DOE/NV--1193

FY 2008 NNSA/NSO Ten-Year Site Plan

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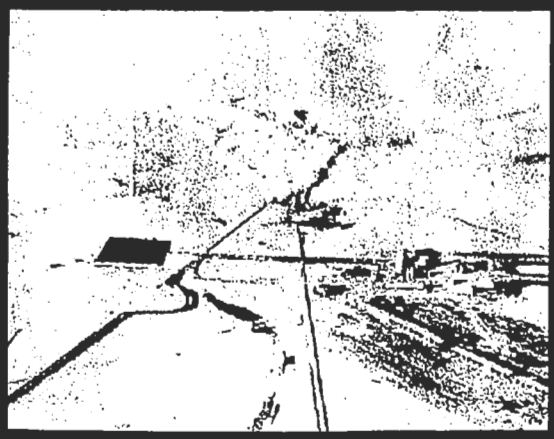
U1h Hoist House

Device Assembly Facility

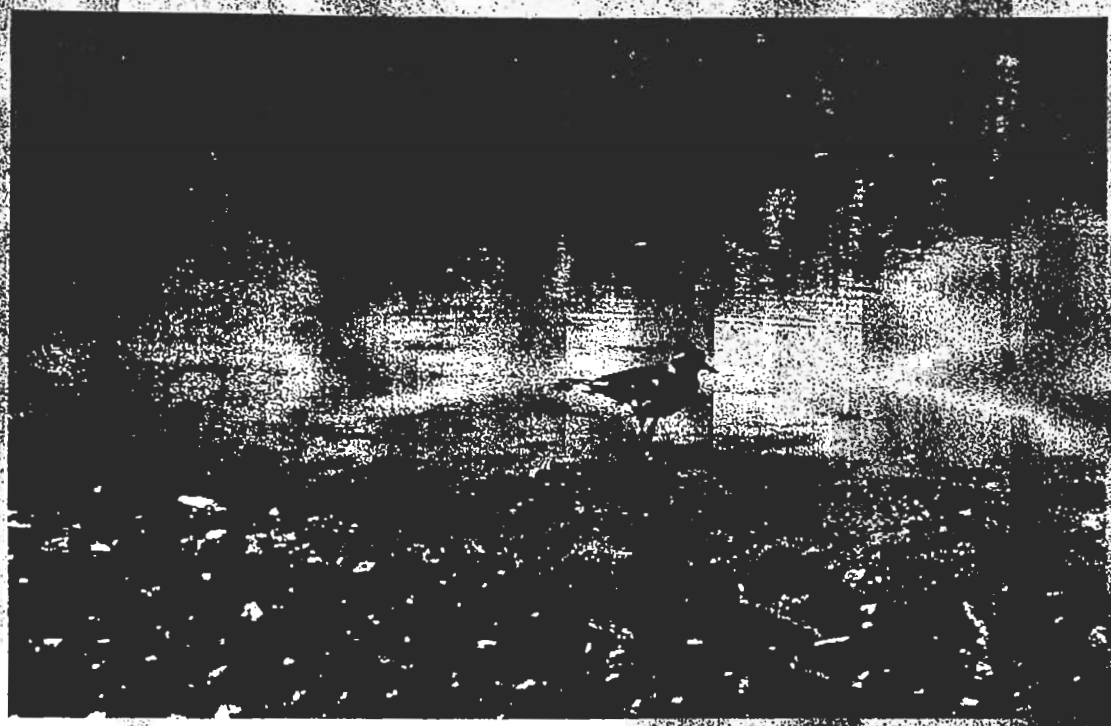


Nonproliferation Test and Evaluation Complex

View from Oak Spring Butte Looking South Over Yucca Flat at the Nevada Test Site

National Security Technologies LLC

FY 2008 NNSA/NSO Ten-Year Site Plan



A killdeer at one of the Frenchman Playa Ponds

FY 2008 NNSA/NSO
Ten-Year Site Plan

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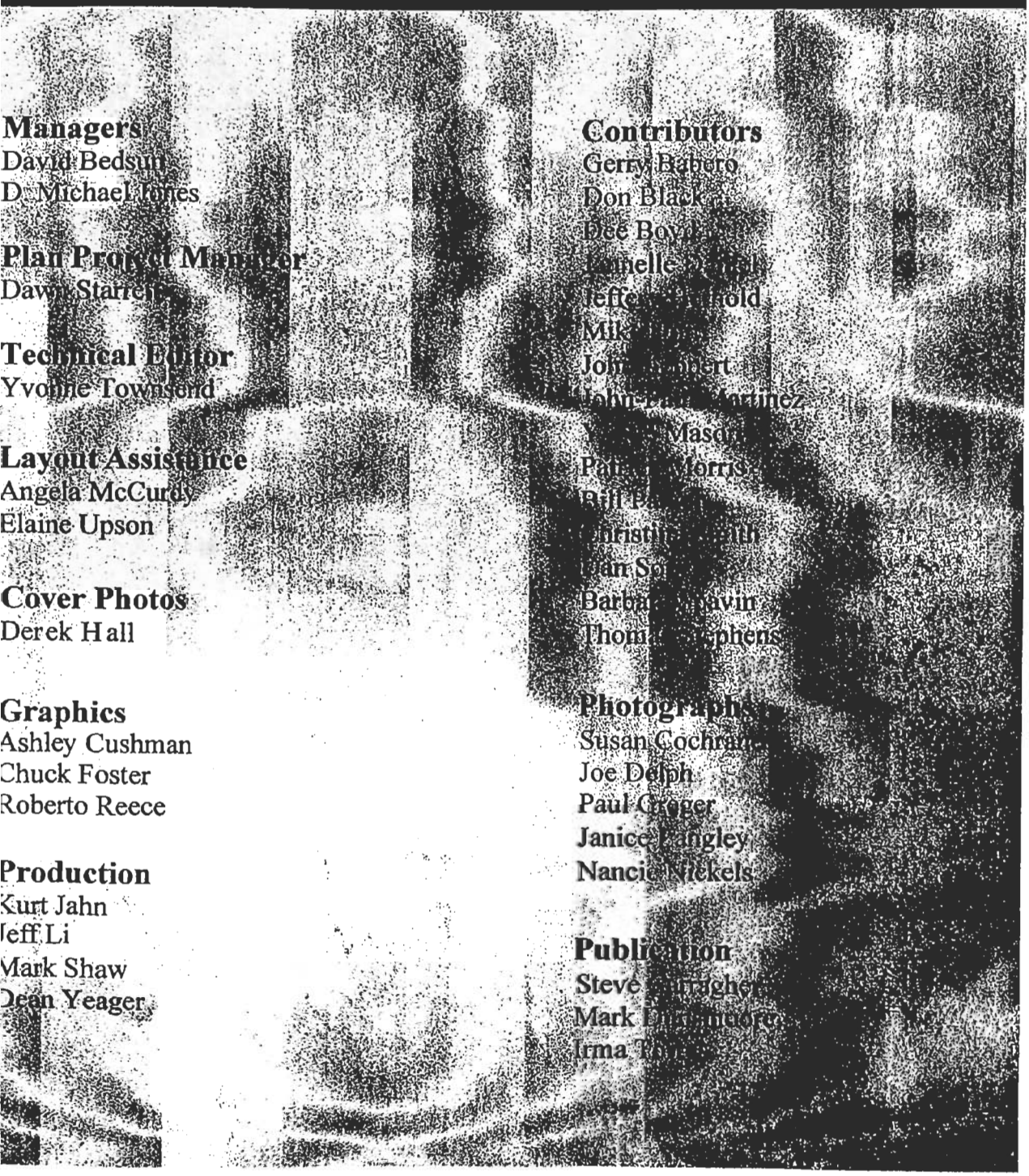
Note – This background is a photograph of a cloud formation at sunset over a well pond located on the Nevada Test Site.

Acknowledgements



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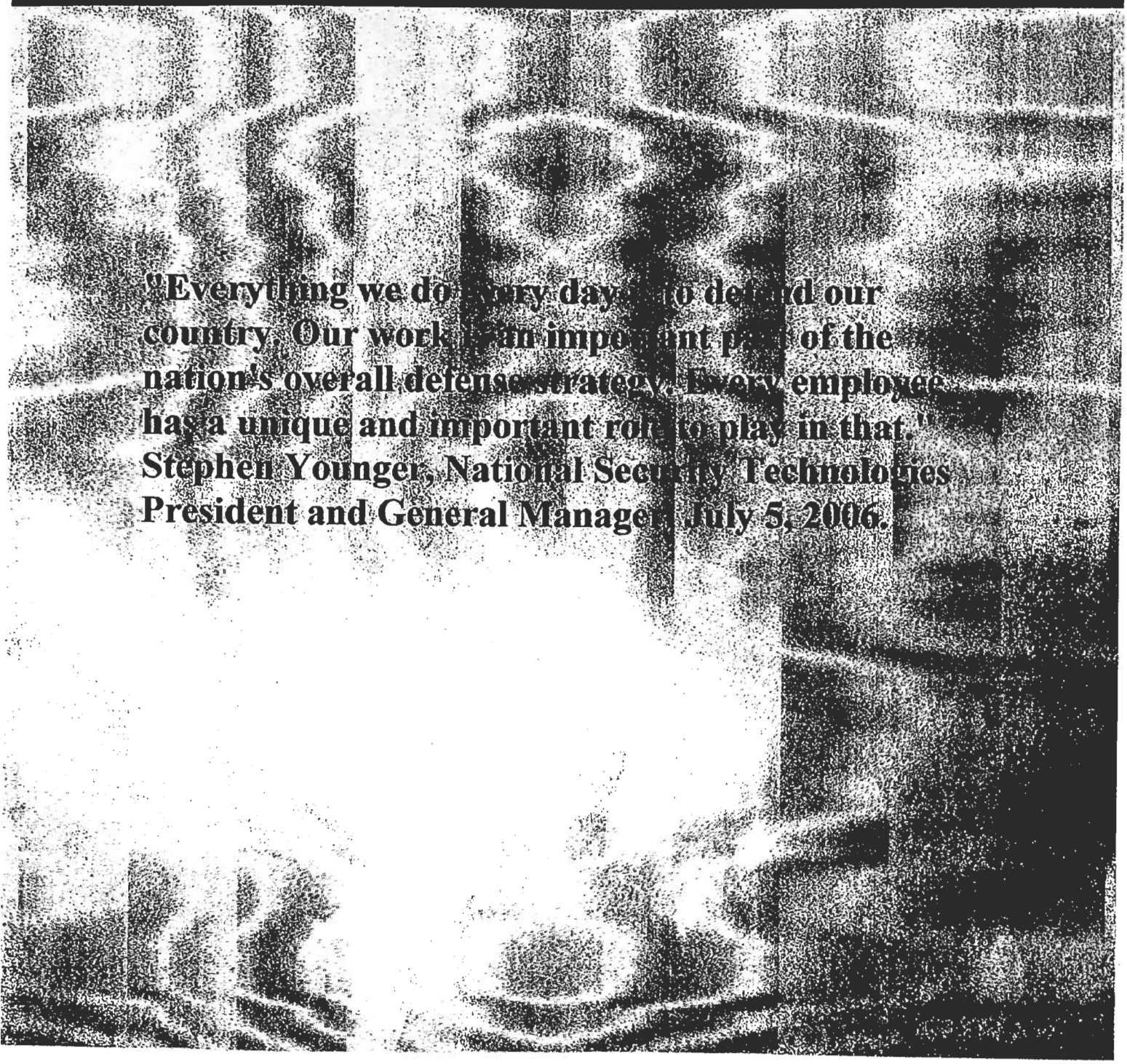
Executive Summary

View from north edge of Rainier Mesa looking [illegible]

FY 2008 NNSA/NSO
Ten-Year Site Plan



Executive Summary

Introduction

The Nevada Test Site (NTS) is a national asset for conducting high-hazard operations, testing, and training in support of the U.S. Department of Energy, National Nuclear Security Administration (NNSA), the U.S. Department of Defense, and other federal agencies. As landlord, NNSA Defense Programs Stockpile Stewardship considers the NTS and its infrastructure as an integral part of the Program that is primarily focused on achievement of milestones in Campaigns and Directed Stockpile Work, as well as ensuring that the United States can return to underground nuclear testing should the President deem it necessary. The NTS and associated activities draw together a unique team comprised of the NNSA/Nevada Site Of ce (NSO); National Security Technologies, LLC (NSTec); Lawrence Livermore National Laboratory; Los Alamos National Laboratory; Sandia National Laboratories; Wackenhut Services, Inc.; Defense Threat Reduction Agency; and Stoller-Navarro Joint Venture to support Stockpile Stewardship and related multi-program activities for the NNSA while maintaining the ability to resume underground nuclear testing. The NNSA/NSO provides the direction and oversight to execute the complex coordination in support of the mission requirements among all the organizations. This plan details that direction and oversight.

The National Weapons Laboratories are the principal implementers of the nuclear weapons programs executed for Defense Programs at the NTS as well as the critical organizations sponsoring that work. As the Management and Operating contractor, NSTec is the organization that is accountable for the successful execution of the work scope that is laid out in this plan to manage the resources, facilities, and infrastructure that make up the NTS and the other supporting sites in California, Nevada, New Mexico, and Washington, D.C. NSTec is responsible for providing much of the programmatic infrastructure, personnel, testbed, and diagnostics needed to enable successful execution of the programmatic work at the NTS.

The NTS and its seven auxiliary sites (Cheyenne Facility, Livermore Operations, Los Alamos Operations, North Las Vegas Facility, Remote Sensing Laboratory-Andrews, Remote Sensing Laboratory-Nellis, and Special Technologies Laboratory) continually strive to leverage existing assets to enhance the NTS as a Defense Programs site for weapons experimentation and nuclear test readiness. Efforts are focused on creating a sustainable future by developing a broad and varied project base that complements Stockpile Stewardship capabilities. NTS Program efforts fall under three major programs:

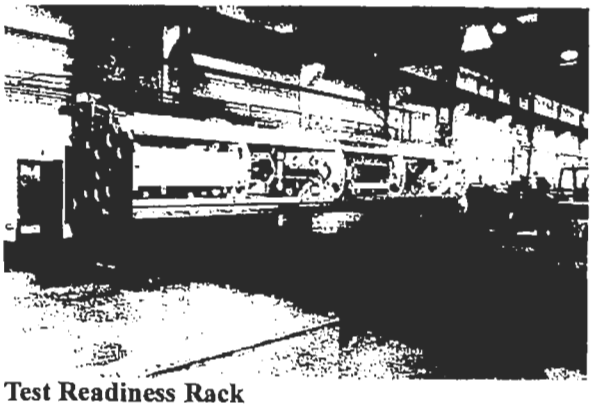
- Stockpile Stewardship
- Homeland Security and Defense Applications
- Environmental Management

The *Fiscal Year (FY) 2008 Ten-Year Site Plan (TYSP)* provides a foundation for facilities and infrastructure strategic planning in support of these programs. It also serves as the cornerstone of the initiative to restore, revitalize, and sustain the Defense Programs mission-critical facilities and infrastructure at the NTS. Speci cally, the *TYSP*: (1) 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, and campaign programmatic requirements; (2) provides a strategic plan for making operational and maintenance decisions and establishing future priorities to support the primary missions of the NTS; (3) presents a resource-constrained plan with site-speci c funding pro les that are consistent with the Future Years National Security Program; and (4) presents a longer-term vision for facility and infrastructure improvements needed to meet future technical requirements to support outyear planning activities for the Complex 2030 Plan.

The Nevada Test Site Today

A unique national resource, the NTS is a massive, remote, and secure outdoor laboratory and national high-hazard 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



Test Readiness Rack

The primary mission of the NTS falls under the Stockpile Stewardship Program. This primary mission includes conducting high-hazard experiments and 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 facilities for nuclear assemblies.

The enduring stockpile of nuclear weapons used to preserve the nation's security must be maintained as safe and reliable. To meet this requirement within the constraints on nuclear testing in agreements and treaties, the National Weapons Laboratories use special nuclear material in a series of calculations and experiments. The most dynamic of the experiments are conducted at the NTS and complement Nuclear Test Readiness by keeping personnel skills and knowledge up to date, and taking 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.

Another vital program at the NTS is the Homeland Security and Defense Applications Program. This program is a key component of NNSA's emergency response, nuclear nonproliferation, and counter terrorism technologies. Homeland Security and Defense Applications provides project management and execution support for activities in consequence management, crisis response, nonproliferation technology test and evaluation, information and communication technologies test and evaluation, and controlled releases of hazardous chemicals and biological stimulants for the purpose of hazardous materials research, development, testing, and training.

The events of September 11, 2001, underscored the need for a synergistic training program, which includes federal, state, and local organizations in an environment similar to real-world scenarios that might be encountered by emergency responders and U. S. Department of Defense personnel. One example of our response to this escalating need is the NTS's Counter Terrorism Operations Support Program, which continues to signi cantly expand weapons of mass destruction prevention and response training for the U.S. Department of Homeland Security as well as other government agencies including the U.S. Department of Defense. The Counter Terrorism Operations Support Program at the NTS serves as a leading operation in the nation responding to terrorism.

