A		NO	
FIRP	25-3205	AIR INTAKE BLDG.		N/A	612	2004	2004	N/A	0	N/A		NO	
FIRP	25-3214	BLDG. CONC. R &D 13X17		N/A	272	2004	2004	N/A	0	N/A		NO	
FIRP	25-408539	J-13 HI-LINE BOOSTER		N/A	441	2004	2004	N/A	0	N/A		NO	
FIRP	25-408560	CONTROL HOUSE J-11		N/A	210	2004	2004	N/A	0	N/A		NO	
FIRP	26-2208	RBIFF SUPPORT		N/A	120	2004	2004	N/A	0	N/A		NO	
FIRP	27-5120	RADIOGRAPHIC FACILITY		N/A	1,560	2004	2004	N/A	0	N/A		NO	
FIRP	27-5130	A-27 COMMUNICATIONS SHOP		N/A	1,920	2004	2004	N/A	0	N/A		NO	
FIRP	27-5140	STORAGE/OFFICE		N/A	2,448	2004	2004	N/A	65	N/A		NO	
FIRP	27-5170	MAINT STORAGE FACILITY		N/A	1,008	2004	2004	N/A	0	N/A		NO	
FIRP	27-5210	AREA 27 FEEDING FACILITY		N/A	2,387	2004	2004	N/A	8	N/A		NO	
FIRP	27-5322	MECHANICAL BUILDING		N/A	36	2004	2004	N/A	0	N/A		NO	

Attachment E-1
Excess Facilities Footprint Elimination Plan

Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Priority Score (FIRP Only) (4)	Priority Rank (FIRP Only) (5)	Gross Square Footage (gsf) (6)	Year Ready To Start D&D (7)	Planned Demolition Year (8)	TEC to Demolition ($000s) (9)	FY2003 (baseline) Deferred Maintenance Reduction (for FIRP Demolition Only) ($000s) (10)	Yearly S&M Costs ($000s) (11)	Candidate for Transfer (12)	Contaminated (Yes or No) (13)	Notes (14)
FIRP	27-910752	LABORERS SHOP		N/A	192	2004	2004	N/A	0	N/A		NO	
FIRP	27-910753	CARPENTER SHOP		N/A	450	2004	2004	N/A	0	N/A		NO	
FIRP	27-T00027	ELECTRIC SHOP		N/A	240	2004	2004	N/A	0	N/A		NO	
FIRP	06-350	CEMENT STORAGE BUILDING		N/A	4,950	2005	2005	N/A	349	N/A		NO	
FIRP	06-CP-311	MONASTERY		N/A	5,973	2005	2005	N/A	316	N/A		NO	
FIRP	12-23	TUNNEL SUPPORT BUILDING		N/A	4,800	2005	2005	N/A	199	N/A		NO	
FIRP	12-26	SERVICE STATION		N/A	48	2005	2005	N/A	0	N/A		NO	
FIRP	12-27	ADMINISTRATION BUILDING		N/A	4,800	2005	2005	N/A	12	N/A		NO	
FIRP	12-998830	ICE HOUSE		N/A	325	2005	2005	N/A	34	N/A		NO	
FIRP	23-790	CETO/BECAMP LAB		N/A	8,135	2005	2005	N/A	364	N/A		NO	
FIRP	25-3110	R-MAD FACILITY		N/A	20,000	2005	2005	N/A	0	N/A		NO	
FIRP	25-3130	SERVICE BUILDING		N/A	1,044	2005	2005	N/A	0	N/A		NO	
FIRP	25-3229	TC-C OFFICE BUILDING		N/A	5,494	2005	2005	N/A	0	N/A		NO	
FIRP	25-408282	CAMERA STATION		N/A	320	2005	2005	N/A	0	N/A		NO	
FIRP	25-4215	HYD. RESEARCH		N/A	16,779	2005	2005	N/A	498	N/A		NO	
FIRP	25-4226	METAL BUILDING		N/A	1,520	2005	2005	N/A	0	N/A		NO	
FIRP	25-4226A	TOOL STORAGE		N/A	960	2005	2005	N/A	0	N/A		NO	
FIRP	25-4622	ENVIRO SUPPORT FACILITY LMF		N/A	2,600	2005	2005	N/A	186	N/A		NO	
FIRP	23-W1	WAREHOUSE	60	1	3,881	2007	2006	126	100	0		NO	
FIRP	23-W2	WAREHOUSE	60	2	4,159	2007	2006	86	147	0		NO	
FIRP	23-W3	WAREHOUSE	60	3	3,889	2007	2006	79	90	0		NO	
FIRP	23-W3A	WAREHOUSE	60	4	4,975	2006	2006	120	98	0		NO	
FIRP	23-W4	WAREHOUSE	60	5	3,940	2006	2006	91	2	0		NO	
FIRP	23-W4A	WAREHOUSE	60	6	4,975	2007	2006	68	183	0		NO	
FIRP	23-W5	WAREHOUSE	60	7	3,880	2007	2006	84	167	0		NO	
FIRP	23-W5A	WAREHOUSE	60	8	4,975	2007	2006	96	130	0		NO	
FIRP	23-W6	WAREHOUSE	60	9	3,880	2007	2006	126	116	0		NO	
FIRP	06-356	STORAGE	60	10	1,108	2007	2006	49	154	0		NO	
FIRP	26-2101	PG FREE CLINIC	60	11	6,080	2005	2007	41	147	N/A		NO	
FIRP	26-2107	PORT GASTON CAFÉ	60	12	2,400	2006	2007	25	96	N/A		NO	
FIRP	26-992041	HOT & CRITICAL	60	13	3,700	2005	2007	26	90	N/A		NO	
FIRP	27-5430	SUPER KUKLA CONT.	60	14	2,080	2004	2007	22	69	N/A		NO	
FIRP	06-CP-70	FIRE STATION NO. 1	60	15	5,022	2009	2009	N/A	4,301	N/A		NO	

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Attachment E-2
New Construction Footprint Added

Funding Source (1)	Project Number (2)	Facility Name (3)	Funding Type (LI, GPP, IGPP) (4)	Project Area (GSF) (5)	Year of Beneficial Occupancy (6)	Notes (7)
FIRP	F&I-03-422	NTS Buildings for Fire Station 1	GPP	3,520	2004	Temporary Facilities
FIRP	F&I-03-422	NTS Buildings for Fire Station 2	GPP	2,240	2004	Temporary Facilities
Programmatic	NTS-02-078	Air Building Replacement U1a	E	7,200	2004	Completed in FY 2003
Programmatic	XXX-XX-XXX	Hoist Building for U1h Shaft	E	1,274	2004	Completed in FY 2004
RTBF	XXX-XX-XXX	NTS-NCCT Student Training Facilities - Area 23	GPP	10,000	2004	Completed in FY 2004
WFO/DHS	XXX-XX-XXX	CTOS Training Office - Area 19	GPP	1,680	2004	Department of Homeland Security
WFO/DHS	XXX-XX-XXX	Common Infrastructure Facilities	LI	16,000	2005	Department of Homeland Security
Programmatic	XXX-XX-XXX	Trailer B101619 in Area 1	E	2,940	2005	Completed in FY 2005
Programmatic	XXX-XX-XXX	Trailer B101620 in Area 6	E	1,656	2005	Completed in FY 2005
WFO/DHS	XXX-XX-XXX	High Speed Road and Environmental Test Facility	LI	13,073	2006	Department of Homeland Security
RTBF	NV-DM-482	SCADA System Building Addition	GPP	1,440	2006	Expansion of Building 23-1010
WFO/DHS	XXX-XX-XXX	Training Facility and Airport/Inspections Facility	LI	19,393	2007	Department of Homeland Security
OGA/DOD	N/A	Yucca Lake Hanger Complex	LI	29,130	2007	Department of Defense
RTBF	NTS-00-020	Fire Station 2 - Area 23	LI	18,500	2008	N/A
RTBF	NTS-00-011	Fire Station 1 - Area 6	LI	12,460	2008	Existing Facility Will Be Demolished
FIRP	NTS-03-068	NTS Radiographic Equipment Warehouse	GPP	10,000	2009	N/A

Attachment E-3
GRANDFATHERED Footprint Added
NNSA/NSO Nevada Test Site

Funding Source (1)	Project Number (2)	Facility Name (3)	Funding Type (LI, GPP, IGPP) (4)	Project Area (GSF) (5)	Year of Beneficial Occupancy (6)	Notes (7)
RTBF	01-D-107	Atlas Pulsed Power Facility	LI	22,407	2003	
RTBF	XXX-X-XXX	Atlas Site	LI	875	2003	

Attachment E-4(a)
FOOTPRINT TRACKING SUMMARY SPREADSHEET
NNSA Nevada Test Site Footprint Tracking Summary - NNSA

Fiscal Year (1)	Beginning Site Footprint (gsf) (2)	Excess Facilities Footprint Elimination (gsf) (3)	New Construction/ Footprint Added (gsf) (4)	Site Footprint Reduction by FY (gsf) (5)	Footprint "Banked" (gsf) (6)	Waiver/Transfer (gsf) (7)	"Grandfathered" Footprint Added (gsf) (8)	Cumulative "Grandfathered" Footprint Added (gsf) (8a)	NNSA Site Total Footprint (gsf) (9)	NNSA Leased Space (10)
[redacted]	3,435,035	-185,224	0	3,249,811	-146,749		0	0	3,249,811	
[redacted]	3,249,811	-109,250	0	3,140,561	-282,482		0	0	3,140,561	
[redacted]	3,140,561	-147,977	24,234	3,016,818	-416,225	200,000	23,282	23,282	3,040,100	
[redacted]	3,016,818	-77,748	4,596	2,943,666	-489,377		0	23,282	2,966,948	
[redacted]	2,943,666	-39,662	1,440	2,905,444	-527,599		0	23,282	2,928,726	362,615
[redacted]	2,905,444	-14,260	0	2,891,184	-541,859		0	23,282	2,914,466	362,615
[redacted]	2,891,184	0	30,960	2,922,144	-510,899		0	23,282	2,945,426	362,615
[redacted]	2,922,144	-5,022	10,000	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236
[redacted]	2,927,122		0	2,927,122	-505,921		0	23,282	2,950,404	249,236

Note: Column 3 reflects actual demolition values for FY 2002 and FY 2003. Column 6 reflects banked values per Scott's letters for FY 2002 (-146,749) and FY 2003 (-145,733).

ATTACHMENT E-4(a)
NNSA Nevada Test Site Space Tracking Summary - NNSA

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2008	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
NNSA Leased Space (10)					362,615	362,615	362,615	249,236	249,236	249,236	249,236	249,236	249,236	249,236	249,236
Cumulative "Grandfathered" Footprint Added (gsf) (8a)	0	0	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282
Beginning Site Footprint (gsf) (2)	3,435,035	3,248,811	3,140,561	3,016,818	2,943,656	2,905,444	2,891,184	2,922,144	2,927,122	2,927,122	2,927,122	2,927,122	2,927,122	2,927,122	2,927,122

Attachment E-4 (b)
FOOTPRINT SUMMARY SPREADSHEET
NNSA Nevada Test Site Footprint Tracking Summary - SITE WIDE (Multi-Program)

Fiscal Year (1)	Beginning Site Footprint (gsf) (2)	Excess Facilities Footprint Elimination (gsf) (3)	New Construction Footprint Added (gsf) (4)	Site Footprint Reduction by FY (5)	Footprint "Banked" (gsf) (6)	Waiver/Transfer (gsf) (7)	"Grandfathered" Footprint Added (gsf) (8)	Cumulative Grandfathered Footprint Added (gsf) (8a)	Site Total Footprint (Multi-Program) (gsf) (9)	Leased Space (10)
[redacted]	3,435,035	-185,224	0	3,249,811	-185,224		0	0	3,249,811	
[redacted]	3,249,811	-109,250	0	3,140,561	-109,250		0	0	3,140,561	
[redacted]	3,140,561	-147,977	25,814	3,018,498	-122,063	200,000	23,282	23,282	3,041,780	
[redacted]	3,018,498	-77,748	20,596	2,961,346	-57,152		0	23,282	2,984,628	
[redacted]	2,961,346	-39,662	14,513	2,936,197	-25,149		0	23,282	2,959,479	362,615
[redacted]	2,936,197	-14,260	48,523	2,970,460	34,263		0	23,282	2,993,742	362,615
[redacted]	2,970,460	0	30,960	3,001,420	30,960		0	23,282	3,024,702	362,615
[redacted]	3,001,420	-5,022	10,000	3,006,398	4,978		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236
[redacted]	3,006,398	0	0	3,006,398	0		0	23,282	3,029,680	249,236

Note: Column 3 reflects actual demolition values for FY 2002 and FY 2003. Column 6 reflects banked values per Scott's letters for FY 2002 (-146,749) and FY 2003 (-145,733).

ATTACHMENT E-4(b)
NNSA Nevada Test Site Wide Footprint Tracking Summary - SITE WIDE

	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY2014	FY2015	FY 2016
☐Leased Space (10)					362,615	362,615	362,615	249,236	249,236	249,236	249,236	249,236	249,236	249,236	249,236
■Cumulative Grandfathered Footprint Added (gsf) (8a)	0	0	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282	23,282
☐Beginning Site Footprint (gsf) (2)	3,435,035	3,249,811	3,140,561	3,018,498	2,961,346	2,936,197	2,970,460	3,001,420	3,006,398	3,006,398	3,006,398	3,006,398	3,006,398	3,006,398	3,006,398

Comments

Attachment E-6
FY 2006 Leased Space Profile
NNSA Nevada Test Site

#	FIMS # (1)	Property Name (2)	Program Occupant (3)	Program (4)	Mission Dependency (5)	# Occupants[1] (6)	Gross Square Feet[2] (7)	Rental Rate per Rentable s.f. per year[3] (8)	Annual Cost[4] (9)	Lease Type (10)	Lease Term - yrs. (11)	Exp. Month / Year (12)	Renewal Options (13)
1	33551	Cheyenne Facilities Buildings 4 & 6	BNC	NNSA	MD	520	113,379	$17	$1,933,210.32		5 Years	March / 2013	(1) 5-year option available
2	33551	Cheyenne Facilities Building 3 Only	Stoller-Navarro	NNSA	MD	150	113,379	$7	$738,045.60		5 Years	March / 2013	(1) 5-year option available
3	182	East Gate Industrial LAO	BNC	NNSA	MC	84	50,492	$20	$1,002,108.00		5 Years	March / 2008	(2) 5-year options available
4	30064	Livermore, CA	NVH	NNSA	MD	90	35,687	$0			12 Years	January / 2011	
5	EAC	400 Shadow Lane, Suite 200 Las Vegas	BNC	NNSA	MD	1	1,778	$25	$44,843.00		10 Years	October / 2010	Final option - will not renew.
6	00001792A	Building 490-1794 Andrews Air Force Base Hanger	BNC	NNSA	MC	6	4,939	$0		Military/ DOE Permit	25 Years	April / 2005	In negotiations for renewal at this time
7	L026020	T2230 RSL-N Trailer	BNC	NNSA	MD	10	1,440	$42	$60,420.00		3 Years	June / 2006	Will not renew - the trailers will be returned at the end of the lease
8	L026020	T2231 RSL-N Trailer	BNC	NNSA	MD	10	1,440	$42	$60,420.00		3 Years	June / 2006	Will not renew - the trailers will be returned at the end of the lease
9	L026020	T2232 RSL-N Trailer	BNC	NNSA	MD	10	1,440	$42	$60,420.00		3 Years	June / 2006	Will not renew - the trailers will be returned at the end of the lease
10	L026020	Botello Main Building 820 Frances Botello Road Santa Barbara	BNC	NNSA	MC	10	2,260	$57	$128,460.00		5 Years	July / 2008	5-year option available
11	L026020	Ekwill 2 Buildings Santa Barbara	BNC	NNSA	MC	35	36,381	$32	$1,171,696.60		5 Years	February / 2007	5-year option available

Notes:

1. Number of occupants match those listed in FIMS which differs from the number listed in lease documents
2. Square footage matches the gross square feet listed in FIMS rather than the amount of square feet charged in lease documents
3. Rental Rate based on cost divided by gross square footage in FIMS rather than amount of square feet charged in lease agreements
4. Annual cost does not include costs for utilities or taxes

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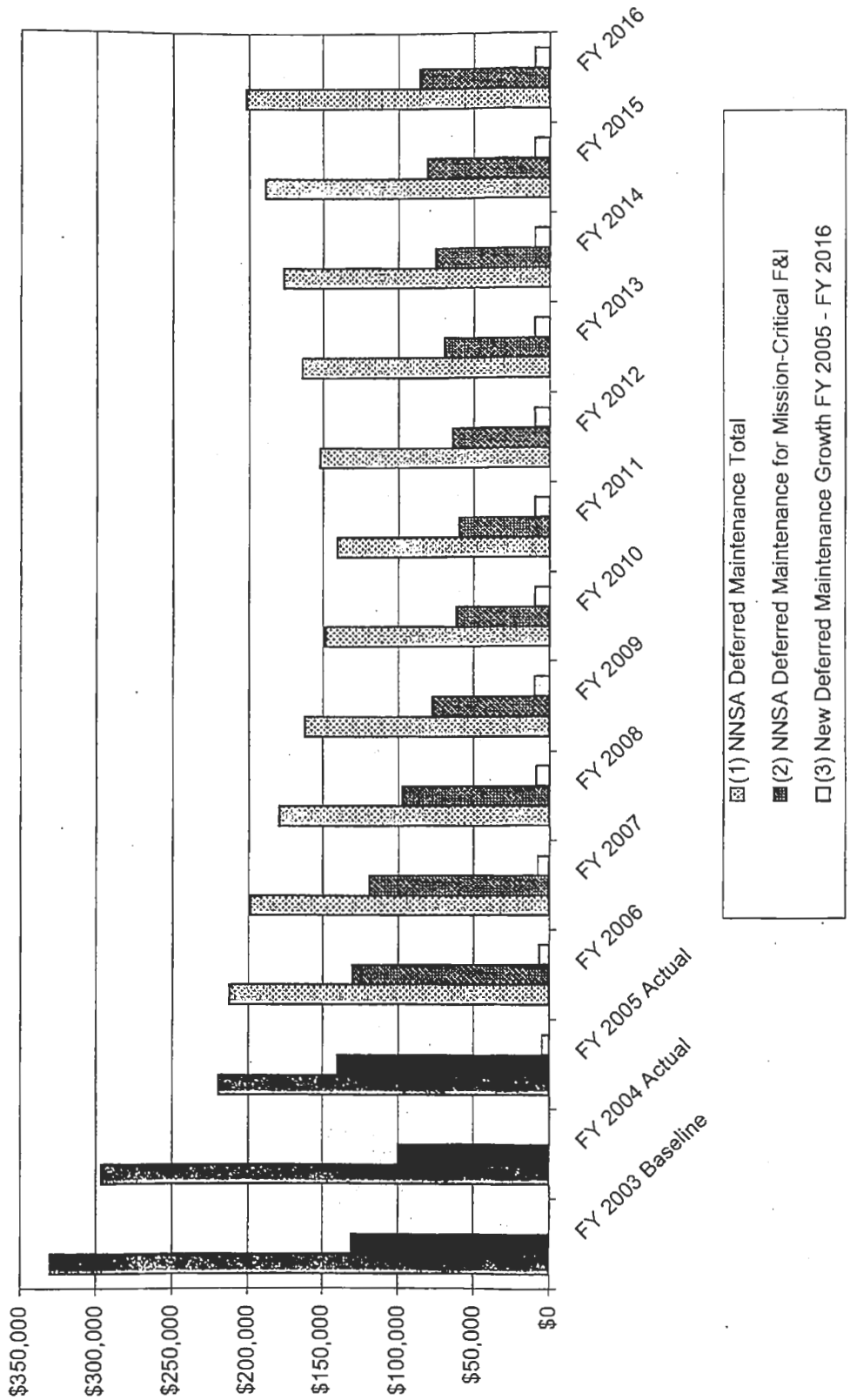
Attachment F-2
NNSA Total Deferred Maintenance and Projected Deferred Maintenance Reduction
Nevada Test Site ($000s)

	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
1. NNSA ANNUAL REQUIRED MAINTENANCE	48,443	48,498	56,410	57,707	59,035	60,392	61,782	63,203	64,656	66,143	67,665	69,221	70,813	72,442
1A. NNSA ANNUAL REQUIRED REPLACEMENT-IN-KIND	-	3,982	11,700	8,976	22,962	9,508	6,510	3,860	-	-	-	-	-	-
2. NNSA ANNUAL PLANNED MAINTENANCE TOTAL	33,123	33,582	56,620	57,092	58,695	57,999	59,333	60,697	62,093	63,521	64,982	66,477	68,006	69,570
a. Direct	10,035	9,620	13,428	14,112	13,380	13,688	14,002	14,324	14,654	14,991	15,336	15,688	16,049	16,418
b. Indirect	23,088	23,962	43,192	42,980	43,315	44,311	45,330	46,373	47,439	48,531	49,647	50,789	51,957	53,152
2A. NNSA ANNUAL PLANNED REPLACEMENT-IN-KIND	-	-	-	3,287	6,710	2,297	2,532	1,932	-	-	-	-	-	-
3. NNSA DEFERRED MAINTENANCE (DM) TOTAL (Excludes Programmatic Real Property or Equipment)	329,664	295,995	219,522	212,353	198,442	179,297	162,127	148,393	140,482	152,144	164,073	176,277	188,762	201,533
i. Backlog Inflation Multiplier (%)		2.3%	2.6%	2.0%	3.2%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%
ii. DM Inflation		6,655	5,564	4,068	5,938	3,851	3,443	3,111	2,934	3,196	3,464	3,738	4,019	4,306
iii. DM NEW		-	-	5,000	7,000	8,000	9,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
A. DM, Mission-Critical F&I ONLY	130,468	100,062	139,944	130,095	118,774	97,273	77,030	61,289	59,786	64,115	69,543	75,096	80,776	85,588
B. DM, Mission-Dependent and Not Mission-Dependent F&I	199,196	195,933	79,578	82,259	79,668	82,024	85,097	87,103	80,696	88,029	94,530	101,181	107,985	114,946
4. DEFERRED MAINTENANCE (DM) REDUCTION TOTAL for NNSA Facilities and Infrastructure (F&I)	16,571	33,689	38,585	16,234	26,848	30,996	29,613	26,846	20,844	1,535	1,535	1,535	1,535	1,535
A. Reduction in DM for Mission-Critical F&I	6,945	30,408	31,885	12,400	15,973	24,668	22,952	19,074	5,780	1,023	1,023	1,023	1,023	1,023
1. Reduction attributed to FIRP ONLY	6,945	18,466	19,537	9,340	12,676	9,525	9,508	18,051	4,757					
B. Reduction in DM for Mission-Dependent and Not Mission-Dependent F&I	9,626	3,263	6,919	3,834	10,875	6,330	6,661	7,772	15,064	512	512	512	512	512
1. Reduction attributed to FIRP ONLY	-	2,012	6,406	3,324	10,359	5,819	6,149	7,260	14,553					
5. TOTAL REPLACEMENT PLANT VALUE (RPV) for NNSA Facilities and Infrastructure (F&I)	2,422,125	2,447,865	2,458,788	2,505,924	2,586,114	2,645,594	2,708,443	2,768,891	2,832,371	2,897,515	2,964,158	3,032,334	3,102,078	3,173,425
A. RPV for NNSA Mission-Critical F&I ONLY	772,082	1,021,669	1,477,953	1,507,512	1,555,753	1,591,535	1,628,140	1,665,588	1,703,895	1,743,086	1,783,177	1,824,190	1,866,146	1,909,067
B. RPV for NNSA Mission-Dependent and Not Mission-Dependent F&I	1,650,043	1,426,196	978,835	998,412	1,030,361	1,054,059	1,078,303	1,103,103	1,128,475	1,154,430	1,180,982	1,208,144	1,235,932	1,264,358
C. Total RPV increase from prior year attributed to inflation				49,136	80,190	59,481	60,849	62,248	63,680	65,145	66,643	68,176	69,744	71,348
D. Total RPV increase/decrease attributed to causes other than inflation (provide separate supporting narrative behind F-2 exhibit)				-	34,263	18,500	6,578	-	-	-	-	-	-	-

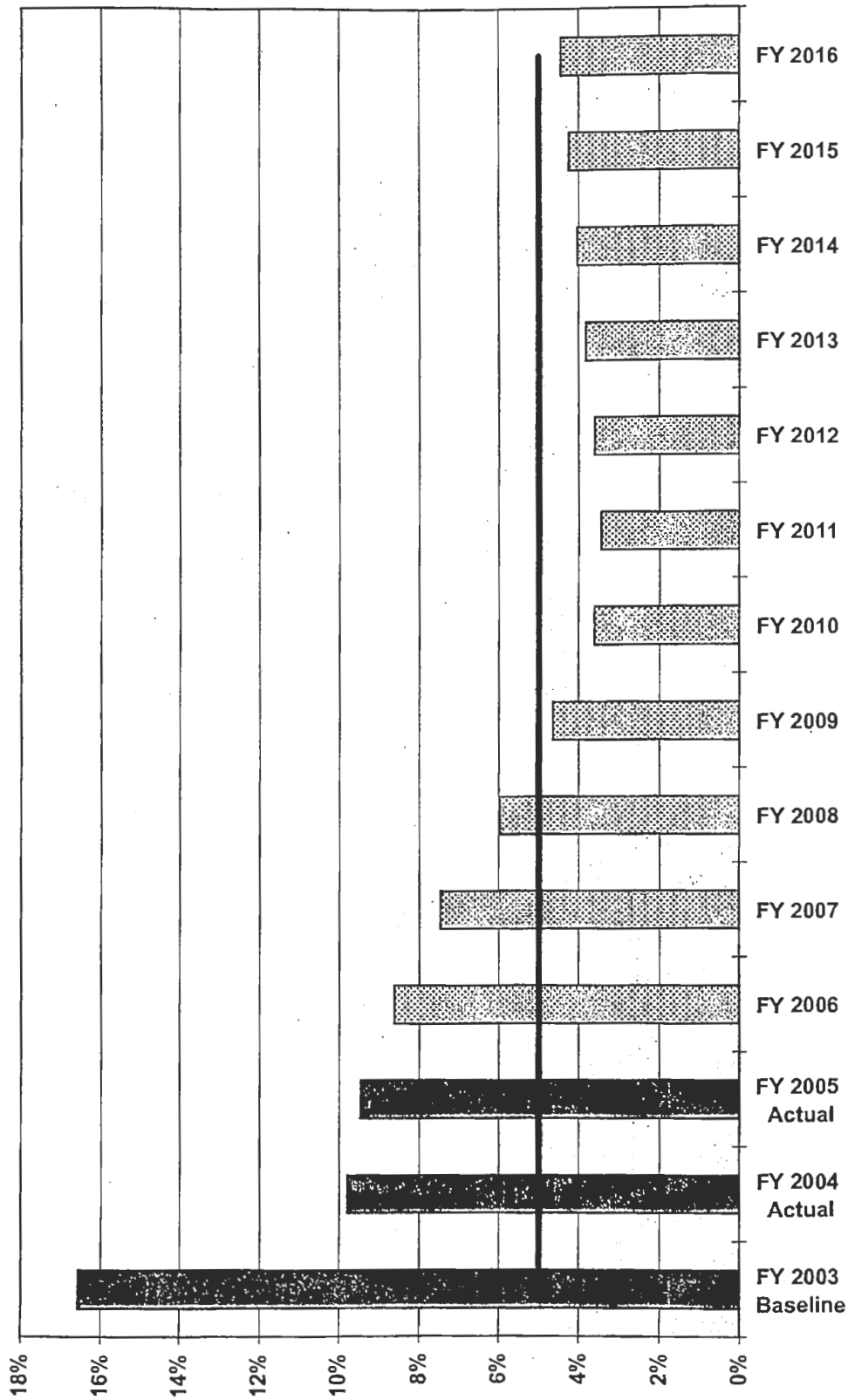
ATTACHMENT F-3
(FY 2005 - FY 2018) NNSA Nevada Test Site's Total Deferred Maintenance,
Mission Critical Deferred Maintenance, and New Deferred Maintenance Growth