The Environmental Management Program at the NTS is separate from NNSA, but remains a part of and reports to the U.S. Department of Energy. Activities under this program include legacy environmental cleanup under the *Federal Facility Agreement and Consent Order* with the state of Nevada, ground water radionuclide migration studies associated with underground nuclear testing, environmental compliance, and environmental waste functions, which support the U.S. Department of Energy complex and the U.S. Department

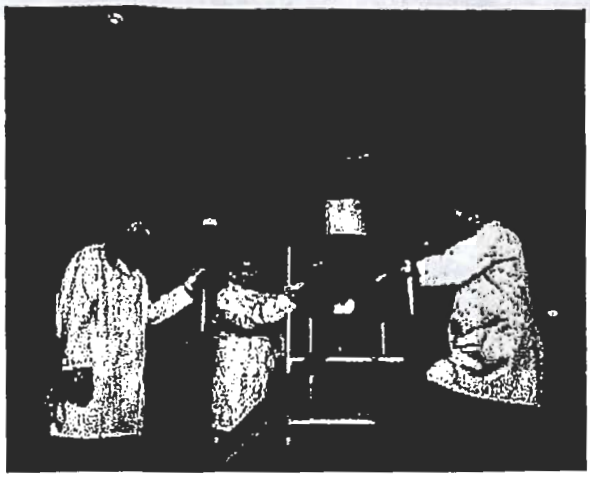
of Defense through radioactive waste disposal, handling, and storage. Waste activities are static and expected to decline over the next ve years.

Work for Others activities at the NTS (e.g., U.S. Department of Defense and U.S. Department of Homeland Security programs, etc.) have expanded signi cantly since September 11, 2001, to the point that further growth may impact the existing facility and infrastructure limits. Power and water resources are improving due to Facilities and Infrastructure Recapitalization Program projects completed in FY 2005 and FY 2006. However, the impacts of Work for Others may require further improvements to the mission dependent, not critical "backbone" and speci c infrastructure systems. These improvements will be primarily borne by the Work for Others customer. Although Work for Others funding has increased, the total impact to infrastructure capacity and capabilities at the NTS is being closely evaluated through master planning and con guration management.

Work for Others customers are direct funded. These customers help offset base costs, such as electric power and other indirect recovery pools that would otherwise be borne solely by the Stockpile Stewardship Program. As Work for Others customers build permanent facilities on the NTS, they will be required to include costs for "offsite" improvements, such as NTS water, sewer, power, roads, and communication systems upgrades, to ensure basic infrastructure is not impacted.

There are many synergies between Work for Others and the Stockpile Stewardship Program. The Defense Threat Reduction Agency is the oldest Work for Others customer, with a history dating back to atmospheric nuclear testing on the NTS, and provides valuable test readiness experience and resources. Other U.S. Department of Defense Work for Others customers share the increasing inventory of special nuclear materials at the NTS to combat terrorism, such as the U. S. Customs and Border Protection entry portal screening stations. Additionally, training venues offer improved security and response capability for special nuclear materials at the NTS.

Facilities and Infrastructure



Workers in the Criticality Experiment Facility

NTS facilities and infrastructure support mission-critical activities related to Readiness in Technical Base and Facilities, Directed Stockpile Work, and Stockpile Stewardship Campaigns, as well as other activities for mission support and tenant facilities. Current high-hazard operations for the NNSA are carried out in a mix of expendable and permanent facilities. These facilities include the U1a underground experiment complex, the Joint Actinide Shock Physics Experimental Research gas gun facility, the Atlas Pulsed-Power Facility, the Nonproliferation Test and Evaluation Complex, and the Device Assembly Facility. Based on current programmatic requirements, each of these facilities is expected to operate into the foreseeable future. Key support facilities for collecting, categorizing, handling, storing, and disposing of radioactive waste are located in Areas 3 and 5.

Currently, there are 542 NNSA/NSO buildings and trailers that total more than 3,308,153 gross square feet at the NTS and auxiliary sites listed in the Facility Information Management System (as of FY 2006 end of scal year accounting). Of this, 266 buildings and facilities totaling 1,390,674 square feet are over 30 years old. The NNSA/NSO mission critical and mission dependent, not critical facilities and infrastructure require on-going investment, i.e., Readiness in Technical Base and Facilities and Facilities and Infrastructure Recapitalization Program funding, to meet the NNSA Headquarters requirement of an annual maintenance 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.

To prioritize our facilities and infrastructure projects that will support mission requirements, the land area of the NTS has been categorized into mission critical, mission dependent, not critical and not mission dependent land use zones (see ***Figure 4-4***). The mission critical "corridor" is about one-third the size of the NTS and contains all of the current Stockpile Stewardship missions and can accommodate additional mission growth. By consolidating our mission critical missions into a smaller land area, we have reduced the size of the power, roads, and water systems necessary to support the site.

The key support areas within the Mission Critical Corridor are Mercury and the Control Point complex, about 30 miles north of Mercury. Both areas provide of ce space and emergency services. Mercury also provides housing, with food and lodging. Due to the growth in Homeland Security and Defense Applications and other programs, both areas have a critical need for new and/or upgraded facilities. Existing Mercury of ce space is currently near 100 percent occupancy, and the need for additional facilities is expected. To avoid converting dormitories or other buildings to of ces, and to meet this critical need, the NTS is developing a Critical Decision (CD)-0 package for the recon guration of Mercury.

The Nevada Test Site Future State

The *2005 NNSA Strategic Planning Guidance for Fiscal Years 2007-2011* de nes three goals:

- Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. Nuclear Weapons Stockpile.
- Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.
- Provide the U.S. Navy with safe militarily effective nuclear propulsion plants, and ensure their continued safe and reliable operation.

The focus of the NTS for the next ten years is to provide, in a secure environment, unmatched support for high-risk, high-hazard, complex experimental and operational activities that are required to support the rst two goals. Defense Programs is expected to continue as the single largest supporter of the NTS infrastructure. Other missions at the NTS involve the U.S. Department of Homeland Security and U.S. Department of Defense.

Sustaining viable facilities and infrastructure at the NTS not only facilitates achieving these goals, but also provides the foundation for accomplishing current and future primary NTS missions. In that regard, the NTS of the future will achieve the additional NNSA Corporate goals of Facility and Infrastructure sustainment, recapitalization, and deferred maintenance reduction to include:

- Establish and fund an integrated maintenance program that meets NNSA Headquarters' requirement to maintain facilities and infrastructure at 2 to 4 percent of replacement plant value annually.
- Aggressively reduce deferred maintenance for all mission critical and mission dependent, not critical facilities and infrastructure to within industry standards by the end of FY 2009.

Emergency Operations Center U1a Exercise

- Return facility conditions, for mission critical and mission dependent, not critical facilities and infrastructure, to an assessment level of good to excellent (deferred maintenance/replacement plant value less than 5 percent) by the end of FY 2009.
- Institutionalize responsible and accountable facility management processes, including budgetary processes, so that the condition of NNSA facilities and infrastructure is maintained equal to or better than industry standards by the end of FY 2009.
- Plan for and provide infrastructure to meet the evolving missions supported by the NTS.
- Support the U.S. Department of Energy's preparation of a supplement to the *Stockpile Stewardship and Management Programmatic Environmental Impact Statement - Complex 2030.*

Complex 2030 is evolving as national needs change, and the transformation of the nuclear weapons complex continues by implementing NNSA's vision of the complex as it would exist in the year 2030. The role that the NTS will play as Complex 2030 comes to realization is uncertain at this juncture. The future missions and the con guration of the future weapons complex have yet to be determined. The following strategies are within the capabilities of the NTS for Complex 2030:

- Support stockpile commitments of a safe, secure, reliable deterrent and maintain without interruption the essential nuclear capabilities needed for an uncertain global future, including transforming the stockpile without the resumption of underground nuclear tests and sustaining readiness to conduct underground tests at 24 months.
- Transform the NTS to enhance the responsiveness of design, certi cation, and production components as part of a fully integrated and interdependent nuclear weapons complex that is both modern and cost-effective.
- Consider the Device Assembly Facility to function as an alternate facility for assembly/ disassembly operations.
- Operate Joint Actinide Shock Physics Experimenal Research and U1a as consolidated, effective, national, shared, major science assets.

Sidewinder Weapons of Mass Destruction Exercise at NTS

- Prepare the NTS to serve as the primary site for large-scale hydrotesting.
- Encourage and incorporate stronger Work for Others participation in key mission areas and in science and technology plans.
- Develop an organizational structure that drives the integration of mission and operations to balance risk and cost.

Achieving all of these goals will allow the NNSA/ NSO to continue to provide unequaled support to its defense and national security customer's programs. The major programmatic activities anticipated for the future are outgrowths of the current activities and technological advances. Expected future activities include: subcritical and other special nuclear material experiments in U1a and in vertical con gurations; a robust dynamic materials experiment program at the Joint Actinide Shock Physics Experimental Research Facility, Atlas Pulsed-Power Facility, the Big Explosives Experimental Facility and Baker Site; Criticality Experiments Facility operations at the Device Assembly Facility; numerous dynamic high-hazard operations; development of advanced diagnostic systems; support to the National Ignition Facility target area operations and experimental diagnostic elding and calibration; diagnostics elding on dynamic experiments; counter terrorism and rst responder training at the Counter Terrorism Operations venues; and weapons incident response. These activities will be conducted while moving to and then maintaining the nuclear test readiness at 24 months.

In FY 2006, NNSA Headquarters shifted the Nuclear Test Readiness posture from 18 to 24 months. The $5 million cut from an expected Readiness and technical Base Facilities budget of $25 million necessitated the longer readiness posture while reducing the following scope:

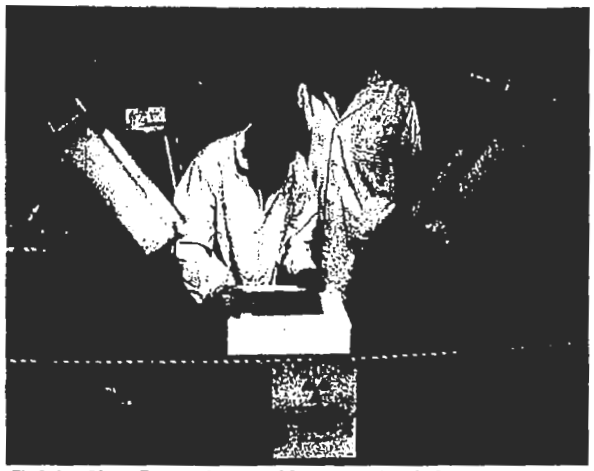
- Eliminated funding for reestablishing Captain/ Threx Experiment production capability.
- Delayed the nuclear explosive safety studies for device transfer insertion, emplacement, stemming, arming, and ring operations, which will now be done within the 24-month posture.
- Reduced equipment tracking of maintenance at the NTS.

In FY 2006, the U.S. Department of Homeland Security began construction associated with a new security mission for the NTS. The mission will fund the preparation and construction of four training venues including a sensor test track, an active interrogation facility, a paved test area, and a vehicle choke point. A test support building will be part of the construction. The structures will be used to train agents to detect nuclear materials being smuggled into this country using powerful sensing equipment as part of border protection. Details of the new mission are contained in the *Environmental Assessment Statement for Radiological Nuclear Countermeasures Test and Evaluation Complex*, issued August 2004. This effort underscores an expanding homeland security role for the NTS beyond its historical mission of developing and evaluating the nuclear weapons stockpile.

In addition to new missions and activities, the NTS will experience signi cant changes in facility square footage. The addition of square footage from construction of two new re stations (30,960 square feet) by FY 2008 and the Radiological/Nuclear Countermeasures Test and Evaluation Complex (11,500 square feet) by the end of FY 2007 totals 42,460 gross square feet. The total space reduction between FY 2002 and FY 2006 is 568,144 gross square feet. This does not include 200,000 gross square feet of building space which was transferred to Sandia National Laboratories in 2003. Demolition of facilities from FY 2007 through FY 2010 is projected to reduce the footprint by an additional 34,043 gross square feet.

Achieving the Vision

Facilities and Infrastructure Projects



Criticality Experiment Facility Activities

To ensure that the NTS will continue to meet current and future multi-program needs, facilities and infrastructure must remain cost effective and suf ciently exible to accept new experiments and/or missions over the next ten years. Focusing on experimental, support, and training activities in permanent facilities, within the Mission Critical Corridor on the NTS (see ***Figure 4-4***), provides NSTec with the opportunity to plan infrastructure improvements within the funding available in a holistic manner based on the programmatic needs, facility condition, and funding available.

All indications are that Readiness in Technical Base and Facilities funding will increase in FY 2009 and beyond. The addition of new missions will expand the indirect support base, but the loss of Facilities and Infrastructure Recapitalization Program funding in 2013 must be offset by additional funding and/ or site-generated revenue to ensure facilities and infrastructure are maintained at the industry standard of 2 to 4 percent of replacement plant value.

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 had several recommendations for consolidation of the Nuclear Weapons Complex. These were echoed in the NNSA Administrator

Thomas D'Agostino's brie ng to Congress in April 2006. The NTS is one site that possesses all the necessary characteristics of remoteness, security, safety, size, and access to support such consolidation. The transfer of the Los Alamos Criticality Experiments Facility operations to the Device Assembly Facility is one indicator of this consolidation. The in ux of new Readiness and Technical Base 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 is dependent on the Record of Decision in the *Complex 2030 Programmatic Environmental Impact Statement.*

Project Prioritization

In preparation to achieve the Complex 2030 vision, the Facilities and Infrastructure Recapitalization Program projects scheduled for FY 2007 through FY 2011 are being reprioritized to maximize support of missions in the Mission Critical Corridor. Deferred maintenance projects for mission critical facilities and infrastructure have the highest priority, followed by deferred maintenance projects on mission dependent, not critical facilities and infrastructure, then deferred maintenance projects on not mission dependent facilities and infrastructure. This will be followed by non-deferred maintenance projects on mission critical facilities and infrastructure and so on.

To aid project prioritization, NSO uses NSTec's Facility and Infrastructure Recapitalization Rating priority matrix as an added indicator of a project's importance. NSTec has also established a multilevel project prioritization process, which includes the Facilities and Infrastructure Recapitalization rating methodology as the nal step in prioritizing a project's ranking in the overall project list.

The Facilities and Infrastructure Recapitalization Program was projected to provide NNSA/NSO with over $220 million through FY 2013 to address non-Readiness and Technical Base Facilities infrastructure and facility issues. Between 2003 and 2007, various cuts have reduced this amount to $190 million. The majority of the effort will be devoted to recapitalization projects in the Mission Critical Corridor such as:

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

In addition to the reprioritization of projects, NSTec is prioritizing maintenance work for mission critical and mission dependent, not critical facilities and infrastructure ahead of non-mission dependent facilities and infrastructure.

Maintenance Management

NTS Road Maintenance Activities

NSTec 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 ve-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.

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 have shown that increasing preventative maintenance increases useful maintenance and reduces overall maintenance cost.

- NSTec is leading the way in the Nuclear Weapons Complex by developing a data warehouse for facilities software into a currently complex system of various software platforms, i.e., nancial 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. NSTec 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 signi cant 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 ef cient 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, NSTec developed a methodology to provide more accurate, complete assessments for all infrastructure and facilities. The rst full cycle of facility and infrastructure assessments conducted by certi ed International Code Council Inspectors was completed in 2006.

Overall, the new condition assessment process enables management to improve reinvestment decisions and to identify the current physical de ciencies 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 or decommissioned.

Excess Facilities Disposal Program

Demolition of Building 06-607

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 has been exceeded. Since 2002 until end of FY 2006, 225 buildings and 568,021 gross

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square feet have been disposed. In addition, 17 buildings totalling 25,950 gross square feet have been identi ed as candidates for disposal. By FY 2009, NSTec will have completed disposal of all uncontaminated facilities that qualify for disposal under the Facilities and Infrastructure Recapitalization Program.

Specific Issues of Concern

Due to Maintenance Reinvestment, the Facilities and Infrastructure Recapitalization Program, and Line Item funding, the coordinated effort to infuse funding to resolve the deferred maintenance backlog for mission-critical facilities and infrastructure is gradually improving. However, the NTS's aging facilities and infrastructure, coupled with NSTec's plan and the need to provide a holistic approach to meet the national test needs, demand addressing the root cause to the problem of deferred maintenance growth. While we are meeting the requirements of completing planned maintenance in the optimum year of performance (minimum of 2 percent of replacement plant value), deferred maintenance continues to grow by de ciencies identi ed during Condition Assessment Survey inspections. Deferred maintenance reduction by Facilities and Infrastructure Recapitalization Program funding has been greater than anticipated and has reduced deferred maintenance growth. Without increased support, the tremendous gains being made by the Facilities and Infrastructure Recapitalization Program that will end in FY 2013 will not be sustainable as the annual burden of deferred maintenance continues to grow once again.

Highlight

The subcritical experiment, called Unicorn, was successfully conducted at the NTS in August 2006 by Los Alamos National Laboratory. It was the nation's 23rd such experiment since the subcritical program was launched in 1997.

Once Unicorn arrived at the site, it was loaded into a rack which was lowered into the bottom of an existing hole approximately 620 feet deep. During the experiment, cables snaked to the assembly and experiment diagnostics to re key data signals back to the assembly. In addition to providing important information for stockpile stewardship, the Unicorn subcritical experiment exercised key NTS capabilities not otherwise witnessed in experiments carried out previously at the U1a complex.