	FY 2003 Baseline	FY 2004 Actual	FY 2005 Actual	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
(1) NNSA Deferred Maintenance Total	$329,664	$295,995	$219,522	$212,353	$198,442	$179,287	$162,127	$148,393	$140,482	$152,144	$164,073	$176,277	$188,762	$201,533
(2) [illegible]	$130,468	$100,062	$139,944	$130,095	$118,774	$97,273	$77,030	$61,289	$59,786	$64,115	$69,543	$75,096	$80,776	$85,588
(3) New Deferred Maintenance Growth FY 2005 - FY 2018	$0	$0	$5,000	$7,000	$8,000	$9,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000

Attachment F-3
NNSA Nevada Test Site's Total Deferred Maintenance Mission-Critical
Deferred Maintenance, and Cumulative Deferred Maintenance (FY 2003 - FY 2016)



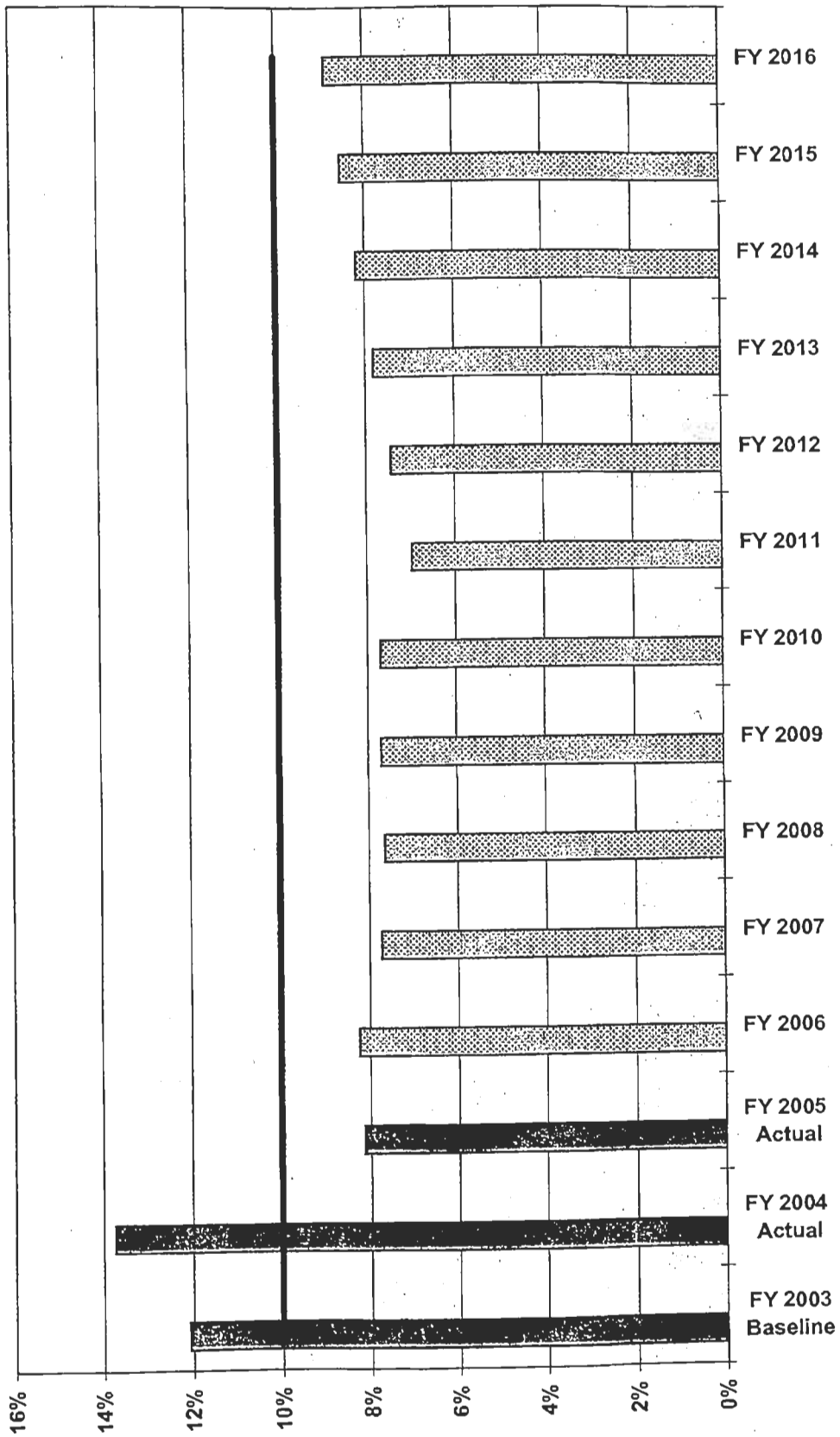
Attachment F-4
Nevada Test Site's Progress Towards FY 2009 Goal of <5% Deferred Maintenance
Mission Critical Facilities & Infrastructure (FY 2003 - FY 2016)



Attachment F-5

Nevada Test Site's Progress Towards FY 2009 Goal of <10% Deferred Maintenance

Mission-Dependent and Not Mission-Dependent Facilities & Infrastructure (FY 2003 - FY 2016)



ATTACHMENT F-6

NNSA Nevada Test Site's Total Facility Condition Index (NNSA ONLY)

(FY 2003 - FY 2016)

	FY 2003 Baseline	FY 2004 Actual	FY 2005 Actual	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
NNSA Nevada Test Site	14%	12.09%	8.94%	8.47%	7.57%	6.64%	5.86%	5.24%	4.85%	5.13%	5.41%	5.68%	5.95%	6.21%

Attachment F-7
Replacement-In-Kind Projects Over $500K

Optimum Year for Funding (1)	Project Name (2)	Facility ID (FIMS) (3)	Mission Dependency (4)	Description of Deficient Subsystems for Replacement-In-Kind (5)	Funding Source (6)	Planned Fiscal Year for Funding (7)	Identified in FY 2003 Baseline (Y or N) (8)	Within Current FYNSP Constraints (Y or N) (9)	Projected Cost ($K) (10)
2009	NTS Replace Oil Based PIDs Areas 6 & 25	05P-S-9 25P-S-CA & 25P-S-16	MC	Repl four O-PIDs in substn. 6-9, four O-PIDs in Canyon Substn & one OCB in substn 25-16	FIRP	2009	Y	Y	4,000
2010	NTS Replace Two A-25 Metal Booster Stations	Bldgs 25-3121 & 25-3122	MD	J-11 Main Booster House & the RCP Booster House	FIRP	2010	Y	Y	800
2010	NLV Roof Replacement 2010	N/A	MC		N/A	2010	N	N	822
2010	NTS Roof Replacement 2010	N/A	MC		N/A	2010	N	N	1,110
2010	NTS Replace Copper Cabling, Area 16 Tunnels to Shaker Plant Subdock	90C-CC-NTSC	MD	Site-wide copper cabling network	FIRP	2010	Y	Y	1,500
2010	NTS Reconstruct Road 4-04 (Mercury Hwy to BEEF) (07)	04R-404	MC	Road 4-04 from Mercury Hwy to BEEF	FIRP	2010	Y	Y	1,560
2011	NLV Roof Replacement 2011	N/A	MC		N/A	2011	N	N	2,028
2011	NTS Roof Replacement 2011	N/A	MC		N/A	2011	N	N	1,398
2012	NLV Roof Replacement 2012	N/A	MC		N/A	2012	N	N	2,042
2012	NTS Roof Replacement 2012	N/A	MC		N/A	2012	N	N	1,560
2013	NTS Roof Replacement 2013	N/A	MC		N/A	2013	N	N	670
2014	NLV Roof Replacement 2014	N/A	MC		N/A	2014	N	N	1,489

Attachment G
NNSA Mission Critical Facilities and Infrastructure
Nevada Site Office Spreadsheet

	NNSA Mission-Critical Facilities and Infrastructure Name (1)	Facility Identification Number (From FIMS) (2)	Current Condition (From CAS) (3)	Linkage to Stockpile Stewardship Program[2] (4)	Linkage to Defense Programs Priorities (5)
1	NTS U1a Complex[1]	01-U1A	N/A	DSW, C-1, C-12	3,6,10
2	NTS Bunker (BEEF)	04-300	EXCELLENT	DSW, C-1, C-2, C-12	3
3	NTS Culvert Bunker (BEEF)	04-35	ADEQUATE	DSW, C-1, C-2, C-12	3
4	NTS Bunker (BEEF)	04-480	EXCELLENT	DSW, C-1, C-2, C-12	3
5	NTS Area 5 RWMS Field Office	05-07	EXCELLENT		3
6	NTS Area 5 RWMS Hazardous Waste Storage Unit	05-20	GOOD		3
7	NTS Area 5 TRU Pad Covered Building	05-24	POOR		3
8	NTS Area 5 RWMS Controlled Area Access Bldg.	05-31	EXCELLENT		3
9	NTS Visual Examination And Repackaging Building	05-32	GOOD		3
10	NTS DAF Guard Station (DAF)	06-202651	EXCELLENT	DSW, C-1, C-2, C-12, TR	3
11	NTS DAF Mech/Elect Facility (DAF)	06-500	EXCELLENT	DSW, C-1, C-2, C-12, TR	3
12	NTS Service Station	06-619	POOR		3
13	NTS Operations Equipment Department Drilling	06-624	FAIR		3
14	NTS Physical Fitness Facility	06-625	FAIR		3
15	NTS Heavy Duty Repair Shop	06-800	GOOD		3
16	NTS Construction Administration	06-900	EXCELLENT		3
17	NTS Cable Service Center (Atlas)	06-904	EXCELLENT	DSW, C-1, C-2, C-4, C-5	3
18	NTS Carpenters/Painters/Laborers Craft Shop	06-906	EXCELLENT		3
19	NTS Metalworkers Craft Shop	06-908	EXCELLENT		3
20	NTS DX-5 Shop And Storage	06-913	EXCELLENT		3
21	NTS Wiremen Shop	06-914	GOOD		3
22	NTS Atlas Pulsed Power Facility	06-922	EXCELLENT	DSW, C-1, C-2, C-4	3
23	NTS Atlas Site	06-923	EXCELLENT	DSW, C-1, C-2, C-4	3
24	NTS Microwave Structure (C&C)	06-999929	FAIL		3
25	NTS Control Point 1 (C&C)	06-CP-1	FAIL	DSW, C-1, C-5, C-12, TR,	3
26	NTS Los Alamos Warehouse	06-CP-100	FAIL		3
27	NTS Detonator Bunker (LANL)	06-CP-111	GOOD		3
28	NTS CADAC Generator Shed (C&C)	06-CP-15	EXCELLENT		3
29	NTS Craft Shop	06-CP-160	ADEQUATE		3
30	NTS CP-18 Microwave Site	06-CP-18	ADEQUATE		3
31	NTS Control Point-213	06-CP-213	GOOD		3
32	NTS Sandia Cable Support	06-CP-215	EXCELLENT		3
33	NTS Power Facility Building (C&C)	06-CP-3	FAIL		3
34	NTS Comm And Electronics (C&C)	06-CP-40	POOR	DSW, C-1, C-12, TR	3
35	NTS Helicopter Hangar	06-CP-41	ADEQUATE		3
36	NTS Bunker IICC	06-CP-43	EXCELLENT		3
37	NTS Los Alamos Light Lab	06-CP-45	FAIR		3
38	NTS Fire Station & Med Aid	06-CP-70	FAIL		3
39	NTS Area 6 Fire Station Dormitory	06-CP-71	NOT ASSESSED		3
40	NTS CADAC (C&C)	06-CP-9	FAIL	DSW, C-1, C-12, TR	3
41	NTS Control Point 95a	06-CP-95A	ADEQUATE		3
42	NTS Device Assembly Facility (DAF)	06-DAF	EXCELLENT	DSW, C-1, C-2, C-5, C-12, TR,	3
43	NTS Guard Station, CP-Compound (Security)	06-GS-270	EXCELLENT		3
44	NTS Los Alamos Operations	190-LAO	LEASED	DSW, C-1, C-2, C-3, C-4, C-12, TR	3,10
45	NTS Badge Office/Security (Security)	23-1000	GOOD		3
46	NTS Security Operations	23-1001	FAIR		3
47	NTS Science Technology & HBT	23-1002	ADEQUATE		3
48	NTS Mercury Switching Station	23-1010	FAIL		3
49	NTS Brooks Range (Security)	23-1100	FAIR		3
50	NTS Ammunition Storage (Security)	23-1101	GOOD		3
51	NTS Training Academy (Security)	23-1103	EXCELLENT		3
52	NTS Lowery Range C-Complex	23-1104	FAIR		3
53	NTS Administration/Engineering	23-111	FAIR		3
54	NTS Administration/Engineering	23-117	ADEQUATE		3
55	NTS Main Warehouse	23-160	FAIR		3
56	NTS Materials Testing Lab	23-190	ADEQUATE		3
57	NTS Mercury Cafeteria	23-300	GOOD		3
58	NTS Walk-In Cold Storage	23-301	FAIR		3
59	NTS Fire Station #1	23-425	FAIL		3
60	NTS Area 23 Fire Station Dormitory	23-426	EXCELLENT		3
61	NTS Dormitory	23-531	EXCELLENT		3
62	NTS Dormitory	23-532	GOOD		3
63	NTS Dormitory	23-535	EXCELLENT		3
64	NTS Dormitory Utility Building	23-536	POOR		3
65	NTS Joint Testing Office (Blue Box)	23-600	EXCELLENT		3
66	NTS High Bay	23-600A	EXCELLENT		3
67	NTS Radiation Calibration Lab	23-610	EXCELLENT		3
68	NTS Medical, Rad Sci & Hosp [Occup. Med.]	23-650	FAIR		3
69	NTS Maintenance Shop	23-700	EXCELLENT		3
70	NTS WSI Technical Support (Security)	23-701	POOR		3
71	NTS Craft Building	23-710	GOOD		3
72	NTS Telecommunications	23-725	FAIR		3
73	NTS Print Plant/Radio Communications	23-726	ADEQUATE		3
74	NTS Motor Pool Maintenance	23-750	EXCELLENT		3
75	NTS Equipment Maintenance	23-751	ADEQUATE		3
76	NTS Fleet Operations	23-752	GOOD		3
77	NTS Boiler House	23-753	FAIL		3
78	NTS Cafeteria Boiler Building	23-754	FAIL		3
79	NTS Utility Warehouse	23-777	FAIR		3
80	NTS Guard Station/W Canopy (Security)	23-GS-100	POOR		3
81	NTS Tolster Range 8 Complex	23-T00058	EXCELLENT		3

Attachment G
NNSA Mission Critical Facilities and Infrastructure
Nevada Site Office Spreadsheet

	NNSA Mission-Critical Facilities and Infrastructure Name (1)	Facility Identification Number (From FIMS) (2)	Current Condition (From CAS) (3)	Linkage to Stockpile Stewardship Programs (4)	Linkage to Defense Programs Priorities (5)
159	NTS Multi-Streets, Mercury site streets	23R-Urban	POOR		3
160	NLVF Multi-Streets, Atlas, Energy Way & others	24R-Urban	GOOD		3
161	NTS Lathrop Wells Rd, Cane Springs to NTS Boundary (Gate 510)	25R-LW	GOOD		3
162	NTS Cane Spring Rd, Phoenix Jct. to Gate 500/JF Rd	26R-CS-W	NOT ASSESSED		3
163	NTS 28-03 Road, Cane Springs Rd to Able Site	27R-2803-N	FAIR		3
164	RSL -N Multi-Streets	35R-Urban	GOOD		3
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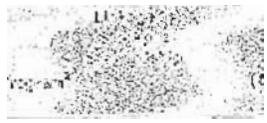

Attachment G
NNSA Mission Critical Facilities and Infrastructure
Nevada Site Office Spreadsheet

	NNSA Mission-Critical Facilities and Infrastructure Name (1)	Facility Identification Number (From FIMS) (2)	Current Condition (From CAS) (3)	Linkage to Stockpile Stewardship Program[2] (4)	Linkage to Defense Programs Priorities (5)
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OUO Exemption 2

Attachment G
NNSA Mission Critical Facilities and Infrastructure
Nevada Site Office Spreadsheet

	NNSA Mission-Critical Facilities and Infrastructure Name (1)	Facility Identification Number (From FIMS) (2)	Current Condition (From CAS) (3)	Linkage to Stockpile Stewardship Program[2] (4)	Linkage to Defense Programs Priorities (5)
435					
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	Storm Drainage System				
459	NLV 12"f storm drain (incl. <12" RCP)	24SD-12	NOT ASSESSED		3
460	NLV 18"f storm drain	24SD-18	NOT ASSESSED		3
461	NLV 21"f storm drain	24SD-21	NOT ASSESSED		3
462	NLV 24"f storm drain	24SD-24	NOT ASSESSED		3
463	NLV 30"f storm drain	24SD-30	NOT ASSESSED		3
464	NLV 36"f storm drain	24SD-36	NOT ASSESSED		3
465	NLV Slotted drains	24SD-Slot	NOT ASSESSED		3
466	NLV NE concrete open channel	24SD-NEOC	NOT ASSESSED		3
467	NLV SW concrete open channel	24SD-SWOC	NOT ASSESSED		3
	Fire Water System				
468	RSL-N Fire Water Storage Tanks (4 ea)	35FW-ST/4	NOT ASSESSED		3
469	RSL-N Fire Water Pipe Lines- 6" & 12"f	35FW-FPL	NOT ASSESSED		3
	Communication Duct System				
470	NTS 10 - 4"f UG PVC conduit	24C-D-10/4	NOT ASSESSED		3
471	NTS 6 & 8 - 4"f UG PVC conduit	24C-D-6-8/4	NOT ASSESSED		3
472	NTS 2 & 4 - 4"f UG PVC conduit	24C-D-4-2/4	NOT ASSESSED		3
473	NTS 2 & 4 - 2"f UG PVC conduit	24C-D-2-4/2	NOT ASSESSED		3
474	RSL 2 & 4 - 4"f UG PVC conduit	35CD-4-2/4	NOT ASSESSED		3
	Natural Gas Distribution System				
475	NLV 6"f UG gas pipe	24GP-6	NOT ASSESSED		3
476	NLV 4"f UG gas pipe	24GP-4	NOT ASSESSED		3
477	NLV 3"f UG gas pipe	24GP-3	NOT ASSESSED		3
478	NLV 2"f UG gas pipe	24GP-2	NOT ASSESSED		3
479	NLV 1"f UG gas pipe	24GP-1	NOT ASSESSED		3
	Compressed Air Line System				
480	NLV Air Compressors and Driers	24CA-Comp	NOT ASSESSED		3
481	NLV 2"f UG, steel air piping	24CA-1/2P	NOT ASSESSED		3
	Parking Pavements				
482	NLV Parking, light vehicle	24R-LVP	NOT ASSESSED		3
482	NLV Parking, industrial vehicle	24R-IVP	NOT ASSESSED		3
483	RSL Parking/storage pads	35R-P/SP	NOT ASSESSED		3

OUO Exemption 2

Notes:

1 The U1a Complex includes all facilities at U1a and U1h.

2 If linkage to Stockpile Stewardship Program is blank, it indicates support for all campaigns.

3 The red text indicates new Mission-Critical buildings and new infrastructure.

Attachment H
Site's Security Infrastructure Portfolio
for Nevada Site Office

OUO Exemption 2

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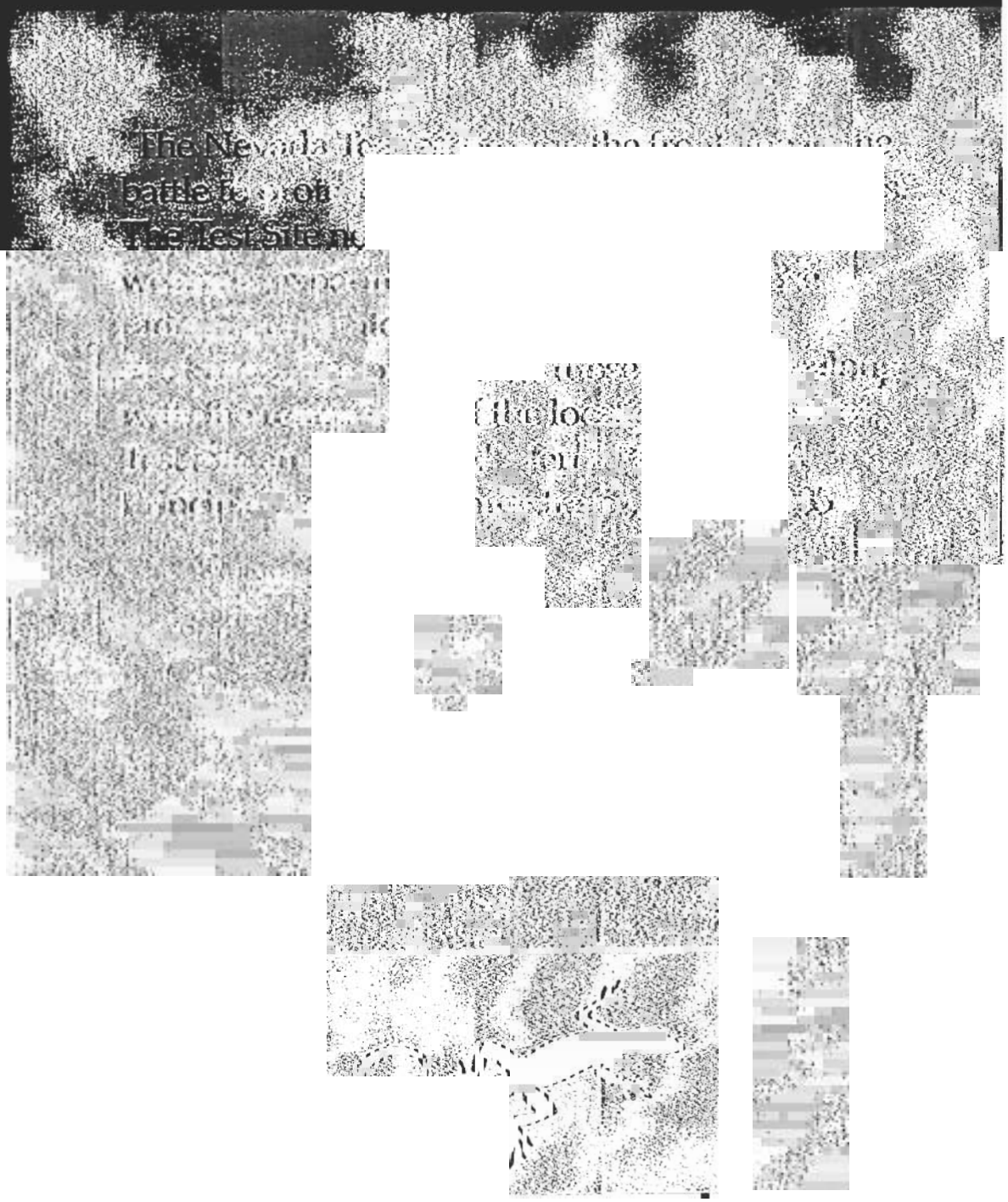
FY 2007 NNSA/NSO
Ten-Year Site Plan



Appendix B: Site Maps

Following is a list of site maps included in this appendix.

Figure B-1. Area 23 (Mercury) Existing Site Plan
Figure B-2. Area 23 (Mercury) Future Site Plan
Figure B-3. Area 6 (Control Point) Existing Site Plan
Figure B-4. Area 6 (Control Point) Future Site Plan
Figure B-5. Area 6 Future
Figure B-6. Nevada Test Site Building Status Overview
Figure B-7. Area 23 (Mercury) Building Status
Figure B-8. Area 6 (Control Point) Building Status
Figure B-9. Area 12 Camp Building Status
Figure B-10. Nevada Test Site Paved Road System
Figure B-11. Nevada Test Site Power Systems
Figure B-12. Nevada Test Site Water Systems
Figure B-13. Nevada Test Site Fiber Optic System
Figure B-14. Nevada Test Site Microwave System
Figure B-15. North Las Vegas Facility Existing Site Plan
Figure B-16. Remote Sensing Laboratory-Nellis Existing Site Plan
Figure B-17. Remote Sensing Laboratory-Nellis Future Site Plan