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Appendices

Figures

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Acronyms

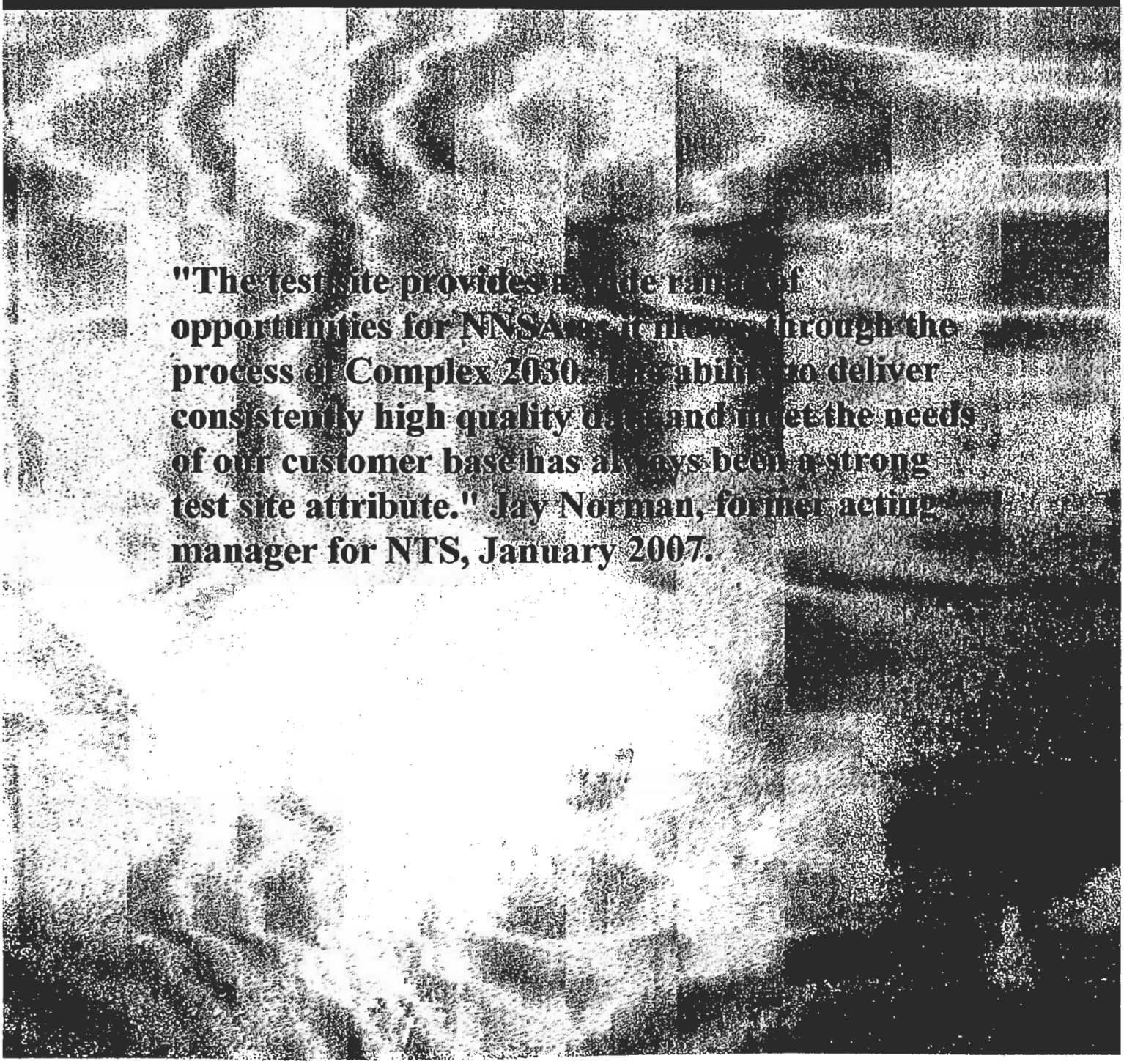
AUI	Asset Utilization Index
AMP	Annual Maintenance Plan
BEEF	Big Explosives Experimental Facility
CAIS	Condition Assessment Information System
CAU	Corrective Action Unit
CD	Critical Decision
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFO	Chief Financial Of cer
CP	Control Point
CPL	Comprehensive Project List
DAF	Device Assembly Facility
DBT	design basis threat
DHS	U.S. Department of Homeland Security
DM	deferred maintenance
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DP	Defense Program
DPF	Dense Plasma Focus
DTRA	Defense Threat Reduction Agency
ES&H	Environment, Safety, and Health
FCI	Facility Condition Index
FIMS	Facility Information Management System
FEIM	Facilities Engineering Infrastructure Management
FIRP	Facilities and Infrastructure Recapitalization Program
FIRRS	Facility and Infrastructure Recapitalization Rating Score
FY	scal year
FYNSP	Future-Years Nuclear Security Program
GIS	Geographic Information System
GPP	General Plant Projects
GSF	gross square footage
HE	High Explosives
HOTube	High Output Tube
HQ	Headquarters
HVAC	heating, ventilation, and air conditioning
IGPP	Institutional General Plant Project
JASPER	Joint Actinide Shock Physics Experimental Research
LACEF	Los Alamos Critical Experiments Facility

LAN	Local Area Network
LANL	Los Alamos National Laboratory
LI	Capital Line Item Project
LLNL	Lawrence Livermore National Laboratory
MOU	Memorandum of Understanding
MTE	major technical effort
NEPA	National Environmental Policy Act
NLV	North Las Vegas
NNSA	National Nuclear Security Administration
NSF	Nevada Support Facility
NSO	Nevada Site Of ce
NSTec	National Security Technologies, LLC
NTS	Nevada Test Site
OP	Organizational Procedure
OPC	Other Project Costs
PE&D	Project Engineering & Design
PIF	Project Information Form
PRF	Project Request Form
Rad/NucCTEC	Radiological/Nuclear Counter-Measures Test and Evaluation Complex
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
S&S	Safeguards and Security
SNL	Sandia National Laboratories
SSP	Site Speci c Plan
T&E	Test and Evaluation
THREX	Threshold Experiment
TPC	Total Project Cost
TRU	Transuranic
TYSP	Ten-Year Site Plan
UAV	Unmanned Aerial Vehicle
U.S.	United States
WSI	Wackenhut Services, Inc.
WFO	Work for Others
YMP	Yucca Mountain Project

Introduction

Mule deer buck at Camp 17 pond

FY 2008 NNSA/NSO Ten-Year Site Plan



"The test site provides a wide range of opportunities for NNSA missions through the process of Complex 2030. The ability to deliver consistently high quality data and meet the needs of our customer base has always been a strong test site attribute." Jay Norman, former acting manager for NTS, January 2007.

1.0 Introduction

1.1 Overview

The U.S. Department of Energy, National Nuclear Security Administration Nevada Site Of ce (NNSA/NSO) directs the management and operation of the multiprogram Nevada Test Site (NTS) and its auxiliary sites across the nation. Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Sandia National Laboratories act as the principal implementers of the nuclear weapon programs executed for Defense Programs at the NTS and are also the critical organizations that sponsor that work. NNSA/NSO provides direction and oversight for National Security Technologies, LLC (NSTec), the Management and Operating contractor, who is accountable for the successful execution of the work scope outlined in this plan to manage the resources, facilities, and infrastructure that make up the sites in Nevada, California, New Mexico, and Washington, D.C. NSTec is also responsible for providing much of the programmatic infrastructure, personnel, testbed, and diagnostics needed to enable successful execution of the programmatic work conducted by the National Weapons Laboratories to aid the NNSA/NSO in realizing the vision de ned in the *NNSA Strategic Plan* (U.S. Department of Energy [DOE]/NA--0010).

The Nevada Test Site is a unique national asset for safely conducting high-hazard operations, testing, and training in support of NNSA, U.S. Department of Defense, and other federal agencies. The NTS is an integral part of the Stockpile Stewardship Program and provides the U.S. Government with the capability to return to underground nuclear testing should the President deem it necessary.

Sustaining viable facilities and infrastructure is critical in achieving this vision and provides the foundation for accomplishing NNSA/NSO's primary mission to support Stockpile Stewardship and related multi-program activities for the NNSA while maintaining the ability to resume underground nuclear testing. To ensure that NNSA/NSO will meet current and future multi-program needs, facilities and infrastructure at the NTS and its auxiliary sites must remain cost effective and suf ciently exible to accept new experiments and/or missions. The auxiliary sites do not require maintenance of utility infrastructure, i.e., roads, power, and water, as those services are provided by the community in which they reside. However, due to remoteness and size, the NTS must maintain its own utility infrastructure.

Chapter Overview

- Discusses foundation upon which the NNSA/NSO long-range facilities and infrastructure process is built
- Details assumptions about anticipated use, policies, regulations, and mandates that may affect operations over the next ten years
- Presents current situation
- Lists changes to this plan from last year

Maintaining the aging facilities and infrastructure of the NTS grows increasingly dif cult as maintenance expenses continue to increase. Although the preventive maintenance program at the NTS is making strides, limits on available funding have forced NSTec to defer end-of-life-cycle replacements of most facilities, including mission-critical facilities. Resolved to reverse this trend, NSTec implemented a Facility and Infrastructure Assessment Program in accordance with DOE Order 430.1B, *Real Property Asset Management*. Through this program, three distinctive data points are obtained: 1) current, detailed physical condition of facilities and infrastructure; 2) a basis for current or continued use; and 3) a de nitive documentation of work required to reestablish and maintain the facility in a good or better condition. This information, in turn, enables management to improve reinvestment decisions. This information, in addition to adequate funding, will enable NSTec 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 ef cient utilization of existing facilities and infrastructure becomes essential. To meet this challenge, NSO Assistant Manager for Site Operations developed 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. Infrastructure Management Plans completed in FY 2003 have been updated to the FY 2007 Infrastructure Master Plan which provides 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 Comprehensive Project List, Readiness in Technical Base and Facilities Site Execution Plan, Infrastructure Master Plan, 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 by Readiness in Technical Base and Facilities in support of 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 NSTec (see Appendix A, Attachment A-4). The TYSP is also used by NNSA to support budget and resource decision-making, including obtaining support from Congress and the Of ce of Management and Budget Evaluation.

The *FY 2008 TYSP* supports the FY 2008-2012 Planning, Programming, Budgeting, and Evaluation cycle and covers the FY 2008-2017 time frame. It is based on information available from close of FY 2006 accounting. This document provides a resource-constrained plan with site-speci c funding pro les 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 2008 TYSP* is based on *NNSA TYSP Guidance* (December 2006). In accordance with the guidance, Chapter 1 provides an overview of how the planning process has evolved for NTS's long-range facilities and infrastructure upon which the development of the *TYSP* is built.

Repairing the Backbone at Hill 200

- Suf cient potable water will be available to support operations.
- Suf cient non-potable water will be available for custodial, mining, drilling, and construction.
- The state of Nevada will certify the public water supply and distribution systems on the NTS.
- The land in undeveloped mountainous areas will remain fallow.
- The annual infrastructure assessments will identify and validate deferred maintenance requirements and excess facility candidates.
- The condition of operational facilities will be assessed on a three-year cycle. Facilities in operational standby status will be assessed on a ve-year cycle. Infrastructure will be assessed on a ve-year cycle.
- Disposition of facilities will be scheduled once it has been determined that the facility will no longer be used to support the mission. Buildings typically exceed their design life and run to fail prior to disposition.
- Excess facility disposition data have been included for FY 2002 through FY 2009.

1.2.2 Programmatic Assumptions

- NNSA Defense Programs will continue as landlord of the NTS. No actions will be taken and no projects will be planned or executed that preclude or impede the continued use of the site by the Stockpile Stewardship Program, up to and including resuming underground nuclear weapons testing. The NNSA will maintain and enhance facilities and infrastructure to meet the needs of its programs. The NTS will play a large role in the Secretary of Energy Advisory Board's responsive infrastructure vision for FY 2030.
- NNSA/NSO has government, laboratory, and contractor personnel located at various sites. While a small group of NSO personnel provide NNSA oversight, the greater part of the laboratory personnel are managed and reported through each laboratory's personnel function. The majority of personnel at NNSA/NSO's sites are NSTec personnel. NSTec provides technical, scienti c, project management, and labor support via associated administrative and management personnel.

  Hiring and retaining the unique blend of personnel required to support the various laboratories' technical and construction requirements and manage the facilities and infrastructure systems across an approximate 1,375 square-mile site are challenging and dif cult tasks. Compounding these tasks are the recent world events that have increased the need for Counter Terrorism Operations Support requirements at the NTS. The abrupt in ux of requirements and personnel in support of this program has increased the complexity of NSTec's workforce pro le and increased the need for facilities to house personnel. Projects like the Criticality Experiments Facility and the Radiological/Nuclear Counter-Measures Test Evaluation Complex are expected to increase personnel growth by 1 percent per year for a total of 10 percent.

  Voluntary turnover and retirements are both strongly in uenced by factors outside NSTec, such as the job market, the economy, and the stock market's performance as it relates to 401(k) accounts. Over the next ten years, the aging workforce at NSTec will be replaced as many experienced personnel retire and as the workforce pro le changes to meet the needs of the programs. This too will create a signi cant change from the current workforce pro le.
- The Stockpile Stewardship Program will experience a down turn in the near term from its present level with some form of ongoing

Lower Angel Peak Communication Site

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 also included to further illustrate the points presented in this chapter.

Chapter 3 de nes 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 NSTec'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 scal 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, identi cation 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.

Finally, Chapter 5 provides a discussion of the forecast for facilities and infrastructure projects and activities, and the associated cost pro le 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*.

Unicorn Centaur Crane

1.2.1 Planning Assumptions

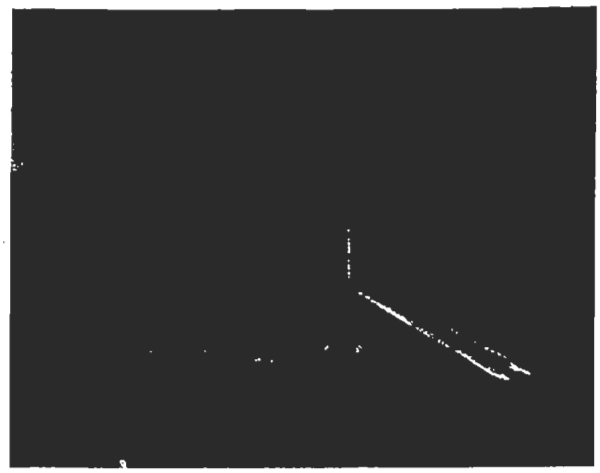
- Institutional control of the NTS will continue inde nitely. Federal control of the site is considered an obligation of the federal government and will be maintained. Offsite subsurface restrictions (institutional control) will be maintained to prevent access to radioactive contamination or contaminated 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.
- The capability to restart underground nuclear testing will be maintained at 24 months.
- Facilities, infrastructure, and equipment will be maintained to the level necessary to support the resumption of underground nuclear testing on the NTS, if directed by the President.
- Mission-critical facilities and infrastructure will be maintained in good or better condition.
- Proposed activities at the NTS will undergo an appropriate level of analysis and documentation pursuant to *National Environmental Policy Act* and will comply with all applicable laws and regulations for protection of the environment.
- Suf cient electrical power will be available.

subcritical and/or other special nuclear material experimentation to support Stockpile Stewardship Project plans and to maintain the technical skills of the personnel responsible for design, testing, and diagnostics.

- Infrastructure maintenance and upgrades on the Defense Programs-related portions of the NTS will continue.
- Public proximity to some National Weapons Laboratories and defense facilities could result in the transfer of some high-hazard experiments and activities (such as Criticality Experiments Facility) to the NTS.
- The NTS will maintain the capability to conduct underground nuclear explosive operations.
- The U.S. Department of Defense and other agencies will continue to use the NTS for national programs that require the unique geology, remoteness, technical capabilities, and security that the NTS provides.
- Site boundaries are expected to change as a result of land withdrawal by the Yucca Mountain Project. This will be delayed until the Yucca Mountain Project receives authorization to begin construction.
- The operating footprint will experience a small net increase based on planned facility disposition and new facility construction to support an expanding work scope.
- Security assumptions in terms of the level of protection of the site include:
  - NTS will meet the increased design basis threat guidance.
  - NTS will continue to increase/enhance the security posture during times of increased threat levels.
  - NSO will update the Site Safeguards and Security Plan to capture the current security program requirements as needed.

1.2.3 Budget Assumptions

The projects presented in the TYSP will be performed within the budget constraints of the Future-Years National Security Program (fund). Workload requirements are expected to increase, and so are corresponding workforce levels.



Testing Site

1.3 Current Situation

The NTS facilities and infrastructure support mission-critical activities related to Readiness in Technical Base and Facilities, Directed Stockpile Work, and Science Campaigns, as well as other program activities for tenant facilities. While many mission-critical facilities have been well maintained, some face serious system life-cycle issues. Examples include water tanks at the Device Assembly Facility and Joint Actinide Shock Physics Experimental Research Facility.

Of great concern are many of the mission-critical and mission-dependent buildings and infrastructure that have been cycled in and out of operational status and have reached or exceeded the end of their designed life expectancy. The age of these buildings and infrastructure has led to deteriorating conditions. Many of these buildings and infrastructure provide support to mission-critical buildings, including the C-1 building at the North Las Vegas Facility that houses computer operations. The infrastructure necessary for each building to operate effectively has been identi ed and linked to the building on the NSTec database. To continue cost-effective support of NTS missions, these buildings and infrastructure now require major rehabilitation and upgrade.