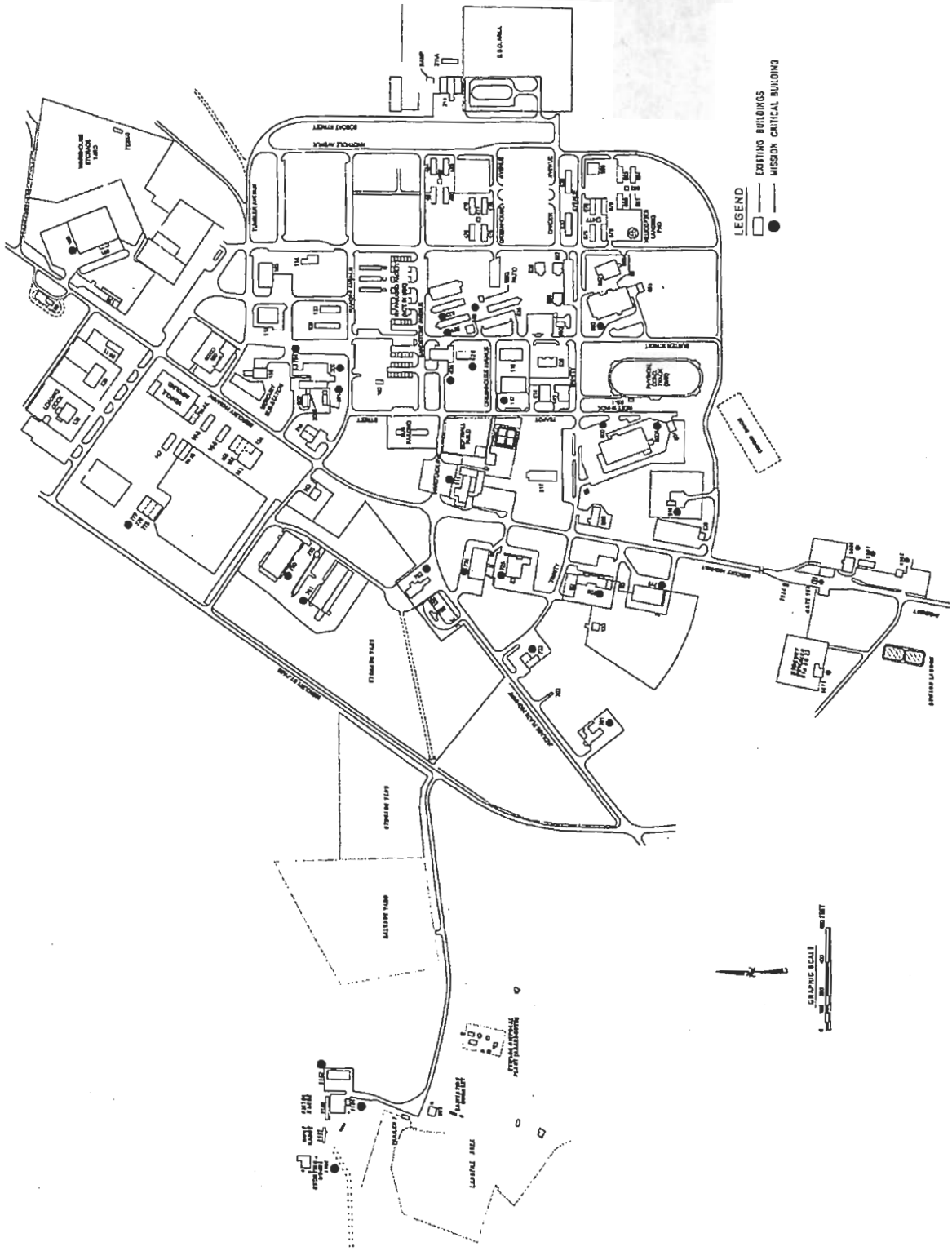
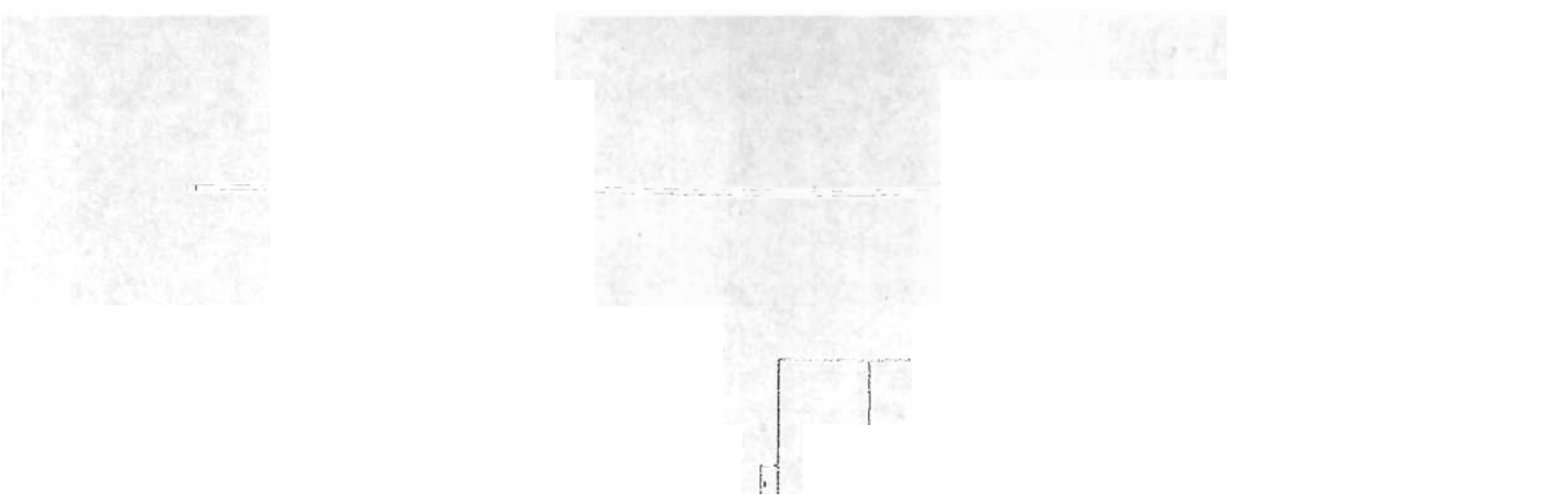


Figure B-1: Area 23 (Mercury) Existing Site Plan



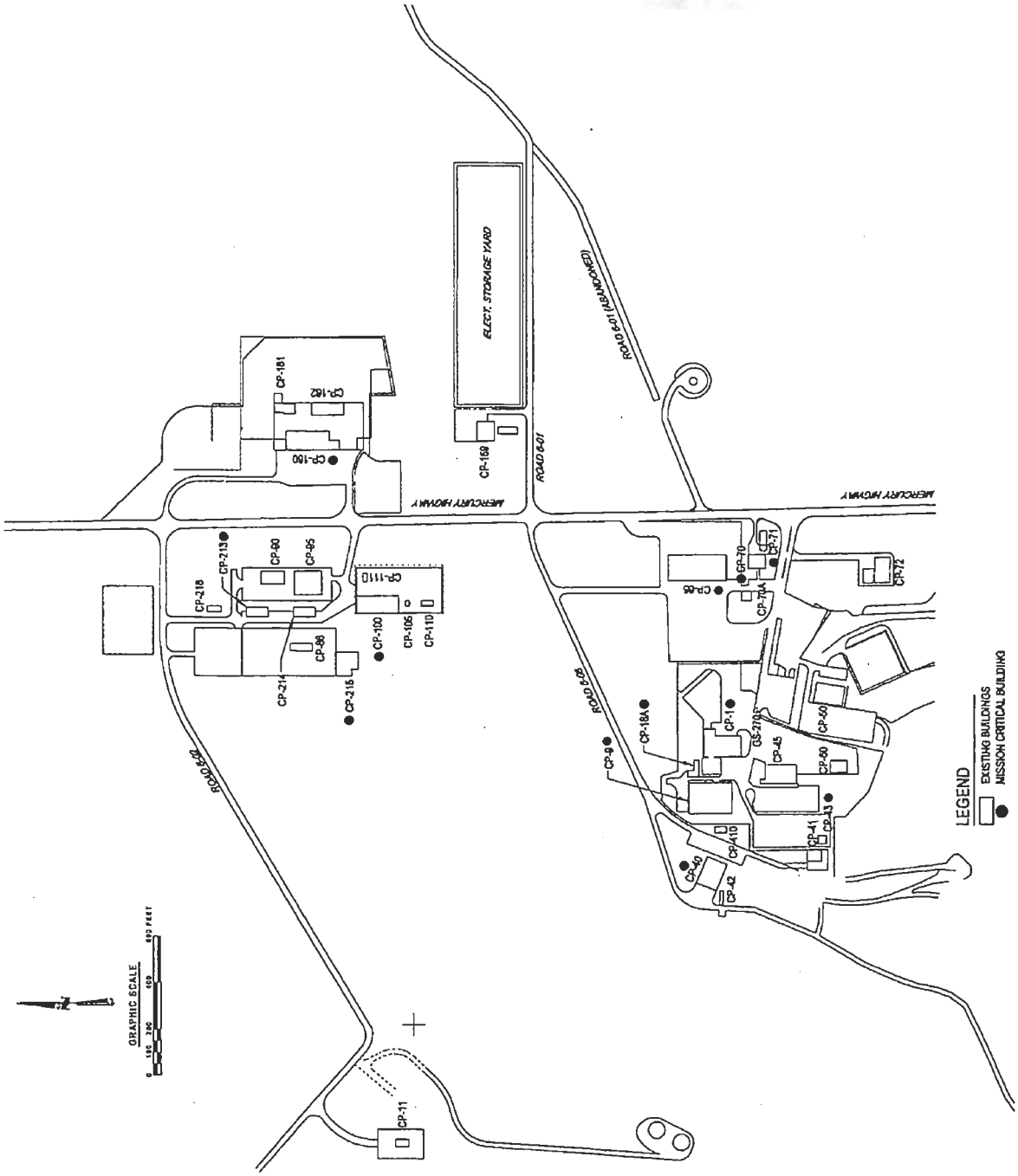


Figure B-3: Area 6 (Control Point) Existing Site Plan

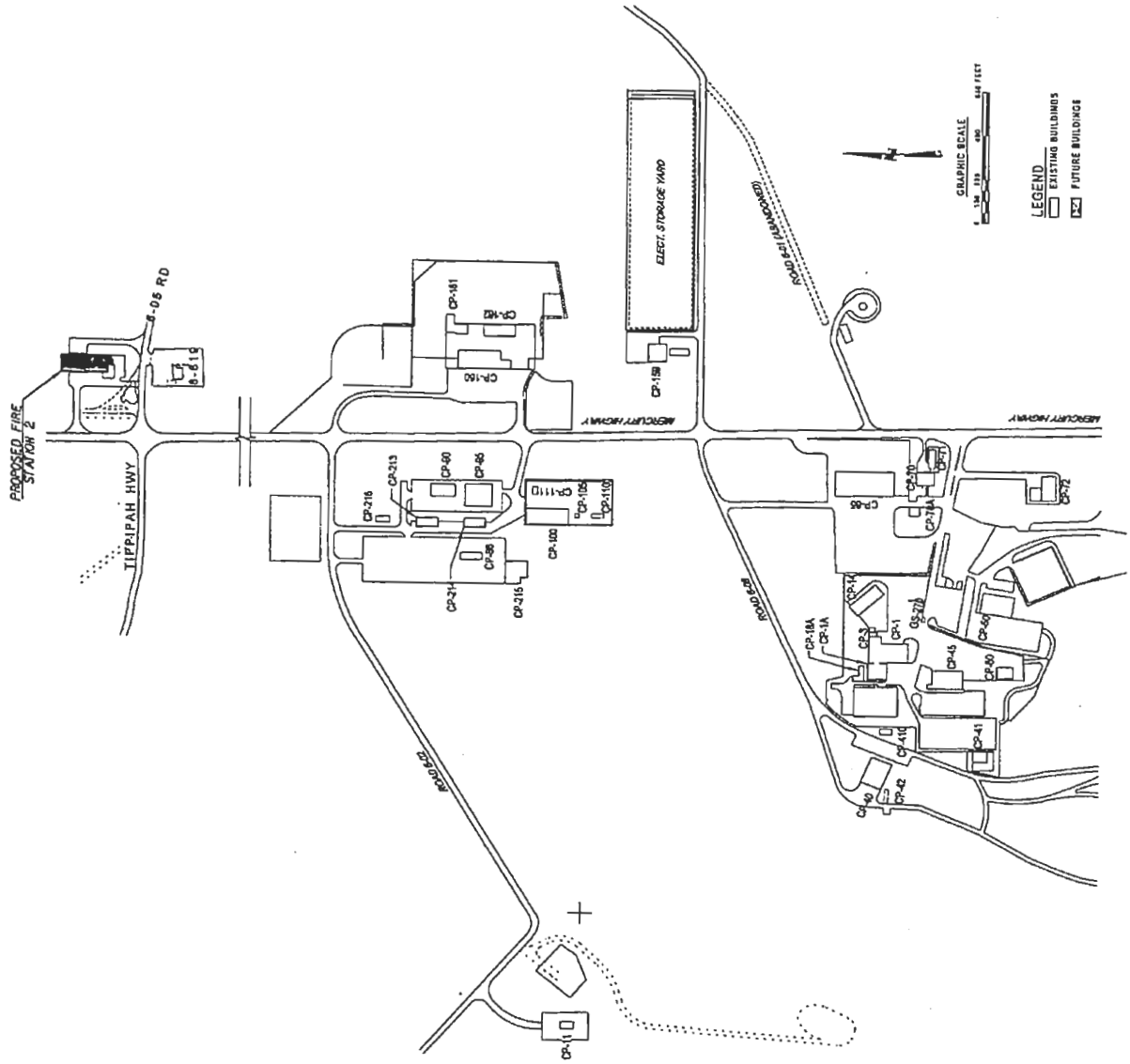


Figure B-4: Area 6 (Control Point) Future Site Plan

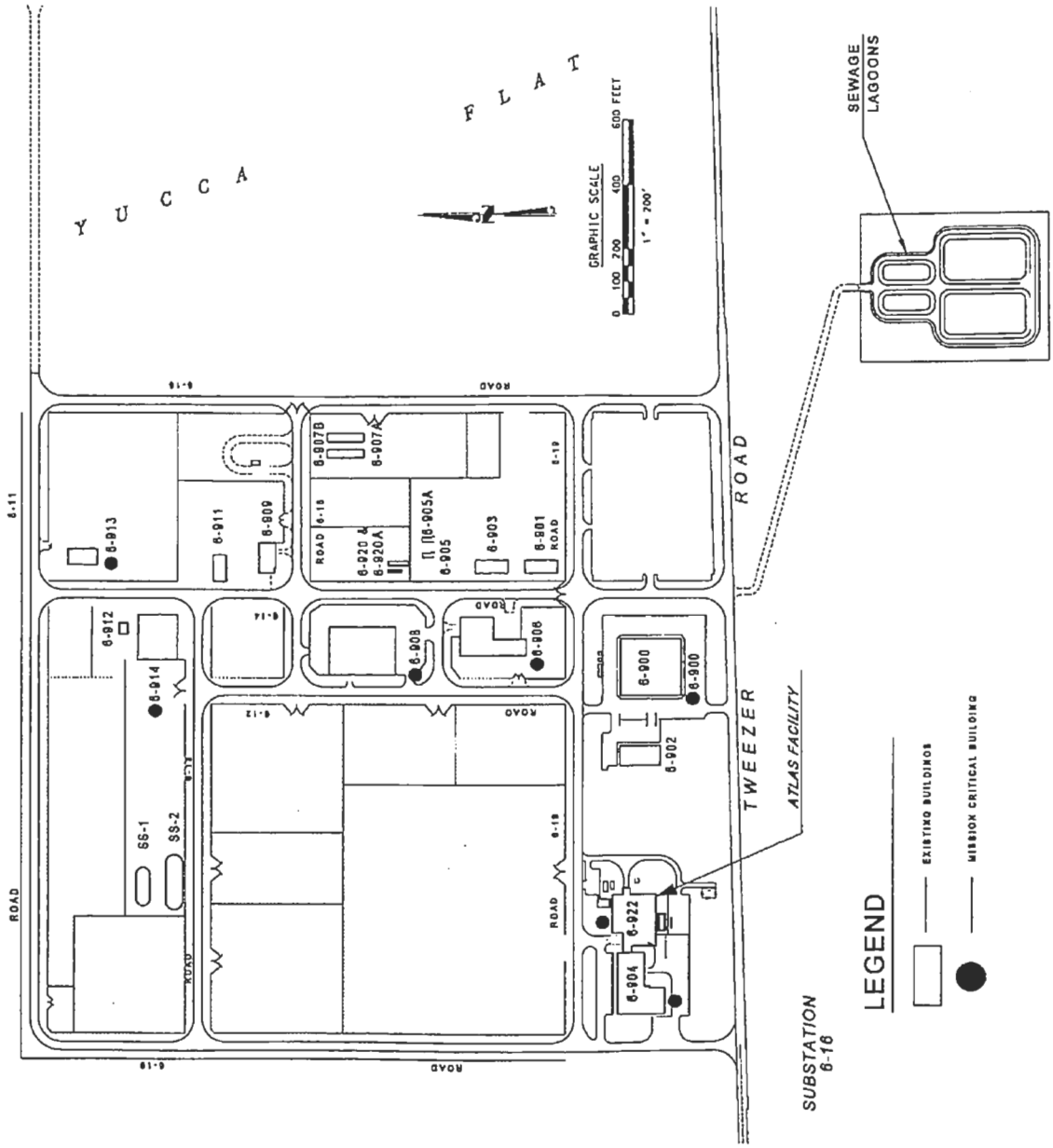


Figure B-5: Area 6 Future

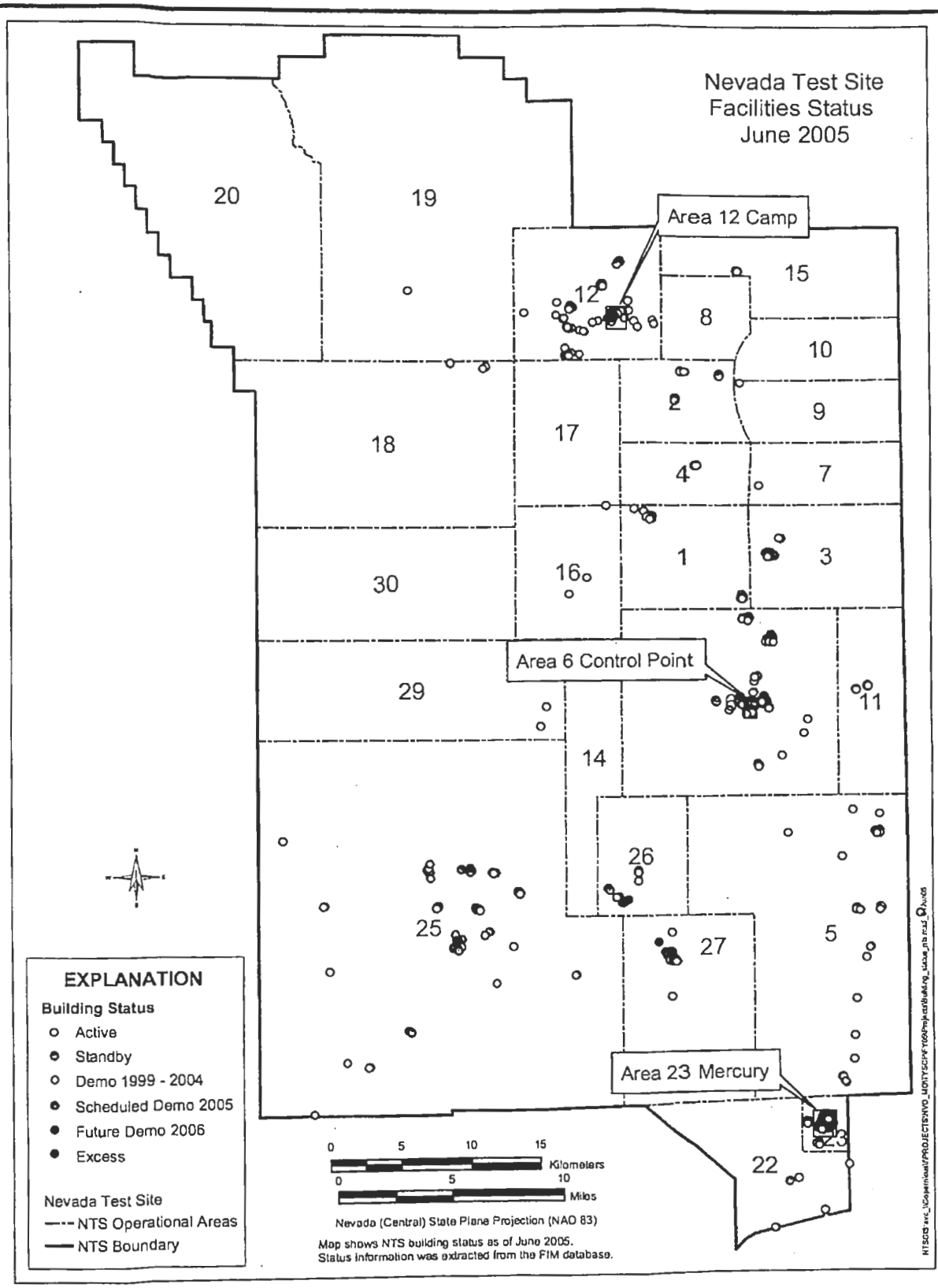


Figure B-6: Nevada Test Site Building Status Overview

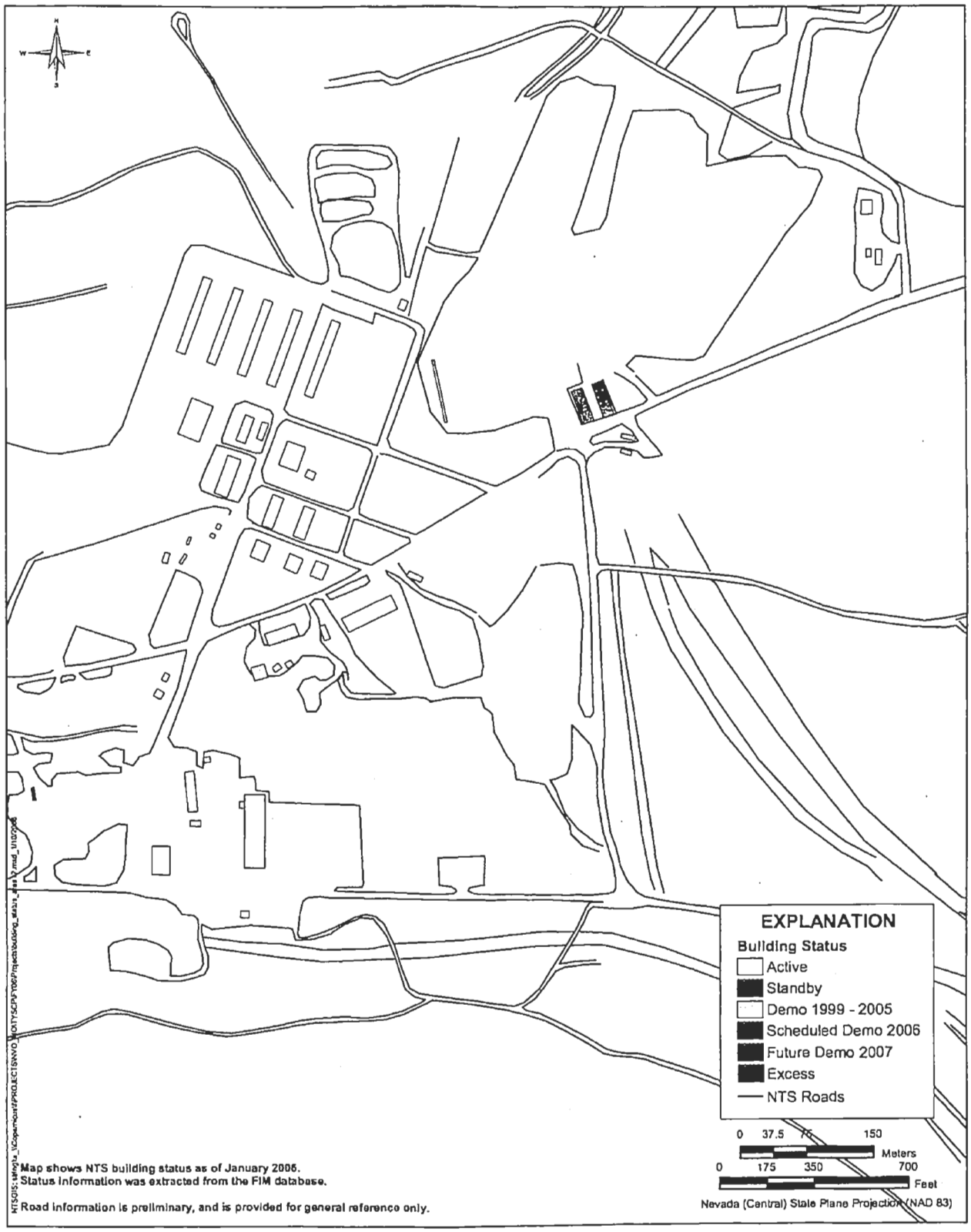


Figure B-9: Area 12 Camp Building Status

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Exemption 2

Figure B-10: Nevada Test Site Paved Road System

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Exemption 2

Figure B-11: Nevada Test Site Power Systems

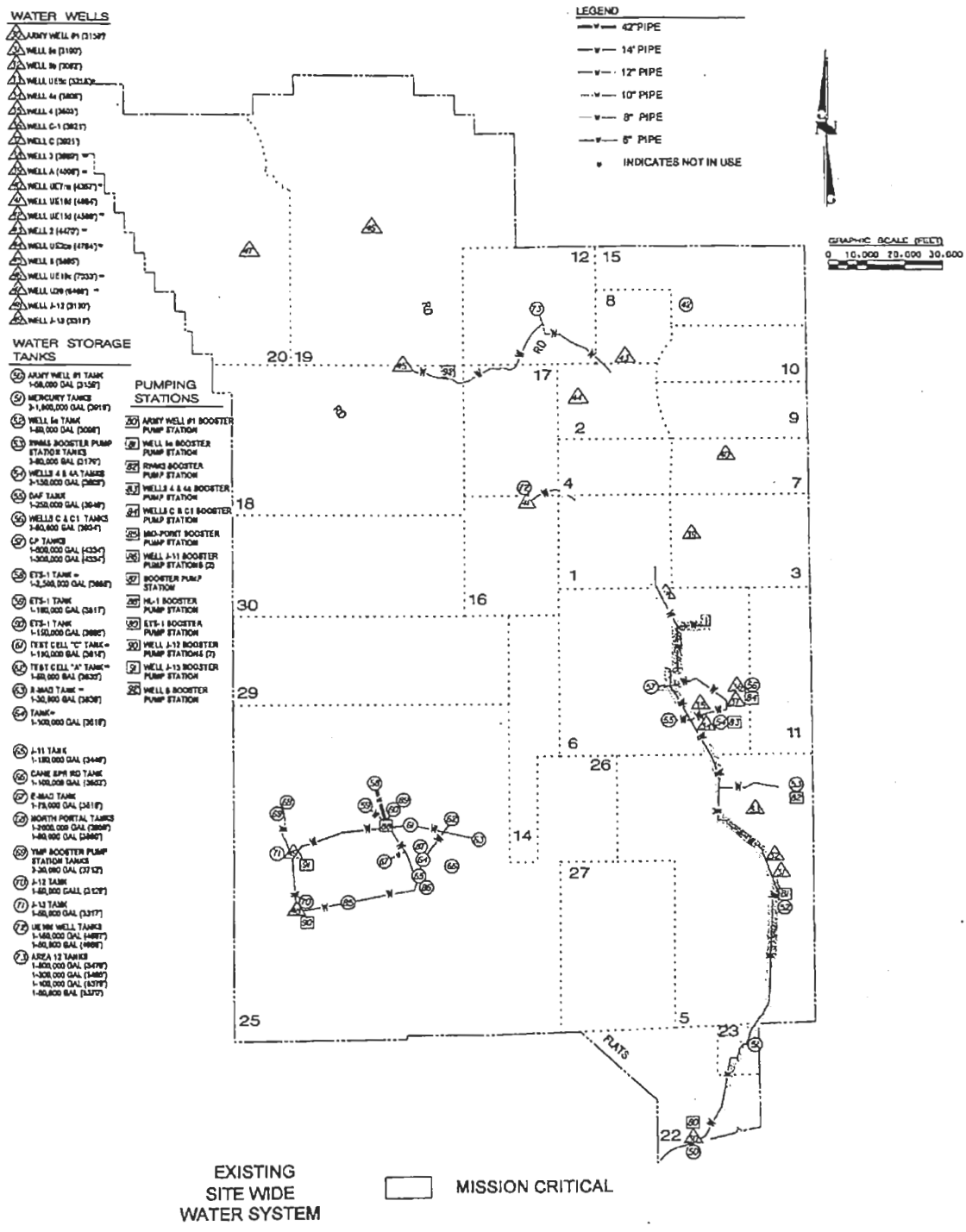

Figure B-12: Nevada Test Site Water Systems

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Exemption 2

Figure B-13: Nevada Test Site Fiber Optic System

This map is OUO
Exemption 2

Figure B-14: Nevada Test Site Microwave System

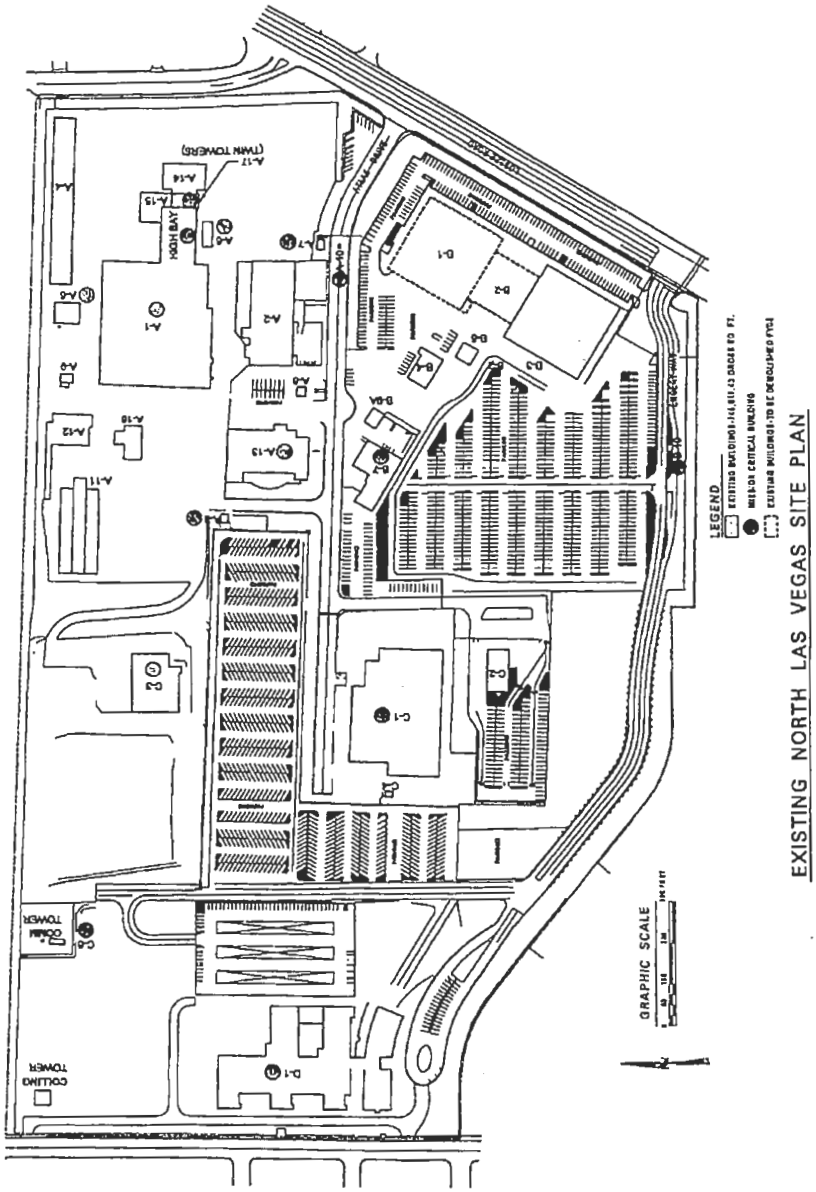


Figure B-15: North Las Vegas Facility Existing Site Plan

Appendix C

FY 2007 NNSA/NSO
Ten-Year Site Plan

was developed. Once this list was determined, elements/systems were evaluated according to a rating system similar to that used by the Condition Assessment Survey program for facilities. Subject Matter Experts developed a unique rating system with definitions for each infrastructure element and then rated the condition of the infrastructure element based on the deficiencies found. This rating was directly reported as the condition of the infrastructure element in the Facility and Infrastructure Assessments Report.

Table C-2 lists one example of the translations used for the infrastructure condition definitions and their color codes.

Table C-2: Facility and Infrastructure Assessments color codes for infrastructure

CAC	CONDITION CODES: 1 & 2
Excellent: most equipment is less than 2 years old, easily restorable to like-new condition, and requires routine maintenance **Good/Pass:** equipment is between 2-6 years old (50% of useful life). Performs to original specs. Equipment/material adequate for performing the designated function.	
CAC	**CONDITION CODE: 3**
Fair: equipment is between 7-11 years old (90% of useful life or has exceeded its useful life), is less than adequate but functions, and requires extensive maintenance or does not comply with applicable industry standards	
CAC	**CONDITION CODE: 4**
Poor: equipment/material have exceeded the end of expected life and nearing failure, failures are disruptive and expensive, and costs for spare parts can exceed 70% of replacement value	
CAC	**CONDITION CODE: 5**
Fail: manufacturer support for equipment has ended, equipment/material does not function at acceptable level, hazardous conditions exist, significant failure is expected within 2 years, and needs replacement	

A cumulative summary of updated condition assessment results for facilities and infrastructure at the NTS, NLV, and RSL are shown in Tables C-3 through C-5. Infrastructure assessments were completed in FY 2003 and a reassessment of the water systems was completed in FY 2005; results shown reflect the last assessment data reported. FY 2006 assessments ae still in progress.

Facility and Infrastructure Survey

In conjunction with the condition assessment program, a Facility and Infrastructure Survey was distributed to Facility Managers/Facility Owners to complete and evaluate each facility and infrastructure system on criteria focused on mission/program importance, technological suitability, future use potential and program input. This survey was adapted to help management focus toward a specific target group of facility and infrastructure for further review and decisions. Once the survey results were received and totaled, each facility and infrastructure element receives a Facility and Infrastructure Survey status rating. Table C-6 lists the facility and infrastructure color codes, status ratings, and associated definitions.

The overall purpose of this survey is to document the issues and concerns of the user. For example, the Condition Assessment Survey assessment of the heating, ventilation, and air conditioning system in a facility may be rated as "excellent"; system is working according to system specifications. However, based on user input, it is not adequately providing the air quality necessary to accommodate the current activities of the facility. This discrepancy of facility functionality would be an issue identified through the use of the survey. Figures C-2 and C-3 summarize the overall status results of the Facility Survey Ratings and Infrastructure Survey Ratings, respectively.

Project Prioritization Matrix

After the review of the condition assessment information, the Facility and Infrastructure Survey results, and the additional Facility Manager/Facility Owner comments, assessment issues are listed and prioritized using a priority matrix. This matrix uses a combination of "risk level" and "impact probability" to provide an overall priority ranking of the issue according to the matrix shown in Figure C-4.

Independently, the Facility Manager/Facility Owner knowledgeable of the mission drivers and impact potential, rank the facility and infrastructure elements

Table C-5: Facility and Infrastructure Condition by Area *(Chart areas in gray denote that this area does not contain F&I or the area is inactive and was not accessed)*

Area	Facility	Power	Water	Roads	Comm.	Solid Waste
Area 1	2	2	2	3	3	
Area 2		2		3		
Area 3		3		2		
Area 4	2	3		1	2	
Area 5	2	2	2	2	3	1
Area 6	3	2	2	1	3	2
Area 7	3	3				
Area 8		3				
Area 9						
Area 10		2		3		
Area 11	3	3		3		
Area 12	3	2	2	3	2	3
Area 14		2				
Area 15		2				
Area 16		3	2			
Area 18	3	2	3	2		
Area 19		3			3	
Area 20		2				
Area 22		2	1	2	3	1
Area 23	2	3	2	2	2	2
Area 24	2	2			2	
Area 25	3	3	3		3	2
Area 27	2	3	3	2	3	2
Area 29		3			3	
LV-Sum					2	
RSL- Andrews	2					
RSL- Nellis	1				3	

Table C-6: Facility and Infrastructure Survey Legend

FIS Code	Rating	Definitions
1	Status 1	Suitable for future use with some upgrade requirements
2	Status 2	Optimum position in life-cycle for strategic reinvestment