The infrastructure requirements at the NTS are signi cantly in uenced by both the isolated location of mission-critical facilities and continued support to currently underutilized areas of the site. The decision to operate in the remote areas of the site signi cantly expands the infrastructure system and

maintenance requirements necessary to maintain safe and reliable service. However, the Project Review Committee has established stricter zoning requirements on the NTS, which will limit mission-critical assets, to include base services to a corridor for more ef cient utilization of mission-critical assets *(see **Figure 4-4**)*. Non-defense programs NTS users will have to pay separately for upgrades and maintenance of utilities and roads or other base services they require outside of the corridor.

Sewer assessments completed in FY 2003 noted several system defects and deviations from as-built drawings. Information was entered into the Geographic Information System.

Currently, Facilities and Infrastructure Recapitalization Program funds are being structured to maximize the buy down of deferred maintenance from the FY 2003 baseline, excluding Readiness and Technical Base Facilities. 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 facilities 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***, 2,161,634 square feet (70 percent) of buildings (shown in the Facility Information Management System as a 501 asset type) are over 30 years old; 30 percent of buildings are less than 20 years old. The mean age of NTS buildings is 30 years.

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

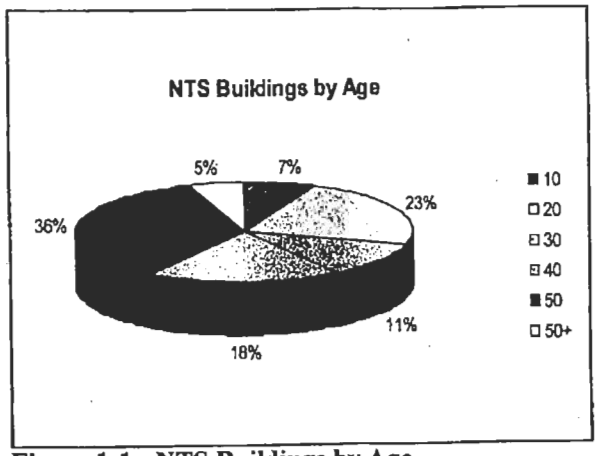


Figure 1-1: NTS Buildings by Age

Figure 1-2 compares these offsite facilities (buildings shown in the Facility Information Management System as a 501 asset type) by age. Forty-six percent of these facilities are over 30 years old and 54 percent are less than 30 years old. NNSA/NSO leases facilities for NSTec 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 NSTec.

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.

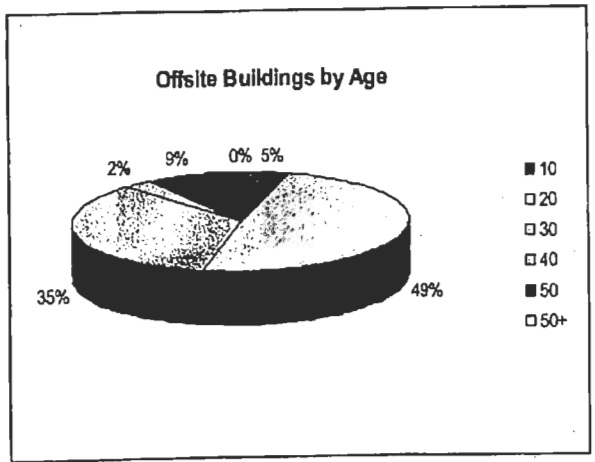


Figure 1-2: Offsite Buildings by Age

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 re ected in the Facility Information Management System was estimated at a total of $2.4 billion. ***Table 1-1*** compares current NTS deferred maintenance to replacement plant value and shows the percent of deferred maintenance and each system. 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

System	Number of Systems	RPV	DM	FCI
Water	67	189,266,963	14,408,438	7.6%
Road	112	339,149,776	60,662,999	17.9%
Power	246	384,382,592	31,187,738	8.1%
Communication	144	173,539,612	23,293,360	13.4%
Airfield	7	37,591,354	2,090,571	5.6%

Corrective actions are underway to alleviate signi cant problems, concerns, and challenges related to mission-critical facilities and infrastructure. Data from facilities and infrastructure assessments are being recorded, analyzed, and re ected 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 critical operations in need 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 *TYSP*

Changes from last year's *TYSP* include minor modi cations to the document's format and content, as speci ed in *NNSA TYSP Guidance* (December 2006). Project changes have occurred since last year due to redirection from NNSA through the Integrated Construction Program Plan.

- General
  - Comments received about the F*Y 2007 TYSP* were reviewed and portions of the F*Y 2008 TYSP* changed to more closely mirror *NNSA TYSP Guidance* requirements.
  - Point of contact was added.
  - Clari cations 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 signi cant 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 2
  - Tables from Appendix B were included in this chapter.
- Chapter 3
  - Section 3.3, Production Readiness/Plant Capacity, was deleted.
  - Figure 3.1 was changed to re ect signi cant organizational changes

- Chapter 4
  - Tables depicting the current and future facility conditions and associated narrative were deleted.
  - Table projecting maintenance investment was deleted. Figure showing required funding pro le was deleted.
  - Communication systems have accomplished many upgrades but some areas still need attention.
- Chapter 5
  - This chapter was rewritten.
- Appendix A
  - Deleted Attachment C: NNSA Summary of Current Condition and Required Future Condition Nevada Site Of ce Table.
  - Deleted Attachment H: Site Security Infrastructure Portfolio for Nevada Site Of ce.
- Appendix B
  - All maps in this Appendix were moved forward and are included in Chapter 2.0.

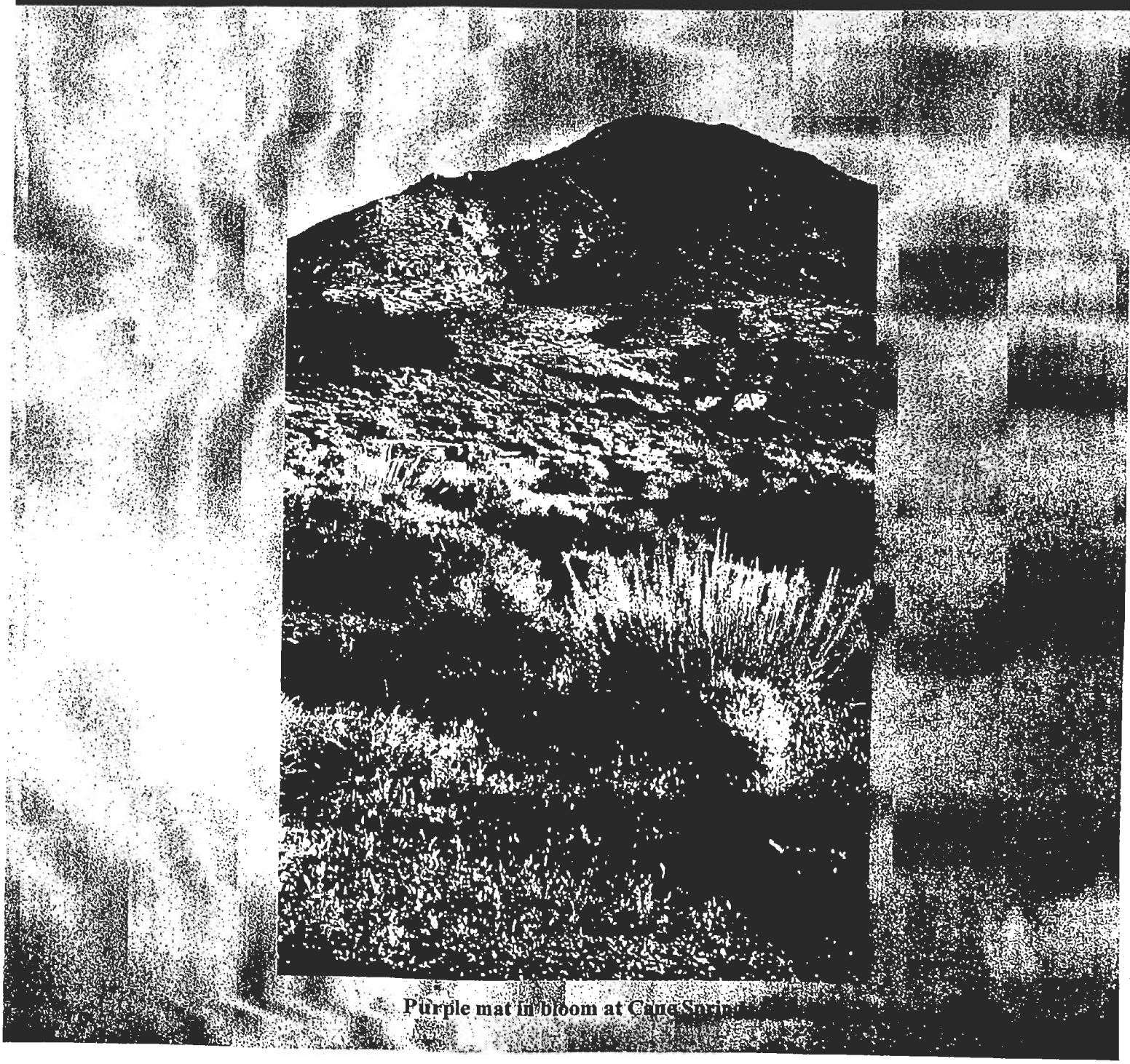
Highlight

On November 8 and 9, 2005, the last six shipments of NTS Ttansuranic legacy waste drums left Area 5 and headed for permanent disposal at the Waste Isolation Pilot Plant in Carlsbad, New Mexico. In all, 1,860 drums of waste have been characterized and shipped over several years.

Drums were x-rayed and assayed, a key part of the characterization process to determine the speci c radiological properties of their contents. Another process also allows experts to determine the chemical properties of the drums through a gas sampling system. Approximately one-quarter of the drums were opened and visually examined in the Visual Examination and Repackaging Building at NTS Area 5. Through all of this characterization and drum handling, more than 30 months of activity, there were no lost time injuries to personnel.

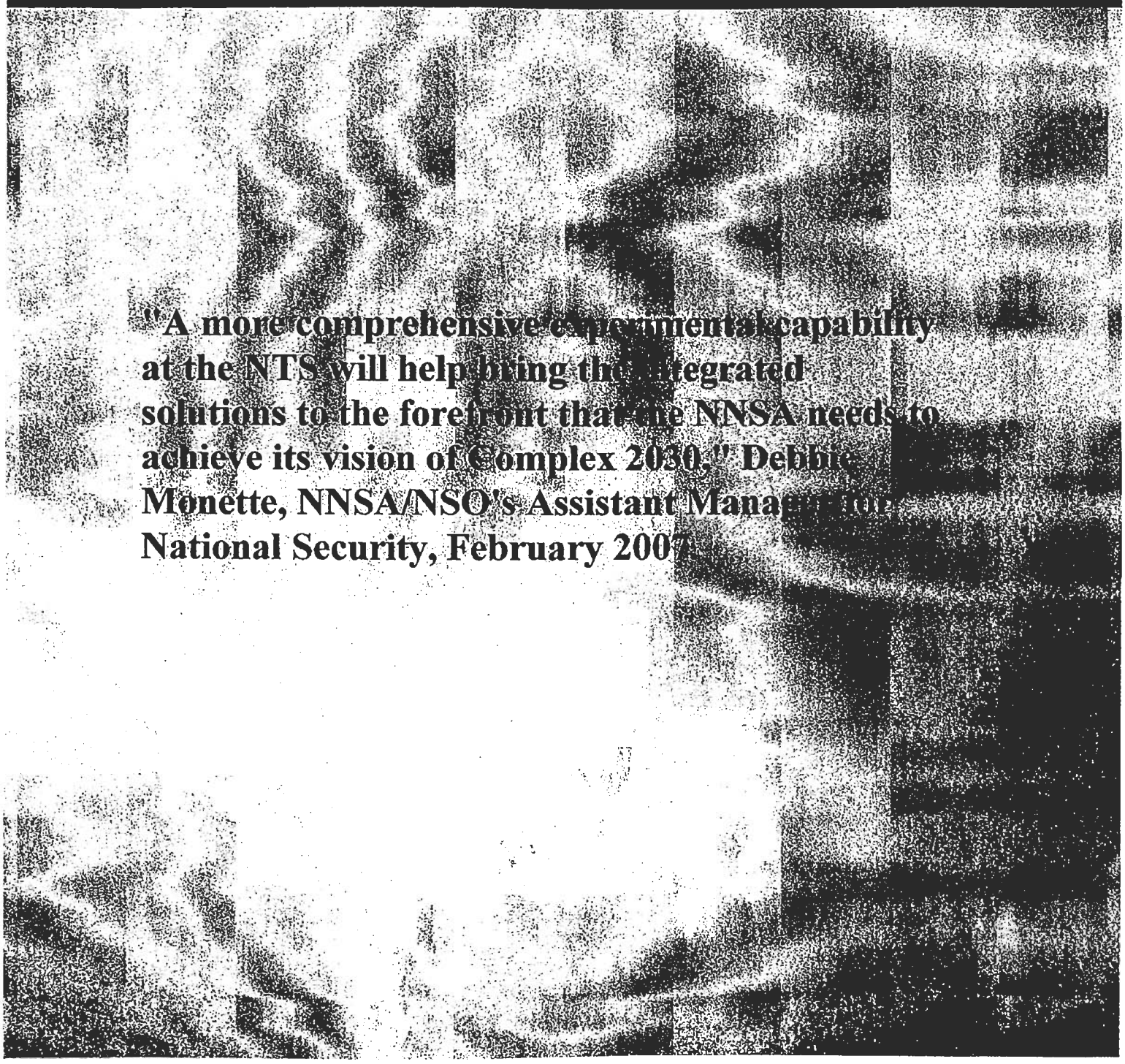
Several NTS employees were on hand at the Waste Isolation Pilot Plant to help receive the last shipments. These NTS employees accompanied the waste to its nal resting place, at the Waste Isolation Pilot Plant, 2,150 feet below ground.

Site Description



Purple mat in bloom at Cane Spring

FY 2008 NNSA/NSO
Ten-Year Site Plan



"A more comprehensive experimental capability at the NTS will help bring the integrated solutions to the forefront that the NNSA needs to achieve its vision of Complex 2030," Debbie Monette, NNSA/NSO's Assistant Manager for National Security, February 2007

Technologies, LLC (NSTec), 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 ten 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.

2.1.1 NTS

The NTS description was taken primarily from DOE/NV/11718-594, *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.

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 ***Figure 2-3,*** located at end of chapter) 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 as ***Figures 2-4, 2-5,*** and ***2-6*** (located at end of chapter), 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.

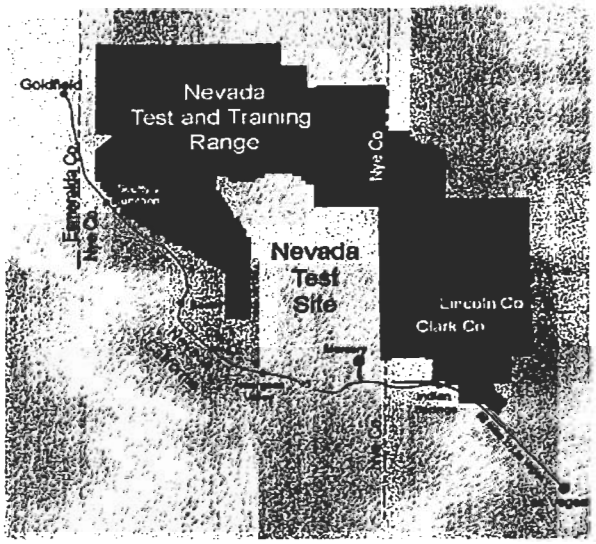


Figure 2-2: NTS Vicinity Map

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 2006. ***Figures 2-7*** through ***2-11*** (located at end of chapter), 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 demolition of 56 buildings totaling 109,250 gross square feet. FY 2004, brought about the decommissioning and demolition of 57 buildings totaling 147,977 gross square feet. Footprint reduction efforts in 2005 reduced the footprint further by 15 buildings totaling 77,748 gross square feet. Demolition during FY 2006 included 13 buildings totaling 47,945 gross square feet. Plans for FY 2007 include the demolition of 2 buildings totaling 5,300 gross square feet. Plans for FY 2008 include the demolition of two buildings totaling 3,210 gross square feet. Fourteen

Table 2-1: NTS Overview

Number of Buildings	Number of Trailers	Gross Sq. Foot	Acres	Ownership	Employee Population

2.0 Site Description

2.1 General Site Description

Chapter Overview

- Discusses NTS infrastructure and historical facilities
- Provides photos, descriptions, and demographics of NNSA/NSO sites
- Presents maps showing vicinity of NTS and facilities in North Las Vegas

Coupled with its auxiliary sites located in California, Maryland, Nevada, and New Mexico, the Nevada Test Site (NTS) offers a diverse compilation of unique facilities, equipment, and expertise making it an unequaled resource for many of the nation's key scientific and security projects. ***Figure 2-1*** shows the location of the NTS and its auxiliary sites. Although the primary focus is on the NTS, the site descriptions address the respective physical and intellectual aspects that make each auxiliary site a unique asset for meeting U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) missions.

Since the nuclear weapons testing moratorium in 1992, and under the direction of the U.S. Department of Energy, the NTS and its auxiliary sites have diversified into many other programs such as conducting integrated, science-based experiments that ensure the safety and reliability of the U.S. Nuclear Weapons Stockpile. NTS technical support capabilities have substantially advanced in such areas as diagnostics and analysis, target chamber operation, defense systems testing and demonstration, hazardous chemical spill testing, and emergency response training.