3	Status 3	Consider for major rehabilitation
	Status 4	Consider for abandonment, replacement, or disposal

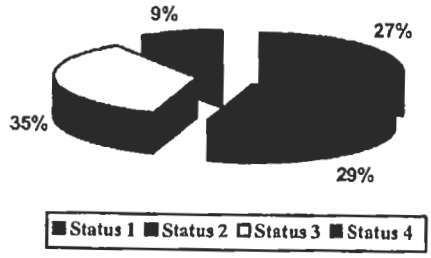


Figure C-2: Facility Survey Ratings

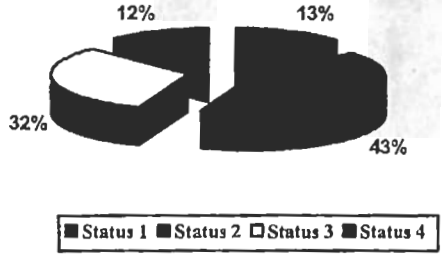
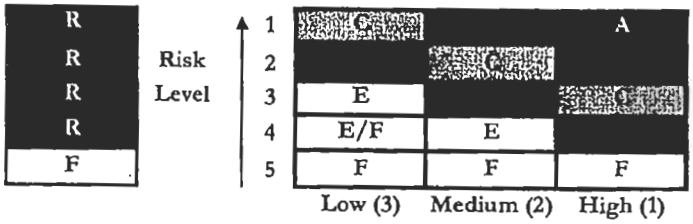


Figure C-3: Infrastructure Survey Ratings



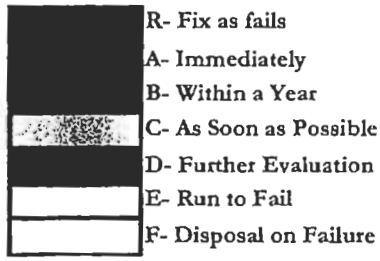


Figure C-4: Prioritization Matrix

according to a mission consequence or "risk level" as identified in Table C-7. Based on the type of issue and its impact to the program, an "impact probability" rating is determined as shown in Table C-8. Both of these ratings are used with the matrix to determine priority.

Upon prioritization, the list of assessment issues are submitted to an investment decision group that will help determine if the issue identified should proceed to a work order or to a potential project. Refer to Section 5 for the prioritization and scheduling method used to accomplish the final TYSP Project List.

FY 2002-2005 Facility and Infrastructure Assessments Reports

Assessments following the new Facility and Infrastructure Assessment Program began in FY 2002. The first complete cycle of operational facilities/ infrastructure assessments were completed in August FY 2003. A new cycle of facility assessments began in FY 2004 consisting of facilities that recently changed to operating status and the reassessment of FY 2002 mission-essential facilities. FY 2005 assessment consisted of a reassessment of FY 2002 facilities and facilities that changed operating status. This assessment also included the reassessment of the NTS water system. Assessments for FY 2006 include 86 facilities and communications infrastructure elements.

This process provides a more complete assessment of facility and infrastructure elements by addressing facility and infrastructure suitability issues in relation to their programmatic needs and by combining those results with the asset's physical condition as reported in the Condition Assessment Information System. This combined process results in a more complete assessment which recommends improvements agreed to by Program Managers, Facility Managers, and Facility Owners. The data collected during these assessments culminate in a series of information templates developed for each facility and infrastructure element; these templates summarize the overall data collected in the Facility and Infrastructure Assessment Report. A sample template is shown in Table C-9. In general, the Facilities and Infrastructure Assessment Report contributes to:

- Identifying work order items, developing, and supporting the proposal of facility and infrastructure projects, i.e., General Plant Project, Line Item project, Maintenance and Repair Project.

Table C-7: Definition of Consequence (Risk Level)

Rating Number	Category	Criteria
1	Mission Shutdown	Impact of deferral or failure will shut down a mission function; have major sponsor impact; or cause major ES&H, security, cost, employee, or community issues. May be a critical "domino" in a series of projects that would result in an inability to implement the series if not implemented immediately. Deferral would result in a future mission shutdown condition.
2	Significant Mission Delay	Impact of deferral or failure will significantly reduce ability to perform mission; may result in serious sponsor, community, or employee reaction; or serious ES&H or security issues. Deferral would result in a significant mission delay.
3	Moderate Mission Delay	Impact of deferral or failure will reduce efficiency in mission performance or increase operating costs. May result in sponsor, community, or employee concerns; or in ES&H or security issues. Reduces image and external perception.
4	Minor Mission Delay	Impact of deferral or failure will have only minor or local impact on mission performance, ES&H, security, or employee/co mmunity satisfaction. May be deferred within current mission requirements. Typically requires only repair if fails.
5	No Mission Delay	No perceivable impact of deferral or failure. No impact on mission performance, sponsor, ES&H, security, community, or employee satisfaction. Can be deferred indefinitely under current mission requirements. Generally run to failure and do not repair.

Table C-8: Institutional Impact Probability Rating

Rating Number	Category	Criteria
1	High	Institutional impact imminent; action required, immediate solution required, or needs to be submitted as a project list as soon as possible
2	Medium	Institutional impact will be near term; negative impacts are beginning now; action required in the near term
3	Low	Institutional impact timing uncertain, longer term if at all; impact limited to single organization

Table C-9: Facility and Infrastructure Assessment Report Template

29. 23-650 OCCUPATIONAL MEDICINE	YEAR BUILT: 1964	GSQFT: 30243
GENERAL	User: BN	Department: Occupational Medicine
	Asset ID #: 997002	Function: Hospital – Medical Clinics
	Mission Category: ME	Risk Level: 3
	FIMS Deferred Maintenance: $1,990.275	
CAIS CONDITION	Fair	Year of CAS Inspection: 12/17/03
FIS RATING	Status 3	Year of FIS: 11/3/03
FACILITY INFORMATION		**Description:** Concrete CMU shear wall building designed to provide medical treatment, process dosimeters, analysis of environmental restoration samples, admin support, and house information services computer equipment.
		Program Requirements: Mission essential, but replaceable; long range - unrestricted requirement.

PROJECT LIST

Scheduled

Fiscal Year	Project #	Project Name	DM %	TEC (k)	MP
2006	NTS-99-072	Replace HVAC, Bldg. 650		0.02	
2009	NTS-99-086	NTS Building 650 Modifications		1.20	

Assessment Issues

Issue/Concern	MP
Removed unused equipment in building. (oxygen system, vacuum pumps, etc.), 23-650 (3)	E
Interior Paint, 23-650 (3)	E
Upgrade Lighting, 23-650 (2)	D
Interior Replacement/Repairs, 23-650 (2)	D
Electrical Components Replacement (Life Cycle), 23-650 (1)	C

COMMENTS

Infrastructure Projects Recommendation/Comments:

Renovate (Recommend analysis for new facility versus renovation)

Fire Inspection Report:
(7/3/03) All applicable NFPA codes are in compliance. Complete checklist/report available at the NTS Fire & Rescue Department.