Where appropriate, photographs and figures are included to facilitate visualization of key information communicated in the text.

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 National Security

Figure 2-1: NNSA/NV Operations Sites

buildings totaling 25,533 gross square feet have been identi ed as potential candidates for demolition in FY 2010.

In addition to the constant need to recapitalize or replace severely aging buildings and infrastructure, additional requirements to move the NTS towards Complex 2030 mission requirements will require close coordination between the National Weapons Laboratories and NNSA/NSO. Currently identi ed requirements in this *TYSP* have been included in Appendix A, Attachment A-2 Cost Projection Spreadsheet for consideration by the Integrated Construction Program Plan this fall.

Maintenance Activities at Valley Substation Facility

2.1.1.1 NTS Power Distribution and Transmission System

The NTS owns, operates, and maintains the majority of the 138-kV transmission loop on the site. There are currently two power sources for this 138-kV transmission system. One source, the Nevada Power Company, connects to the NTS 138-kV transmission loop at the Mercury Switching Center. The Nevada Power Company owns the portion of the 138-kV loop running from the Mercury Switching Center to the Jackass Flats Substation where the second power source, Valley Electric Association, connects to the NTS 138-kV transmission loop.

The entire 138-kV transmission system loop consists of eight transmission substations and one switching center connected by approximately 100 miles of 138-kV transmission line. ***Figure 2-12*** (located at end of chapter), shows the existing site-wide power system and identi es the portions of the system that are mission dependent not critical. The transmission line and substation facilities are between 30 and 40 years old. The switching center and more than one-half of the major 138-kV substations have been upgraded over the past ve years with modern equipment, including a supervisory control and data acquisition system. The remaining major substations, however, have critical and vital components such as transformers, switches, breakers, and relays that are more likely to fail. To compound the problems, manufacturers no longer support much of the equipment or stock parts. Mercury Distribution, Valley, and Jackass Flats Substations have been modernized, and Castle Rock Substation is scheduled for modernization through use of Facilities and Infrastructure Recapitalization Project funds in FY 2007.

The 138-kV transmission lines from the Nevada Power Company and Valley Electric Association also feed loads not associated with the NTS. The transmission line from Nevada Power Company's Northwest Substation serve additional loads such as the State Correctional Facilities and Indian Springs. Valley Electric Association's line serves additional loads including Pahrump, Lathrop Wells, Beatty, and others. Although these loads are not associated with the NTS, they have a signi cant 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 138-kV 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 138-kV system, coupled with the growth of Valley Electric Association's loads may require signi cant upgrades to the current 138-kV system capacity within the next four or ve years.

Currently, the entire onsite transmission system capacity 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 system voltage constraints. NSTec 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 138-kV system at all times and at all substations to allow adequate secondary voltage levels. NTS system 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 138-kV system to support their projected new loads may reduce the available power to the NTS to less than 36 megawatts if no further improvements to the outside 138-kV system are made.

2.1.1.2 Water

The NTS water system consists of 8 water systems; 3 of the water systems are permitted by the state of Nevada, 2 are Non-Transient Non-Community Public Water Systems and 1 is a Transient Non-Community Public Water System. Five of the water systems are non-permit required systems. The NTS water system includes 9 operating wells, 25 operating water storage tanks, 10 booster pump stations and approximately 140 miles of distribution pipeline. ***Figure 2-13*** (located at end of chapter) shows the existing site-wide water system and identifies those portions deemed mission dependent, not critical.

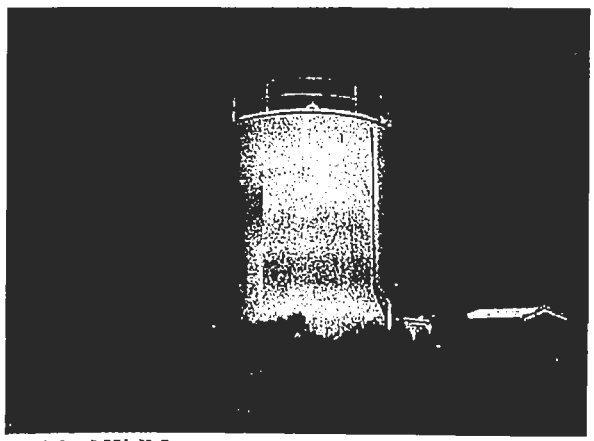
The NTS water systems require immediate attention to address regulatory, deterioration, and reconfiguration requirements. Maintaining these systems is critical to the mission-critical facilities and execution of the Defense Program missions at the NTS. The systems provide essential health, sanitation, 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 elements of the systems. Maintenance has only been able to keep the systems functional through regular breakdown repair, bypass operations, and labor-intensive actions.

An added complication in rehabilitating the NTS water systems is the reconfiguration required to meet current programmatic needs. The systems currently support a diverse mix of fixed Defense Program operations with fixed populations supporting research and development and testing activities. In addition to the fixed operations and populations, additional exercise and training activities introduce large transient populations and, therefore, require reconfiguration actions to adequately address health, safety, and support issues.

The NTS water systems require recapitalization efforts to meet long-term deterioration issues. Long-term solutions in the form of new wells, storage tanks, and potential treatment facilities are under consideration.



Finished Well 8

2.1.1.3 Roads

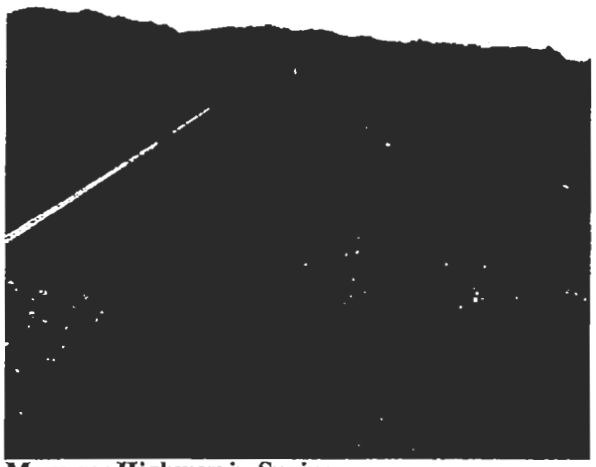
The NTS includes 340 miles of a paved road system. Approximately 195 miles of these roads are identified as mission-dependent, not critical to maintain a basic infrastructure network for Defense Programs. The remaining 100 plus miles of roadways consist mainly of short feeders to the network supporting other NTS operations, utility right of way, remote training, and high-hazard sites. ***Figure 2-14*** (located at end of chapter), depicts the existing paved road network and identifies the portions of the network that are mission-dependent, not critical.

A significant portion of the 340-mile paved NTS road system is substandard. A hierarchy of NTS roads was developed in the infrastructure plan covering NTS roads system. This hierarchy prescribes the network of established roads considered mission dependent, not critical to support NNSA/NSO commitments. Except for 13.8 miles of reconstruction completed in 2001, the remainder of the 195 miles of the paved roadway network identified as mission dependent, not critical is in a fair to potential failure condition. Extensive and effective remedial reconstruction, rehabilitation, and resurfacing actions are necessary to stem further deterioration.

The estimated 640 miles of roadways at the NTS represent the entire spectrum of rural roadway construction. Three basic types of road construction have been developed over the years at the NTS.

(1) Major transport routes, such as the Mercury Highway, are constructed of asphalt concrete and are suitable for sustained highway loads and speeds.
(2) Spur roads of shorter length to specific activity locations, such as Road 5-01, generally consist of multiple layers of oil and chip and are suitable for use at reduced speeds and loads.
(3) Unpaved routes, such as Fortymile Canyon Road, are graded and passable at low speed and are suitable for construction or maintenance vehicles.

Most of the 340 miles of paved roadways were initially constructed prior to 1965. Numerous upgrades and safety improvements to various segments have allowed continuous operations at the NTS. However, compound deterioration of a marginal road system has resulted in reduced speed limits, which, in turn impacts project timelines, leads to loss of productivity, and jeopardizes successful completion of missions in a timely, cost effective manner. In all cases, the 340 miles of paved roads have not been maintained for use at the loads and speeds of today's traffic. Current Facilities and Infrastructure recapitalization project-funded projects and maintenance budgets will only maintain a portion of the 340 miles of paved roads needed to support mission critical and mission dependent not critical facilities.



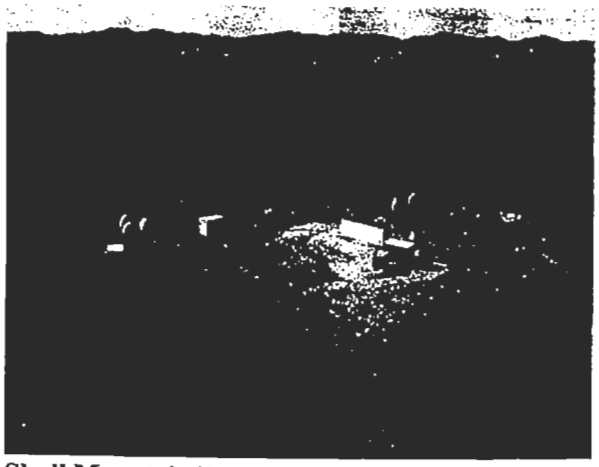
Mercury Highway in Spring

2.1.1.4 Communication

Telecommunications/information technology backbone infrastructure is comprised of fiber-optic cabling (***Figure 2-15***, located at end of chapter), traditional copper cabling, and microwave systems (***Figure 2-16***, located at end of chapter). These systems are the main arteries for exchange of video, voice, and data information for the telephone, metropolitan area network, and local-area network services . This infrastructure interacts with leased services from commercial telecommunications providers in order to exchange critical information among NNSA, the National Weapons 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 telecommunications/information technology infrastructure requirements on specialized project sites (such as U1a, the Nonproliferation Test and Evaluation Complex, and Counter Terrorism Operations Support) continue to grow in capability and complexity in order to meet National Weapons Laboratory and other federal agency mission requirements. However, the telecommunications/information technology backbone infrastructure at the NTS lags behind evolving requirements. Scientific and operational information is being generated and gathered using the latest technologies at each site. The NTS backbone infrastructure uses dated (≈10 years) technology. The physical media that makes up the backbone is beginning to show signs of degredation in a few locations due to age and the harsh desert environments.

These deficiencies in the backbone infrastructure represent a potential impediment to exploiting the full potential of the NTS. The Stockpile Stewardship, Homeland Security and Defense Applications, and Counter Terrorism Operations Support Programs are most constrained by current backbone infrastructure limitations.



Skull Mountain Repeater

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 of Historic Places, actions to mitigate the effects are required by law.

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 NTS. 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.

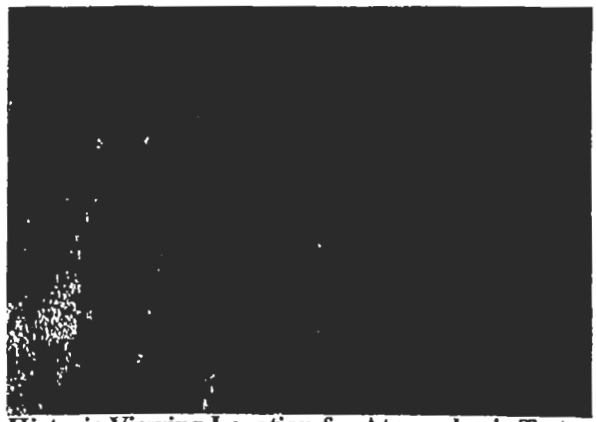
The geographical scope of a project is determined before surveys, inventories, or historical evaluations proceed.

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.

In 2005, six surveys were conducted: Fire Station No. 2 Project, Fire Break for a Fiber Optic Line Project, the Truck Parking Area, the Revegetation of Two Study Plots, the Area 22 Borrow Pit and Access Road, and the Area 6 Borrow Pit Expansion. The only cultural resources identified within these project areas were two isolated artifacts found by the survey of the revegetation study plots. The Area 6 Borrow Pit Expansion area was adjacent to two fenced locations that contain wooden benches that had been used for viewing atmospheric nuclear tests and determined eligible to the National Register of Historic Places. As a result, it was recommended that the project area be modified to avoid any potential impact to the bench locations.

One cultural resources inventory was conducted for the sets of benches from which atmospheric nuclear tests were observed at the NTS between 1951 and 1962. Six sets of benches were examined. Three sets had previously been determined eligible to the National Register of Historic Places; two are part of the Frenchman Flat Historic District and the other one is at News Nob. These benches were recorded in more detail than during previous efforts. Three other sets of benches were also documented. One set is on the west side of Frenchman Flat and two sets are at the southwest end of Yucca Flat. All three of these sets are now eligible to the National Register of Historic Places. The benches are constructed of wood and consist of a seat, support posts, and bracing. They are set up in parallel rows.

One historical evaluation was conducted in 2005 for the buildings within the Pluto Control Facility in Area 26. The Pluto Control Facility was one of three facilities in the Pluto Complex. The facility was in operation from 1958 to 1964 to develop and test nuclear reactors for ramjets to be used in long-range, low-altitude missiles for the U.S. Department of Defense. The building numbers and names include: 2101, the Control Building; 2102, the Assembly and Shop Building; 2103, the Critical Assembly Building (also known as the Hot Critical Experiment Building or the Hot Box); 2106, an open interior warehouse; and 2107, the Delta Reduction Building. A total of 173.9 acres was examined during cultural resources surveys, inventories, and historical evaluations. No prehistoric or historic archaeological sites were determined to be eligible for nomination to the National Register of Historic Places. Four nuclear testing-related structures were documented and their determinations are pending.



Historic Viewing Location for Atmospheric Test

There were no determinations of adverse effect to cultural resources in 2005. No mitigation activities were undertaken or were in progress.

General reconnaissance and other activities were also conducted in 2005 and included five field reconnaissance and two archival research projects. One field visit was to record Magazine 802 and a nearby unnumbered magazine in Area 5. The second field visit was to accompany NTS personnel to nine corrective action sites within Corrective Action Unit 537 in Areas 2, 3, 5, 18, and 19. Desert Research Institute was requested to make recommendations regarding the historical importance of the materials scheduled for removal at these corrective action sites. Three of the corrective action sites did not contain historic materials and six of the sites are associated with historic events. The third field project was a preliminary assessment for five tunnel sites and two vertical shaft sites regarding their historical importance and potential eligibility to the National Register of Historic Places.

The other two field visits were for monitoring purposes. The first involved nine properties eligible to the National Register of Historic Places. The *National Historic Preservation Act* requires federal agencies to identify and maintain the integrity of historic properties under their jurisdiction. Historic properties have been deemed so through consultation between NNSA/NSO and the Nevada State Historic Preservation Office and include prehistoric and historic archaeological sites and objects, and historic buildings, structures, and objects. The purpose of the monitoring program is to periodically document that the historic properties, traditional cultural properties, and American Indian sacred sites on the NTS retain their integrity and National Register of Historic Places eligibility. Monitoring the condition of cultural resources is an integral part of the NNSA/NSO Historic Preservation Program. Two of the prehistoric sites were not visited due to access problems. The sites monitored are temporary American Indian camps and a tool manufacturing area. All of the sites were in a very good state of preservation. The second monitoring effort was for two prehistoric sites near Underground Test Area Project wells.

2.1.2 Auxiliary Site

2.1.2.1 North Las Vegas Facility

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, including the Nevada Support Facility, consists of 80-acres located along Losee Road, parallel to and a short distance west of Interstate 15 (***Figure 2-17***). 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.

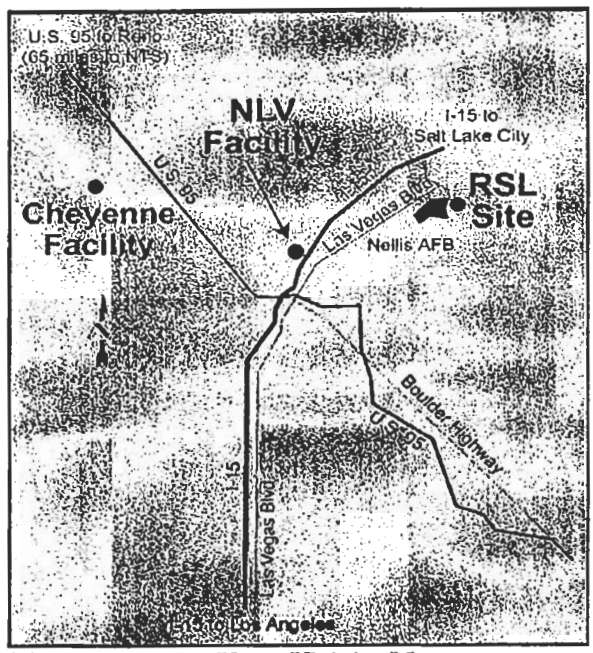


Figure 2-17: Las Vegas Vicinity Map

The county has announced plans for a freeway yover in the vicinity of the North Las Vegas Facility, but a nal plan has not yet been selected. The impacts to the North Las Vegas Facility will be determined once a nal plan is announced.

The North Las Vegas Facility has about 15 acres of undeveloped land. Therefore, further industrial expansion in the surrounding area will not affect North Las Vegas activities, except for potential increased traf c congestion. The North Las Vegas Facility property adjacent to Commerce Street (the Nevada Support Facility and C-Complex buildings) must comply with a three-story building-height zoning restriction.

Table 2-2 provides an overview of the buildings at the North Las Vegas Facility. The number of facilities and gross square footage includes Building B-9A. ***Figure 2-18*** (located at end of chapter) depicts the existing North Las Vegas Facility site plan.

Building B-3 is slated for rehabilitation. The critical decision (CD-1/CD-2) for this project has been approved, and the project construction is scheduled to start in FY 2007. Completion of the project will enable employees to return to the North Las Vegas Facility and reduce the leased space at the Cheyenne Facility to that occupied by Work for Others Program personnel. After analyzing the mission requirements at the North Las Vegas Facility, there are no requirements for additional building space or land acquisition in this planning period.

Table 2-2: North Las Vegas Facility Overview

Number of Buildings	Number of Trailers	Gross Sq. Foot	Acres	Ownership	Employee Population
29	1	[illegible]9,037	78	DP	

2.1.2.2 Cheyenne Facility

Cheyenne Facility

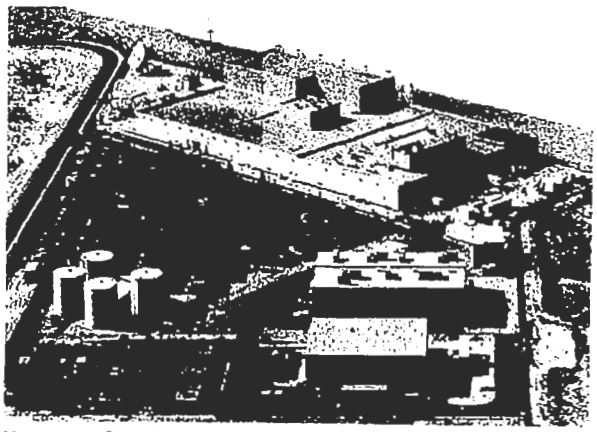
Engineering, procurement, and environmental compliance activities are now located at the Cheyenne Facility. The Cheyenne Facility Complex is located at the Cheyenne Corporate Centre at 7690 West Cheyenne Avenue in Northwest Las Vegas.

Table 2-3 provides an overview of the buildings at the Cheyenne Facility as reported in the Facility Information Management System. 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 Sq. Foot	Acres	Ownership	Employee Population
1	[illegible]	[illegible]378	NA	L[illegible]	

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 eld 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 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. ***Figures 2-19 and 2-20*** (located at end of chapter) 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 Sq. Foot	Acres	Ownership	Employee Population
6	0	150,772	N/A	Lease	240

2.1.2.4 Remote Sensing Laboratory–Andrews

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 Sensing Laboratory- Andrews occupies 0.86 secured acres on the Andrews Air Force Base in Camp Springs, Maryland. The administrative facility, 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 1996). The leased hangar space and other services are covered under a service agreement that also allows access to, and use of, the Andrews Air Force Base runway.

Table 2-5 provides an overview of the buildings at the Remote Sensing Laboratory-Andrews. After analyzing the mission requirements, there are no requirements for additional building space or land acquisition in this planning period.

Table 2-5: Remote Sensing Laboratory–Andrews Overview

Number of Buildings	Number of Trailers	Gross Sq. Foot	Acres	Ownership	Employee Population
1	0	1	A	Lease	61

2.1.2.5 Livermore Operations

Livermore Operations

Livermore Operations provides resources for experiments in high-energy density physics and hydrodynamics in support of the Stockpile Stewardship Program. Livermore Operations supports the NTS and the National Weapons Laboratories through the development and fabrication of key diagnostics. Livermore Operations, located in Livermore, California, occupies a 35,687-square-foot, leased facility, with utilities provided by local utility companies. Facility maintenance is provided by the facility owner who maintains the facilities in good or better condition.

Table 2-6 provides an overview of the buildings at Livermore Operations. After analyzing the mission requirements, there are no requirements for additional building space or land acquisition in this planning period.

Table 2-6: Livermore Operations Overview

Number of Buildings	Number of Trailers	Gross Sq. Foot	Acres	Ownership	Employee Population
1	0	35,687	N/A	Lease	

2.1.2.6 Los Alamos Operations

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 is located atop the Pajarito Plateau in north-central New Mexico near Los Alamos. The Los Alamos Operations facility is a leased facility, with utilities

Los Alamos Operations

provided by local utility companies. Facility maintenance is provided by the facility owner who maintains the facilities in good or better condition.

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 NSTec permanent residents in Albuquerque and 6-10 additional visiting experimentalists are currently located in two double-wide mobile offices owned by NSTec (24' x 60' each, with 2,490 sq ft of usable office and laboratory space).

Table 2-7 provides an overview of the buildings at the Los Alamos Operations. This does not 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 Sq. Foot	Acres	Ownership	Employee Population
1	0	50,0		Lease	84

2.1.2.7 Special Technologies Laboratory

The Special Technologies Laboratory provides specialized expertise in radiation detection and spectroscopy, applied physics, software and firmware, and compact low-power electronics. The Special Technologies Laboratory is located in Santa Barbara, California, near the campus of the University of California at Santa Barbara. Utilities are provided by local utility companies. Facility maintenance is provided by the facility owner.

Table 2-8 provides an overview of the buildings at the Special Technologies Laboratory. After analyzing the mission requirements, the Special Technologies Laboratory requires an additional 7,000–10,000 square feet to accomplish their current mission in this planning period. Seven buildings and three trailers are currently located on that leased land. NSTec is responsible for building maintenance.

Table 2-8: Special Technologies Laboratory Overview

		50,742	N/A	Leased DOE/O	55

Special Technologies Laboratory

Highlight

The Department of Homeland Security's Domestic Nuclear Detection Office conducted a three-week test on personal radiation detection devices at the NTS during July and August. The test, code-named Bobcat, was conducted at the Domestic Nuclear Detection Office Interim Test Track.

The Domestic Nuclear Detection Office solicited commercially available gamma-ray personal radiation detection devices, with or without neutron detection capability, to test technical performance. Eight commercial companies sent 15 different types of personal radiation detection devices to be tested by the Domestic Nuclear Detection Office. Personal radiation detection devices are typically worn or carried by law enforcement personnel and first responders while on duty. They are designed to detect nearby radiation sources and alert the wearer of a potential threat. The objective of this testing was to help U.S. Department of Homeland Security /Domestic Nuclear Detection Office understand the operational capabilities and, subsequently, limitations of these personal radiation detection devices under certain conditions. The tests were designed to characterize the performance of personal radiation detection devices in field-like conditions using realistic sources, threat representative test objects, and operationally relevant scenarios. The data will be compiled into a report and the results from these tests will be made available to interested federal, state, and local government officials. All of the testing was conducted by U.S. Department of Homeland Security designated operators.