ES&H:
Characterized for beryllium; facility cleared by ES&H for intended use per applicable REOP

Original Signed By D. Michael Jones — *June 8, 2004*
Site and Infrastructure Planning Manager — Date

Facility Manager/Facility Owner Comments:

Stacks in rooms # 2, 3, 37, 38 potentially contaminated from previous experiments; should be removed
Exterior foam siding recently replaced.
Facility requires the following upgrades: ventilation system, exit lighting, lighting system, and interior paint
Systems not in use should be removed; vacuum pumps, oxygen supply, and vacuum system
Parking bumpers needed

Medical section of facility does not meet Medical Privacy Act Standards
Facility is being remodeled to meet current needs; requires routine maintenance Remodel completed on medical portion of facility 4-5 years ago
Sprinkler head replacement needed in labs
Planning for remodel of entry area.

Original Signed By R. Keith Kulm — *June 8, 2004*
Facility Manager/Facility Owner — Date

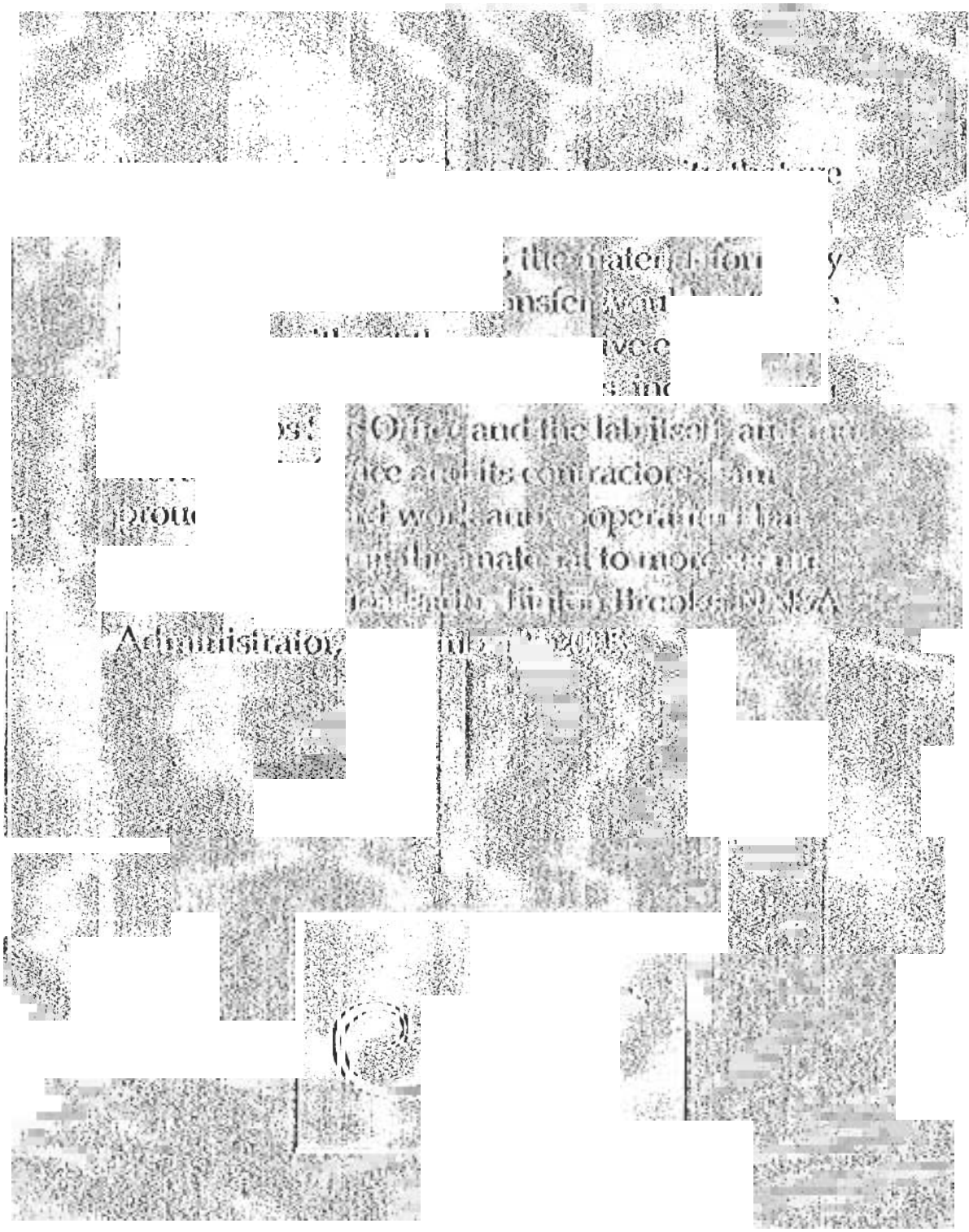
Table C-9: Facili

- Providing information to management with a comprehensive baseline evaluation of facilities and infrastructure based on physical, programmatic, operational, owner, and operator needs
- Providing NNSA/NSO and national weapons laboratories with functional, effective, efficient and up-to-date facilities and infrastructure condition information
- Prioritizing the refurbishment of mission-essential facilities
- Updating the current Facilities Information Management System

With continued project budget support, the present condition of facilities and infrastructure would be greatly improved to meet the needs of current and future programs and/or missions. As projects and maintenance actions are identified as a result of the Facility and Infrastructure Assessments process, the overall goal is to repair, upgrade, or replace facility and infrastructure so that the resultant facility and infrastructure condition breakout approaches the ideal "target condition" as identified in the TYSP.

Appendix D

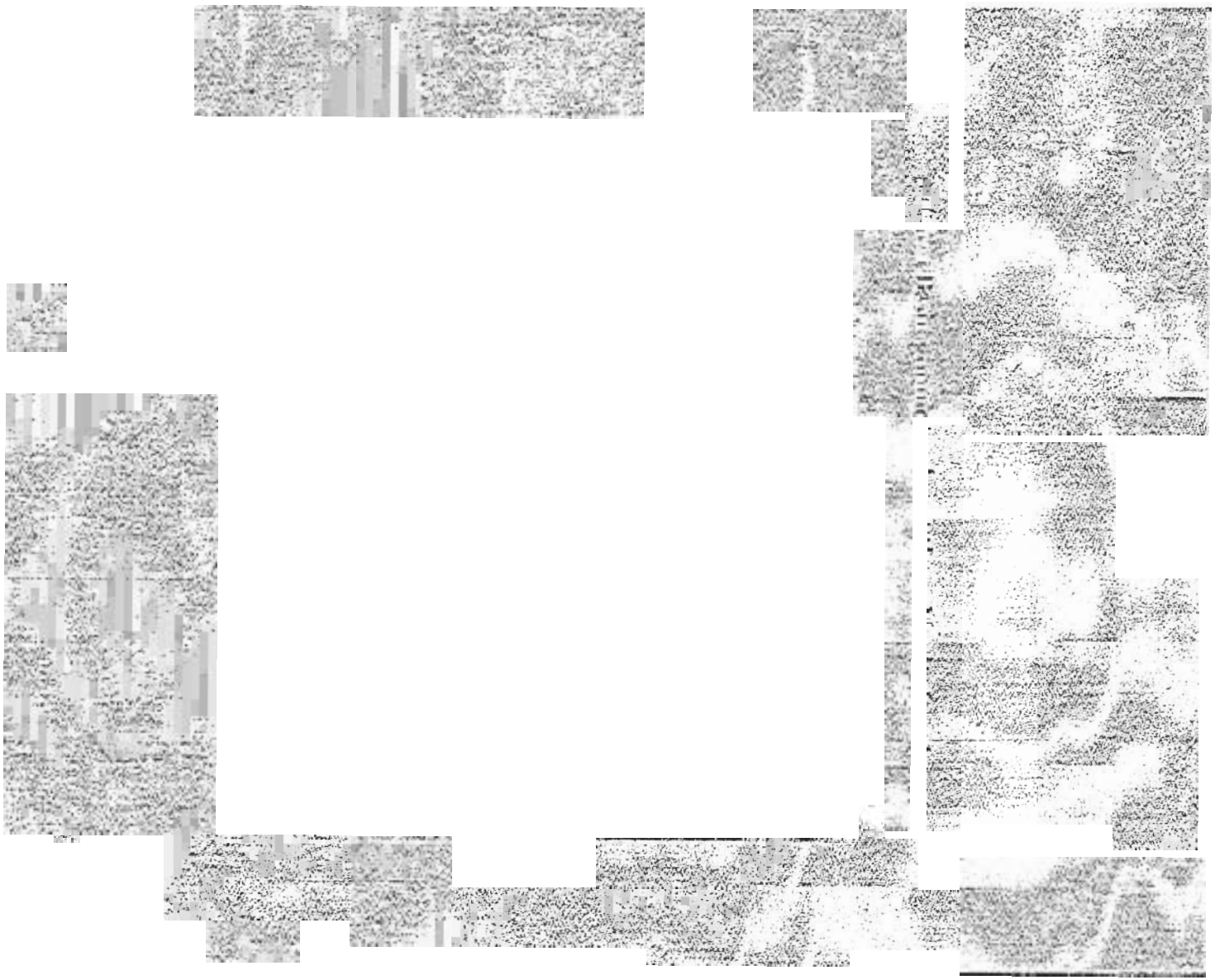
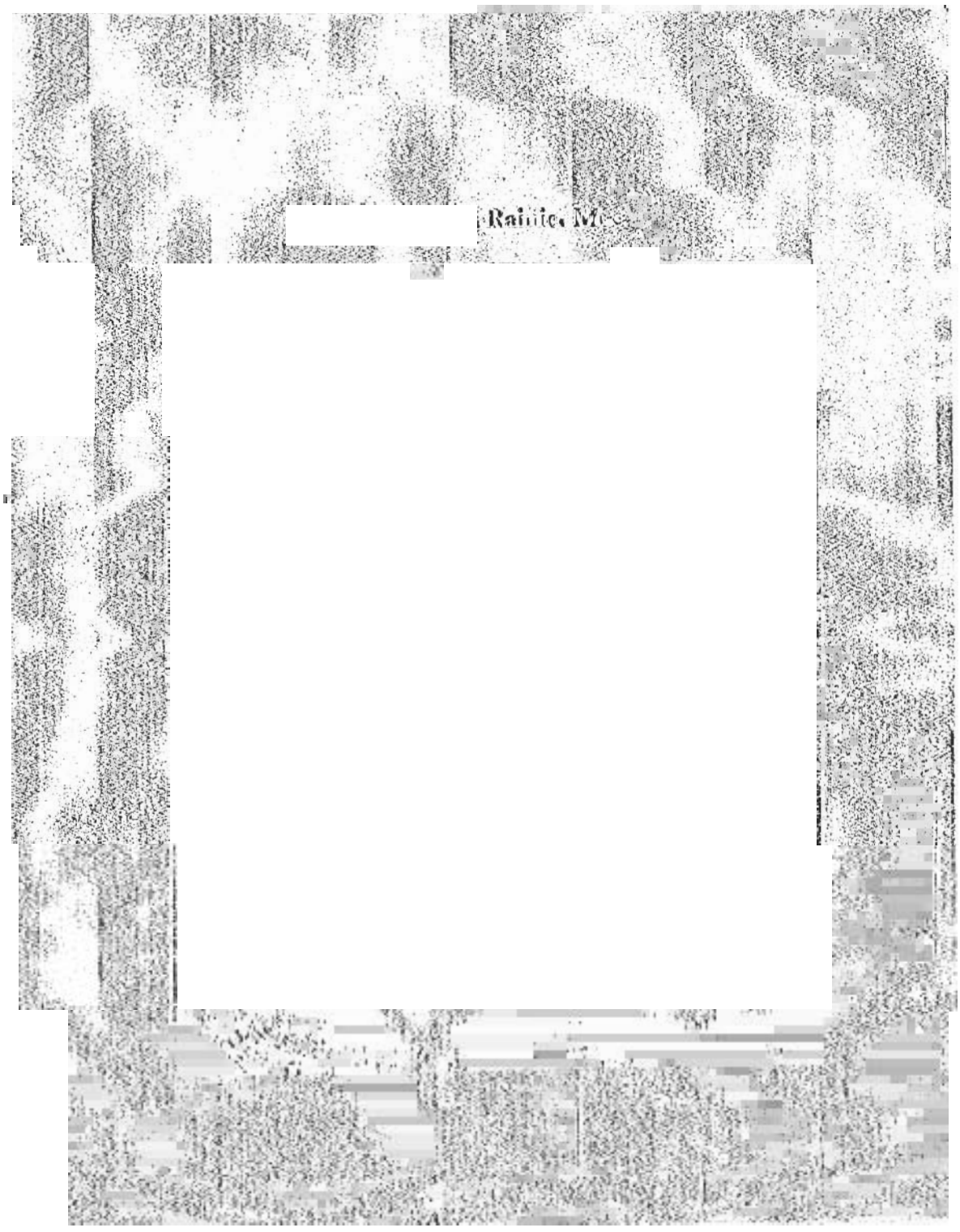
Snow on the Sugar Loaves in Area 17



Appendix D: Miscellaneous

The following is a list of information contained in this appendix:

- President's Budget FY 2006 – 2010 Integrated Construction Program Plan for NA-10, NA-50, and NA-70
- Future-Years Nuclear Security Program (FYNSP) Constrained Site Funding Profiles for Future-Years Nuclear Security Program Constrained Site Funding Profiles for Readiness in Technical Base Facilities/Operations of Facilities and Facilities and Infrastructure Recapitalization Program.

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Total
FIRP								0
S&S								0
RTBF		24,284	14,080					38,364

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