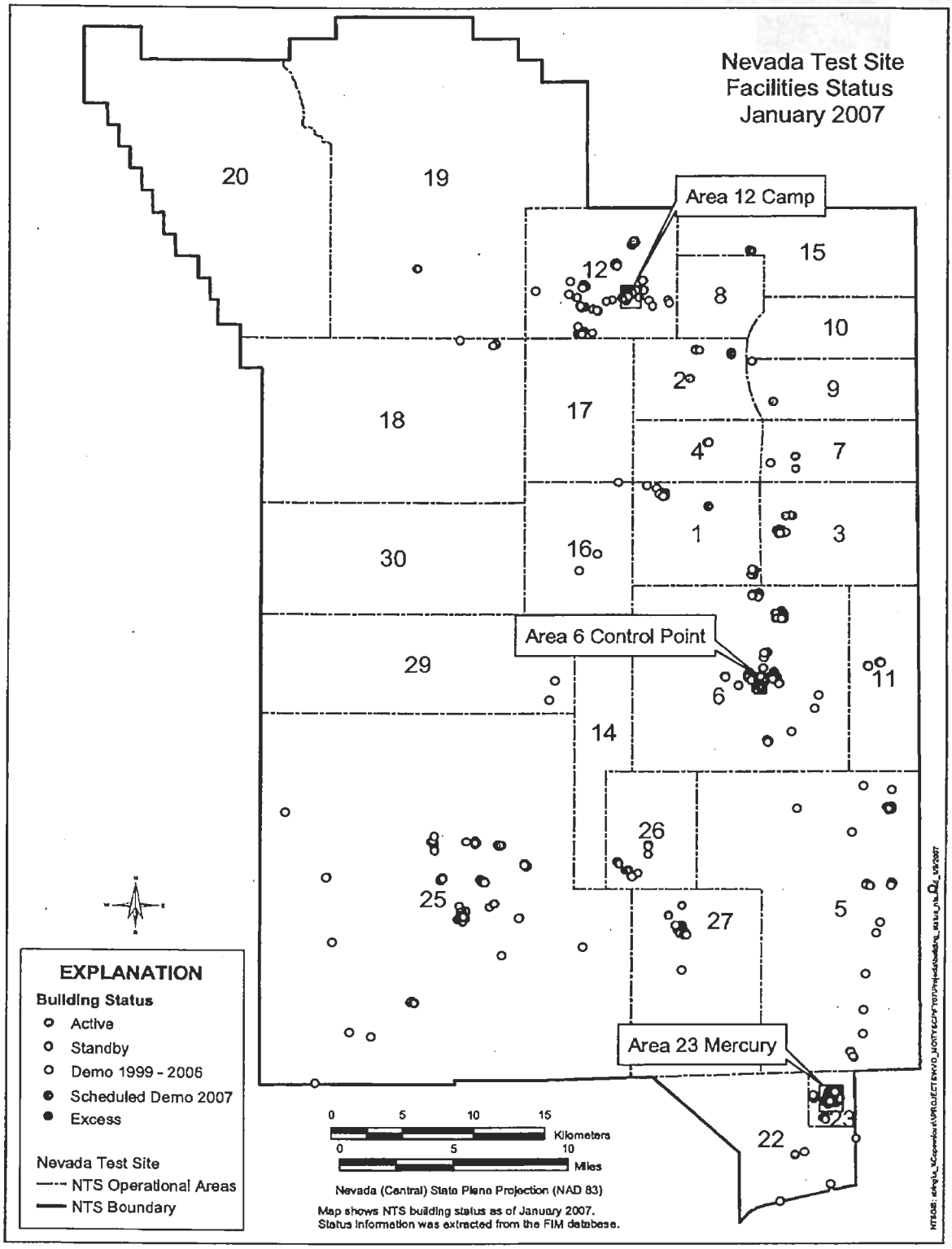


Figure 2-3: Nevada Test Site Building Status Overview

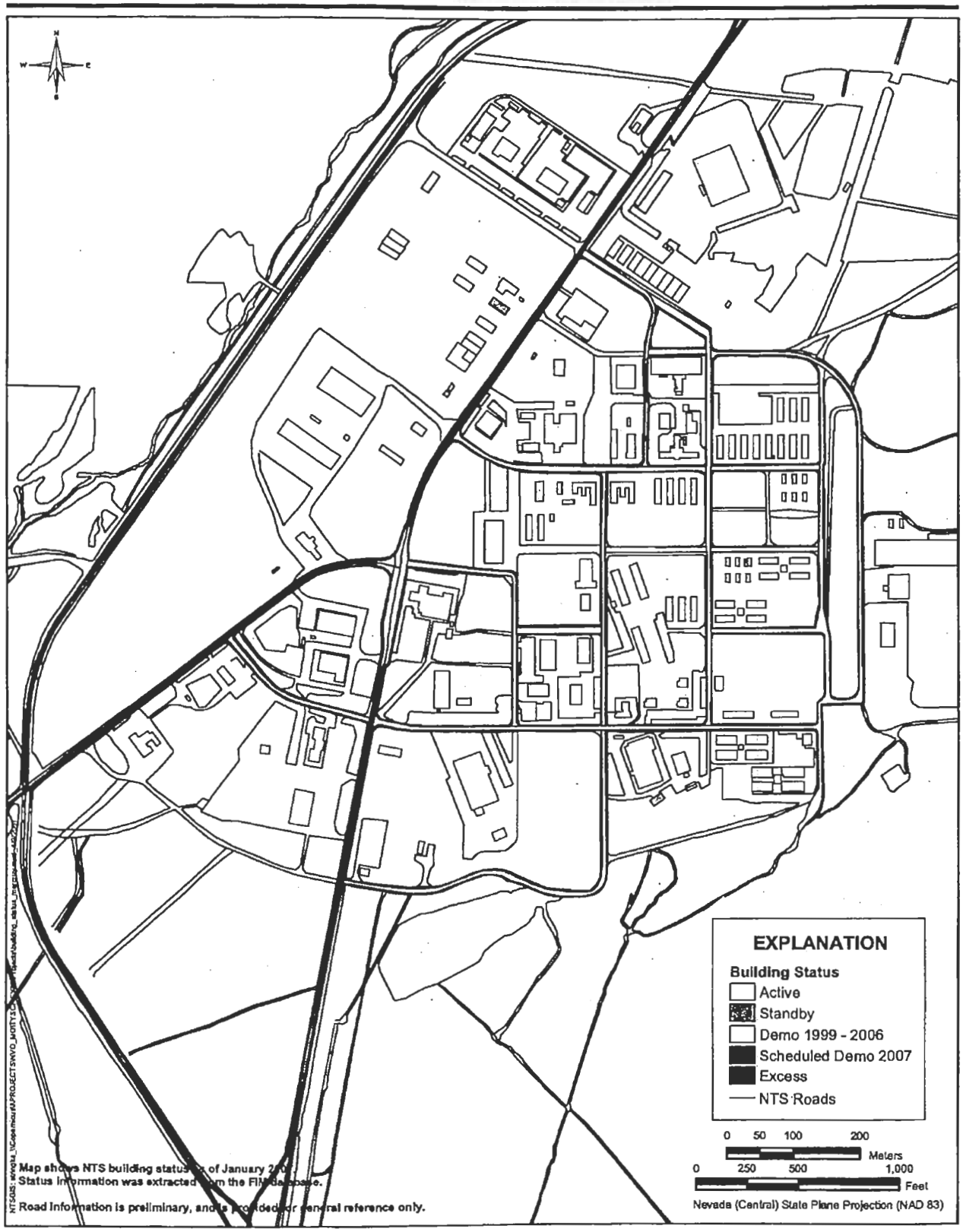


Figure 2-4: Area 23 (Mercury) Building Status

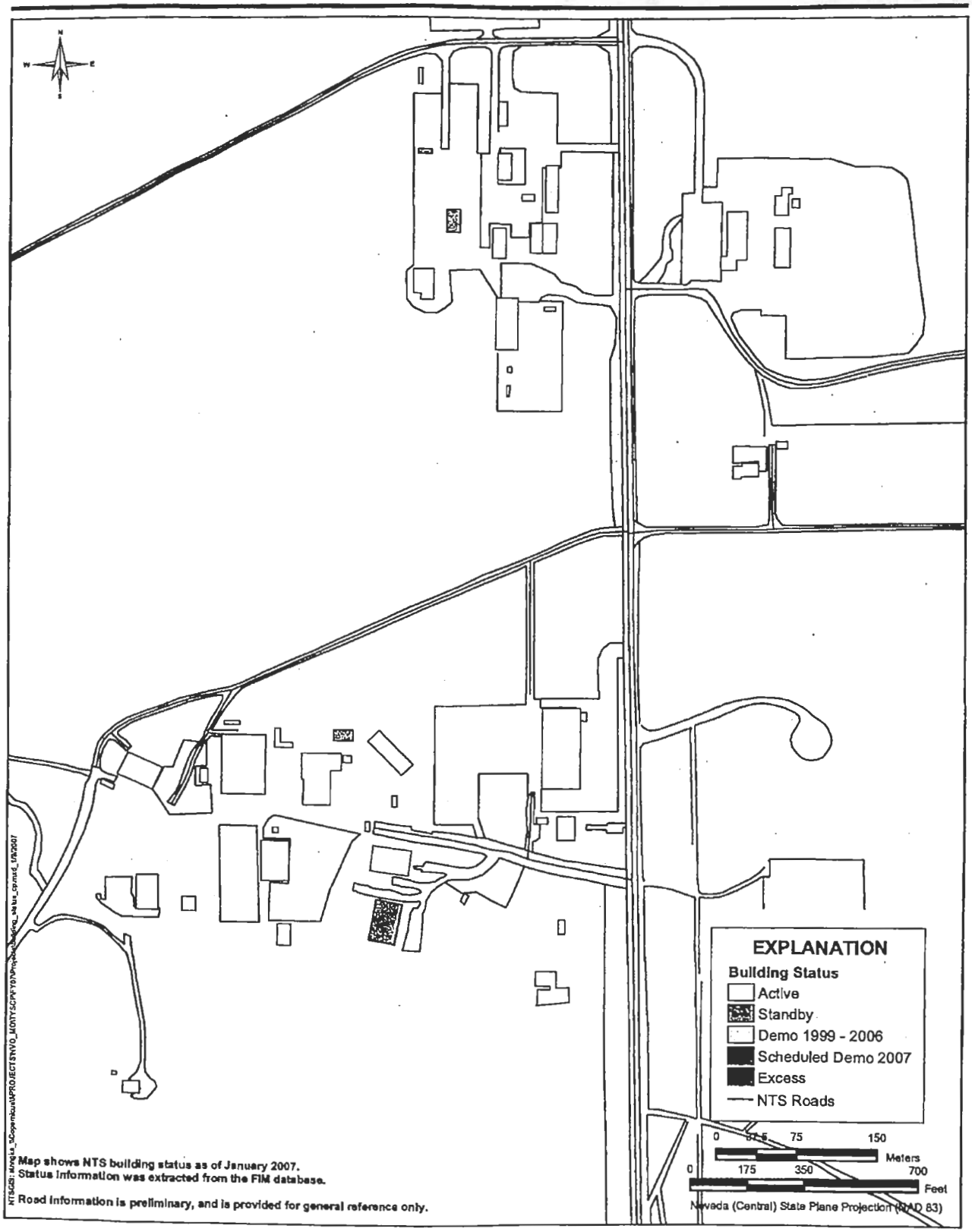


Figure 2-5: Area 6 (Control Point) Building Status

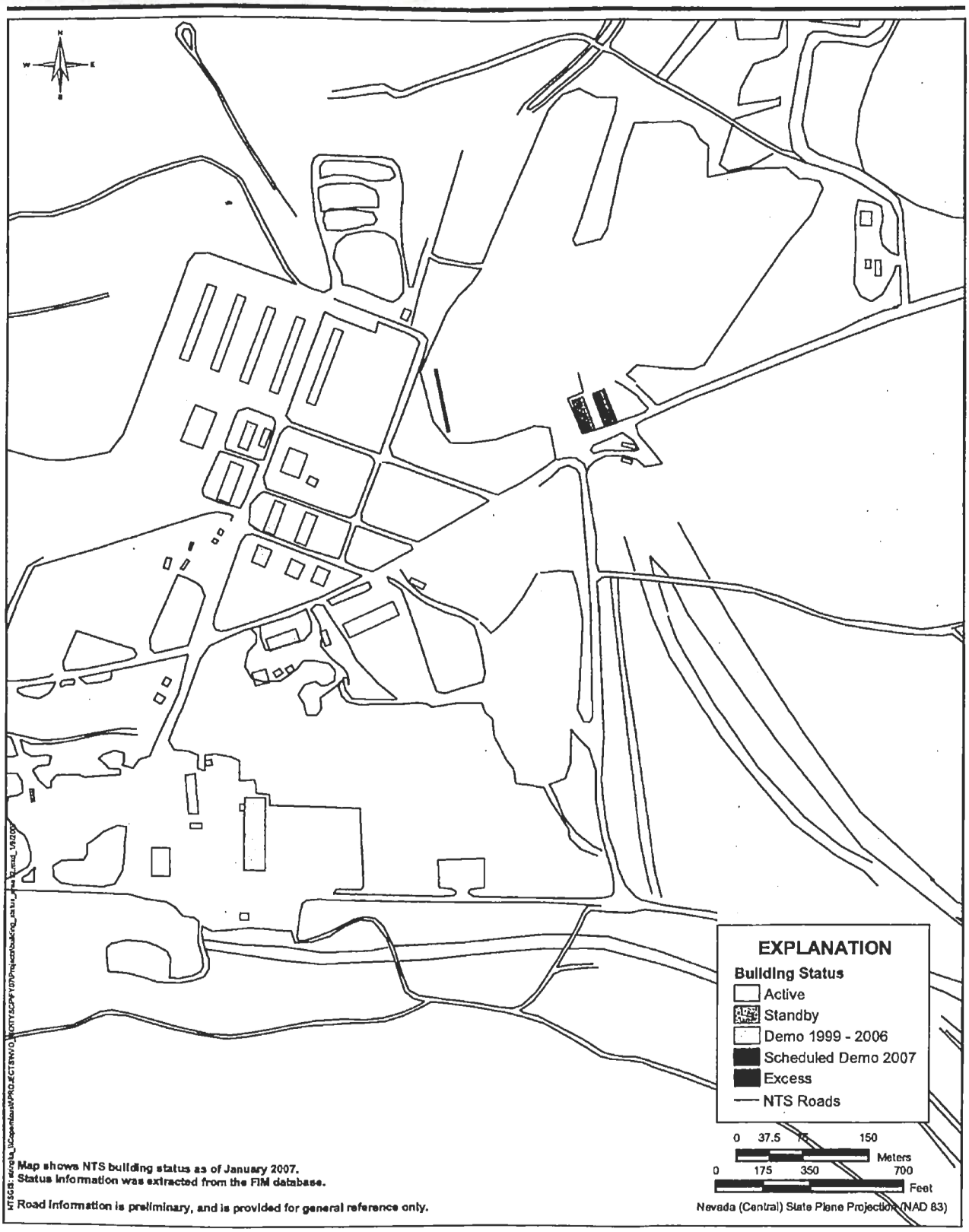


Figure 2-6: Area 12 Camp Building Status

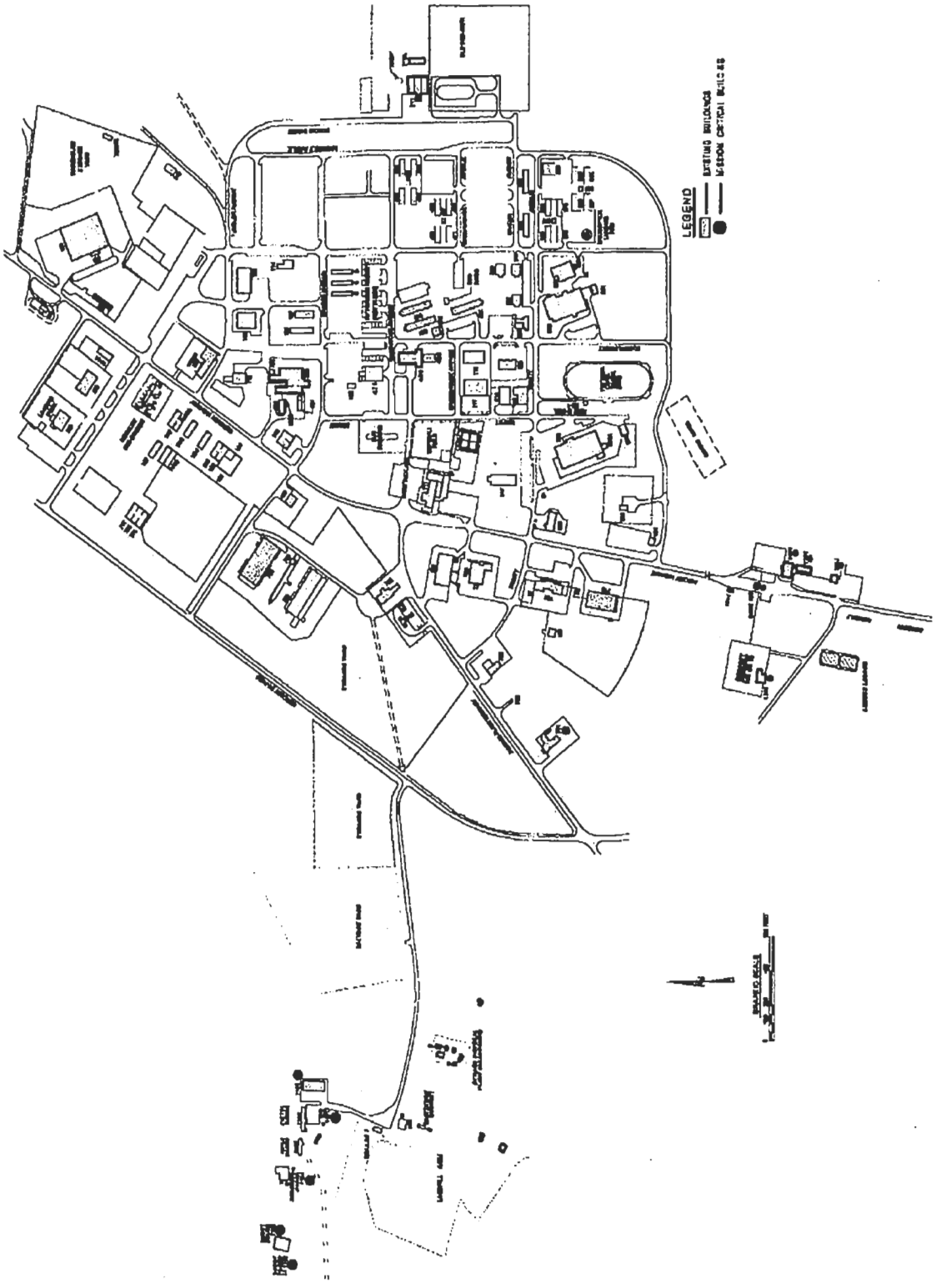


Figure 2-7: Area 23 (Mercury) Existing Site Plan

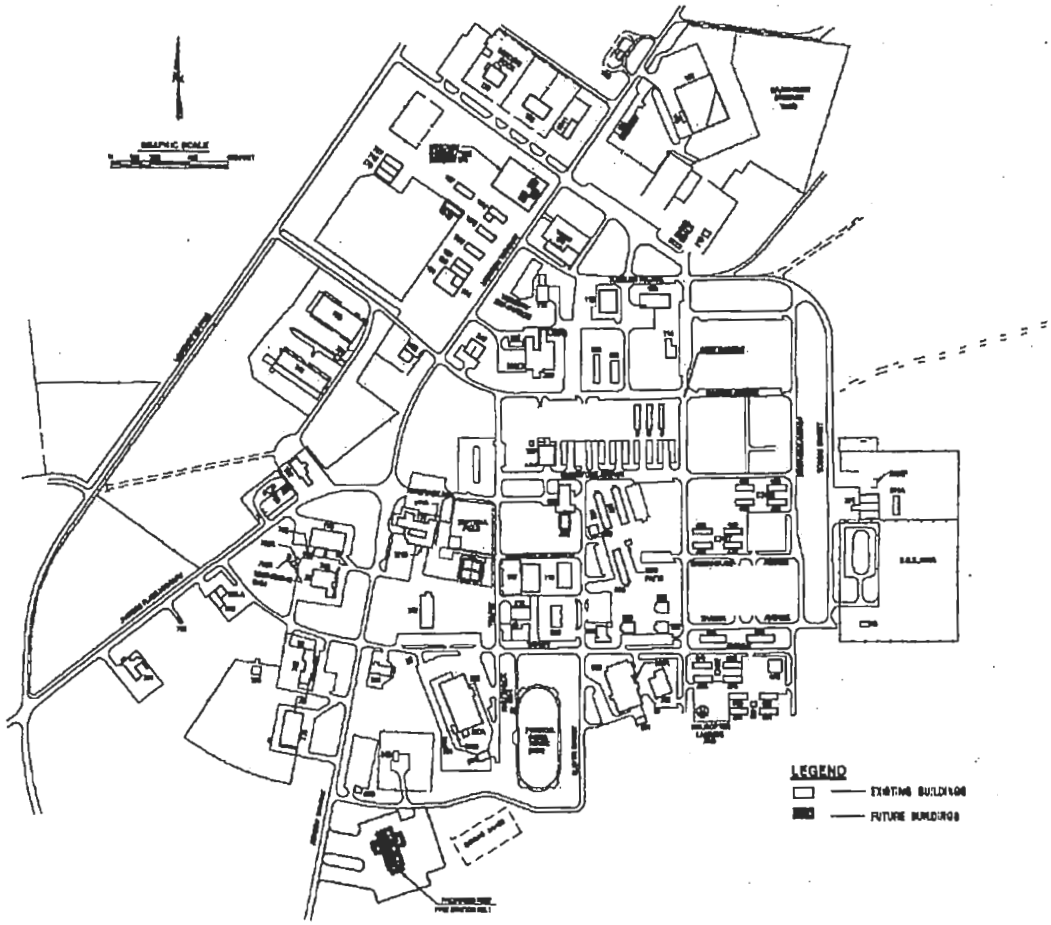


Figure 2-8: Area 23 (Mercury) Future Site Plan

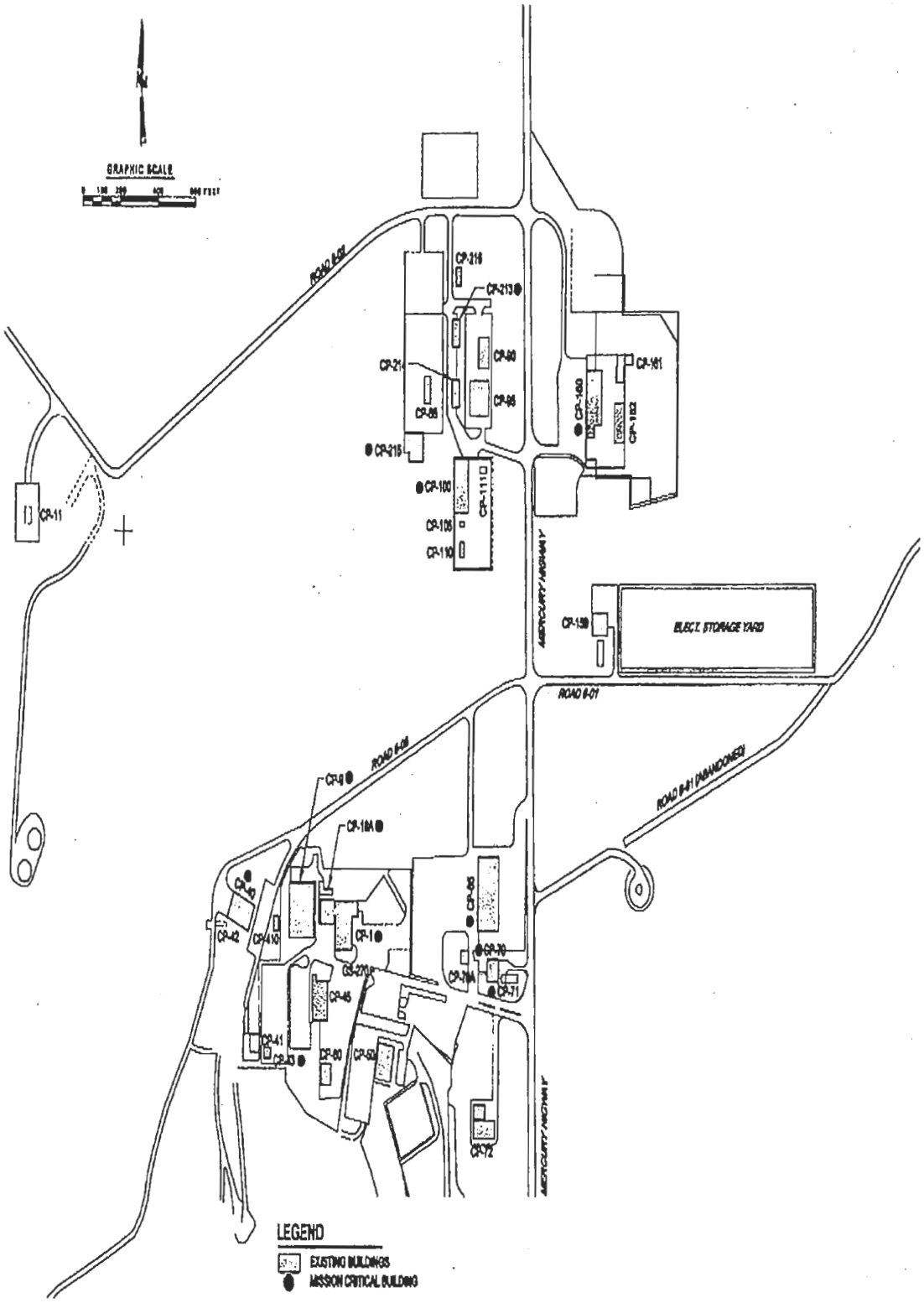


Figure 2-9: Area 6 (Control Point) Existing Site Plan

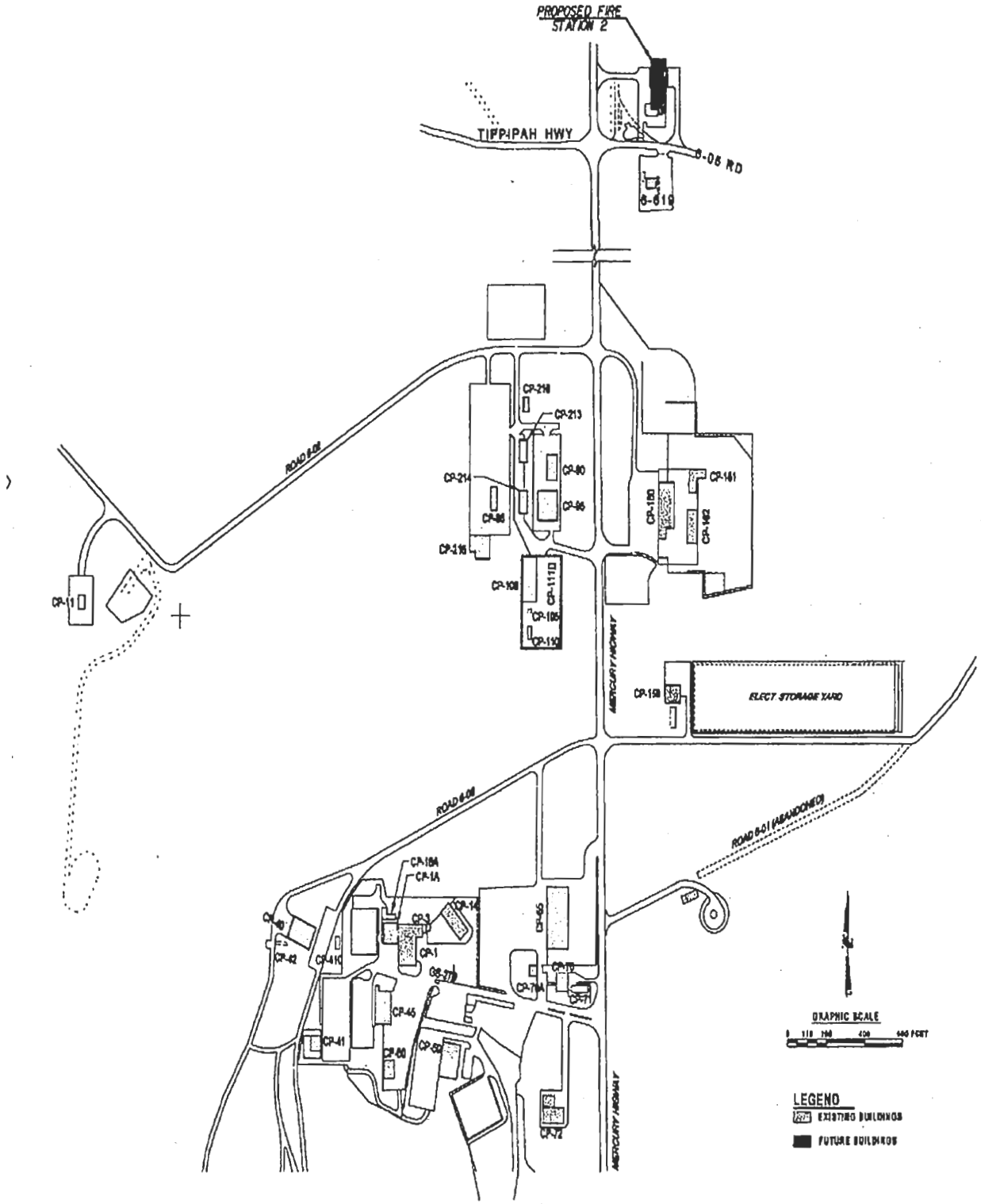


Figure 2-10: Area 6 (Control Point) Future Site Plan

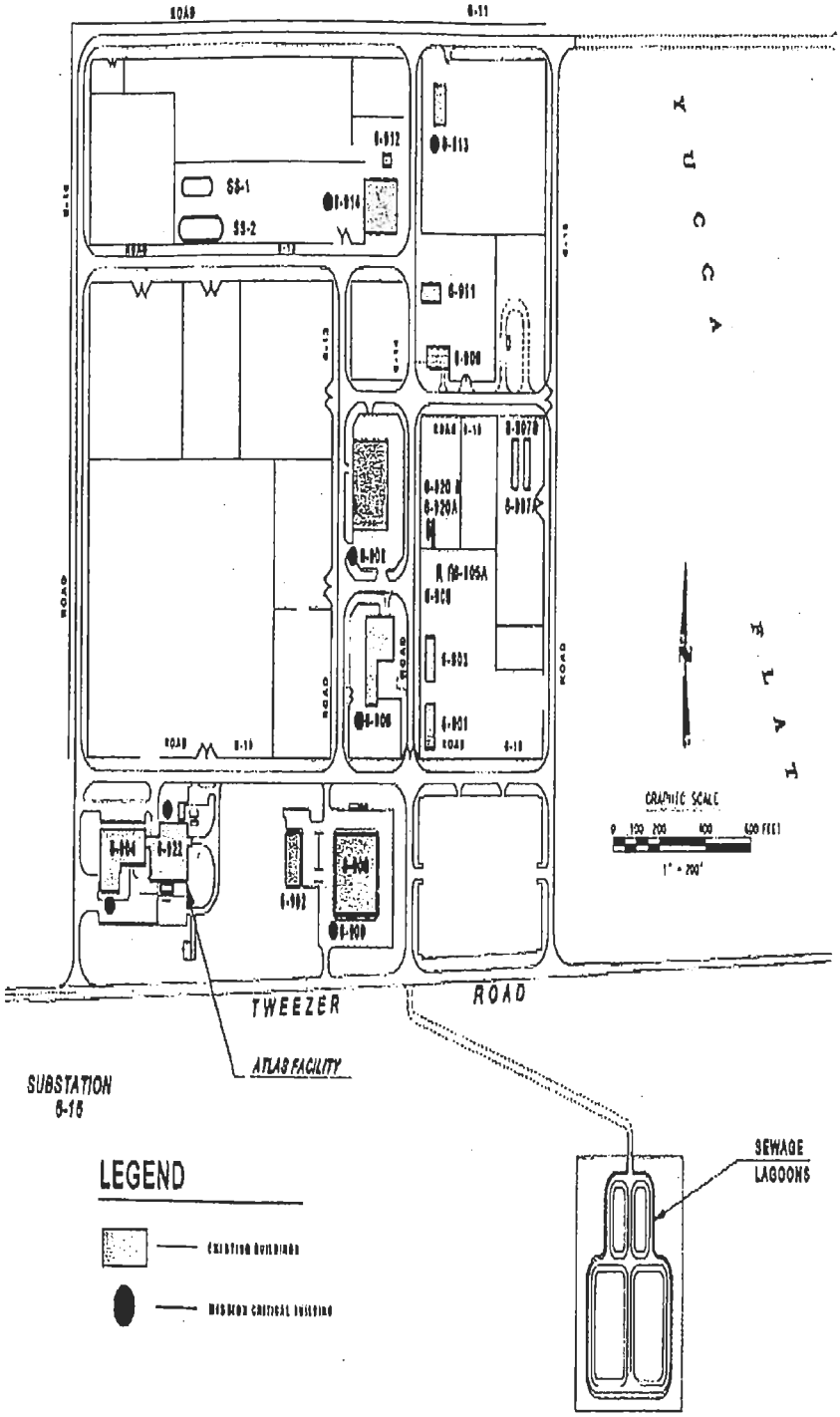


Figure 2-11: Area 6 Future

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Exemption 2

Figure 2-12: Nevada Test Site Power Systems

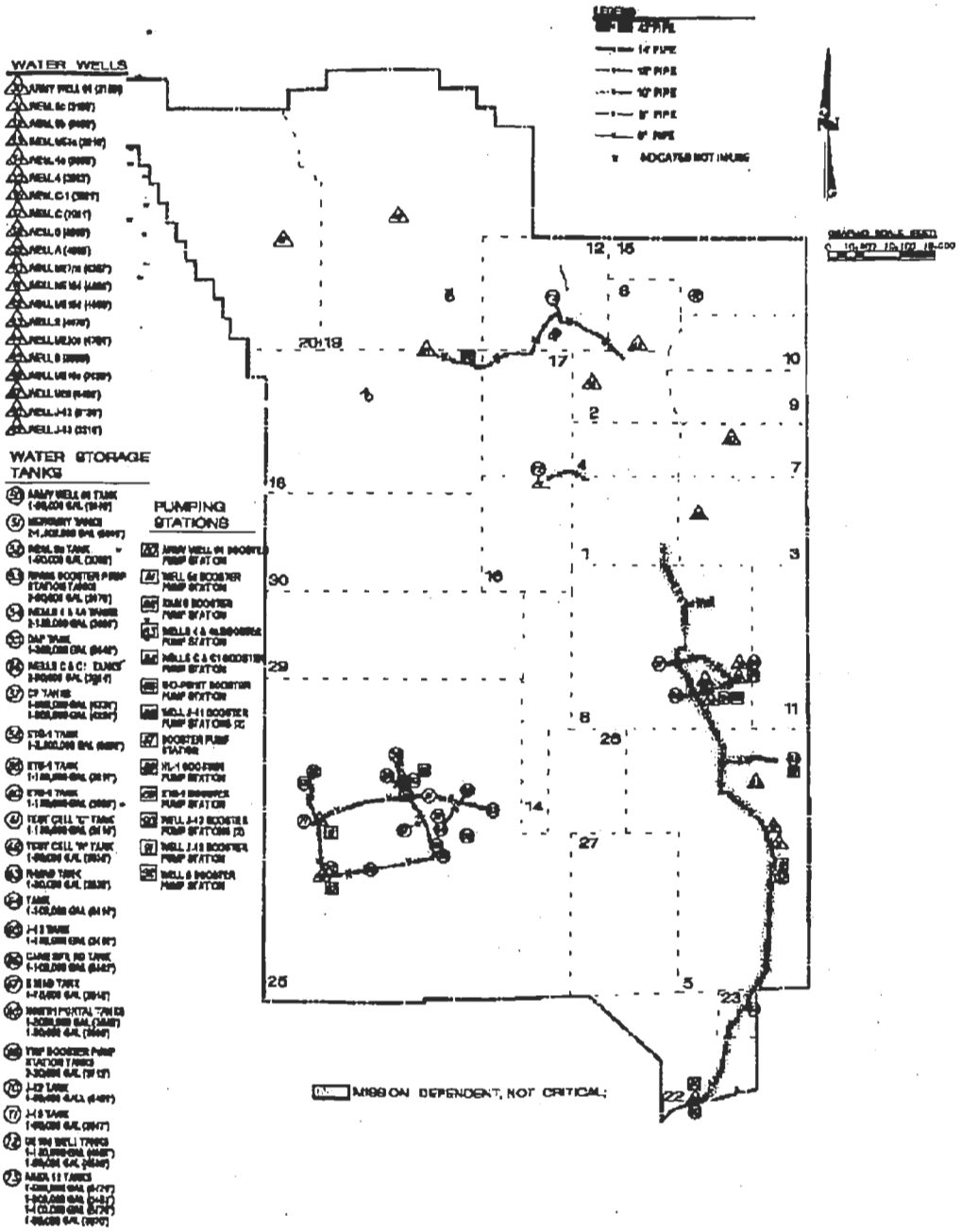

Figure 2-13: Nevada Test Site Water Systems

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Figure 2-14: Nevada Test Site Paved Road System

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Figure 2-15: Nevada Test Site Fiber Optic System

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Exemption 2

Figure 2-16: Nevada Test Site Microwave System

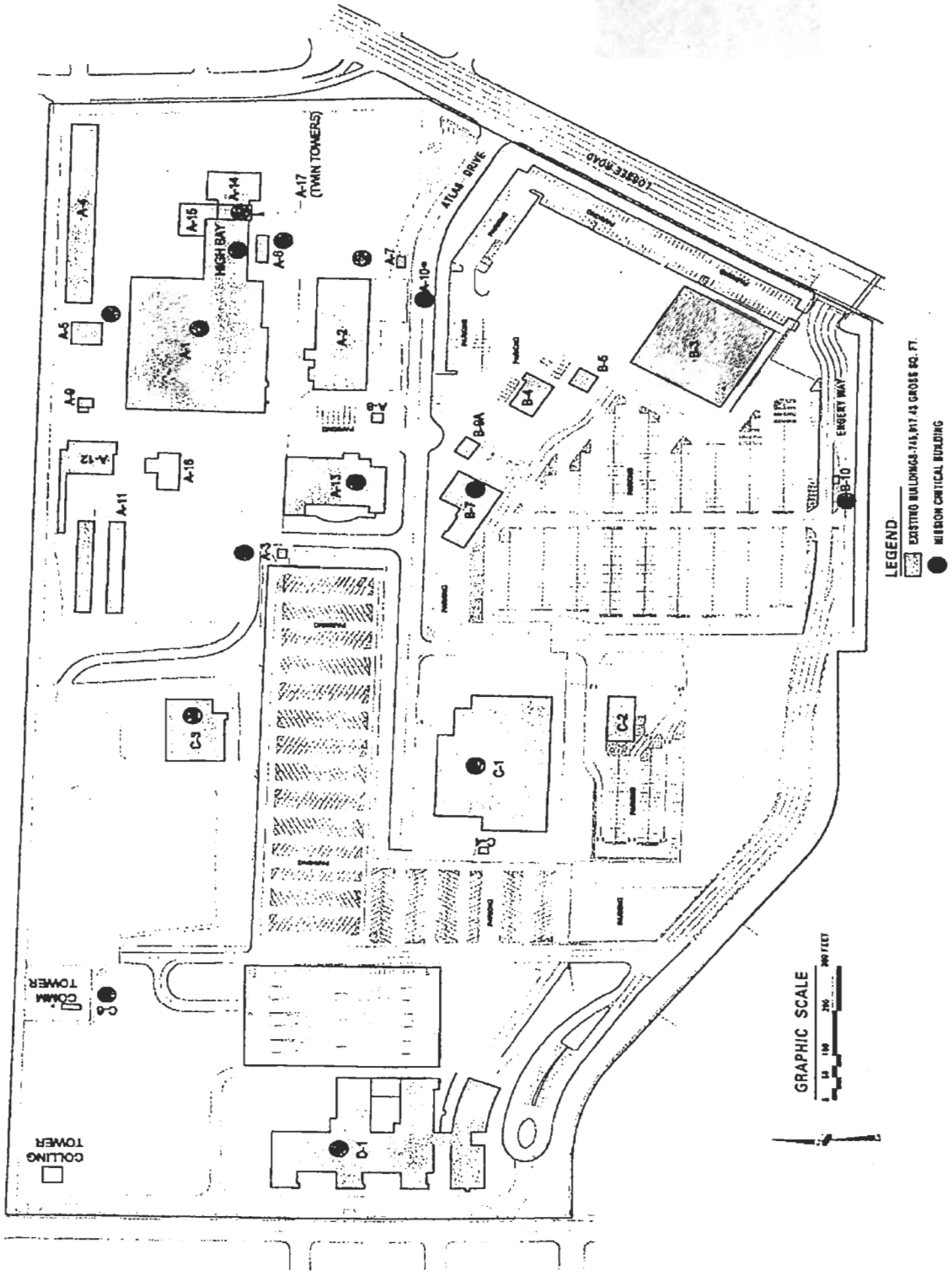

Figure 2-18: North Las Vegas Facility Existing Site Plan

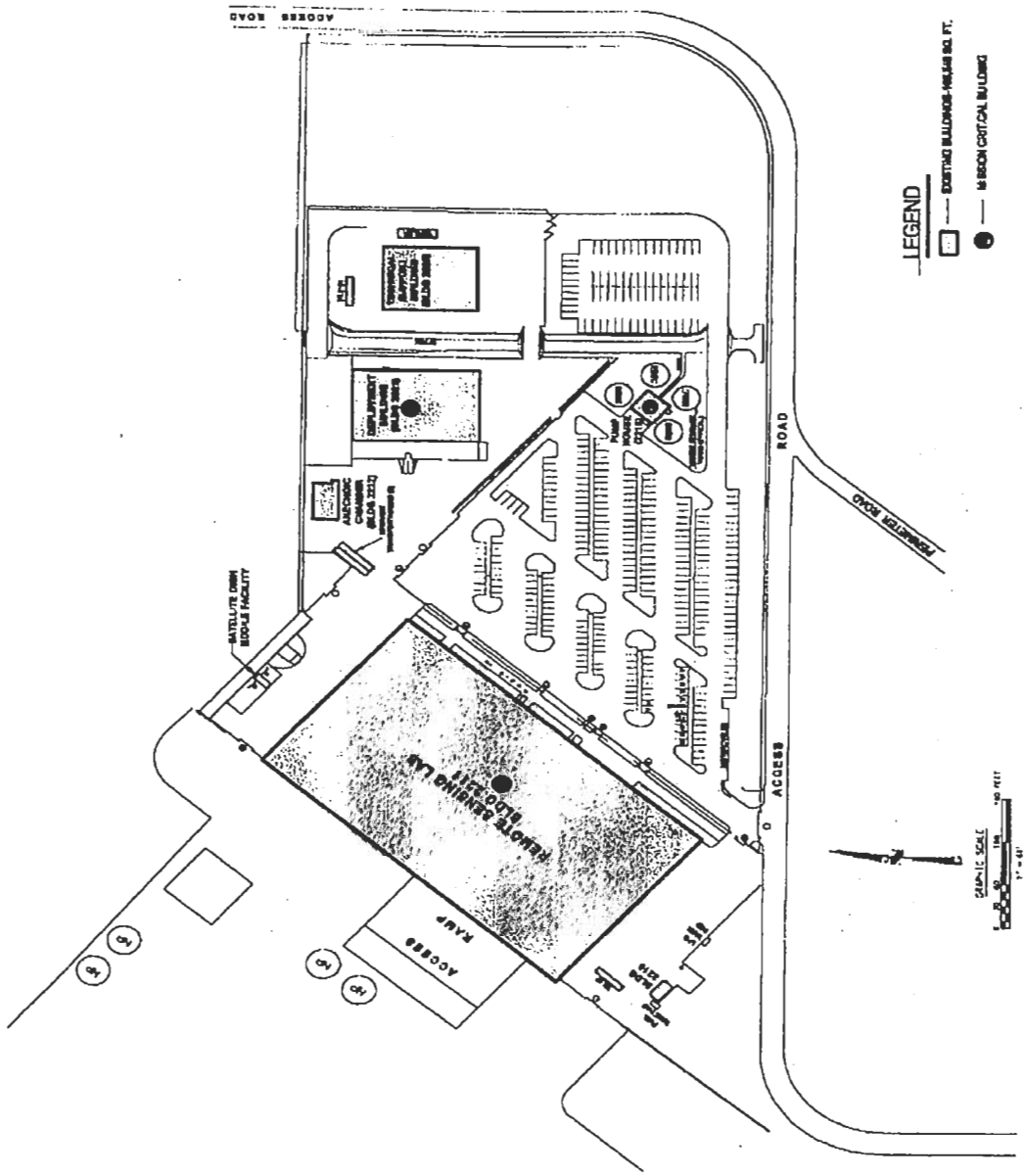

Figure 2-19: Remote Sensing Laboratory-Nellis Existing Site Plan

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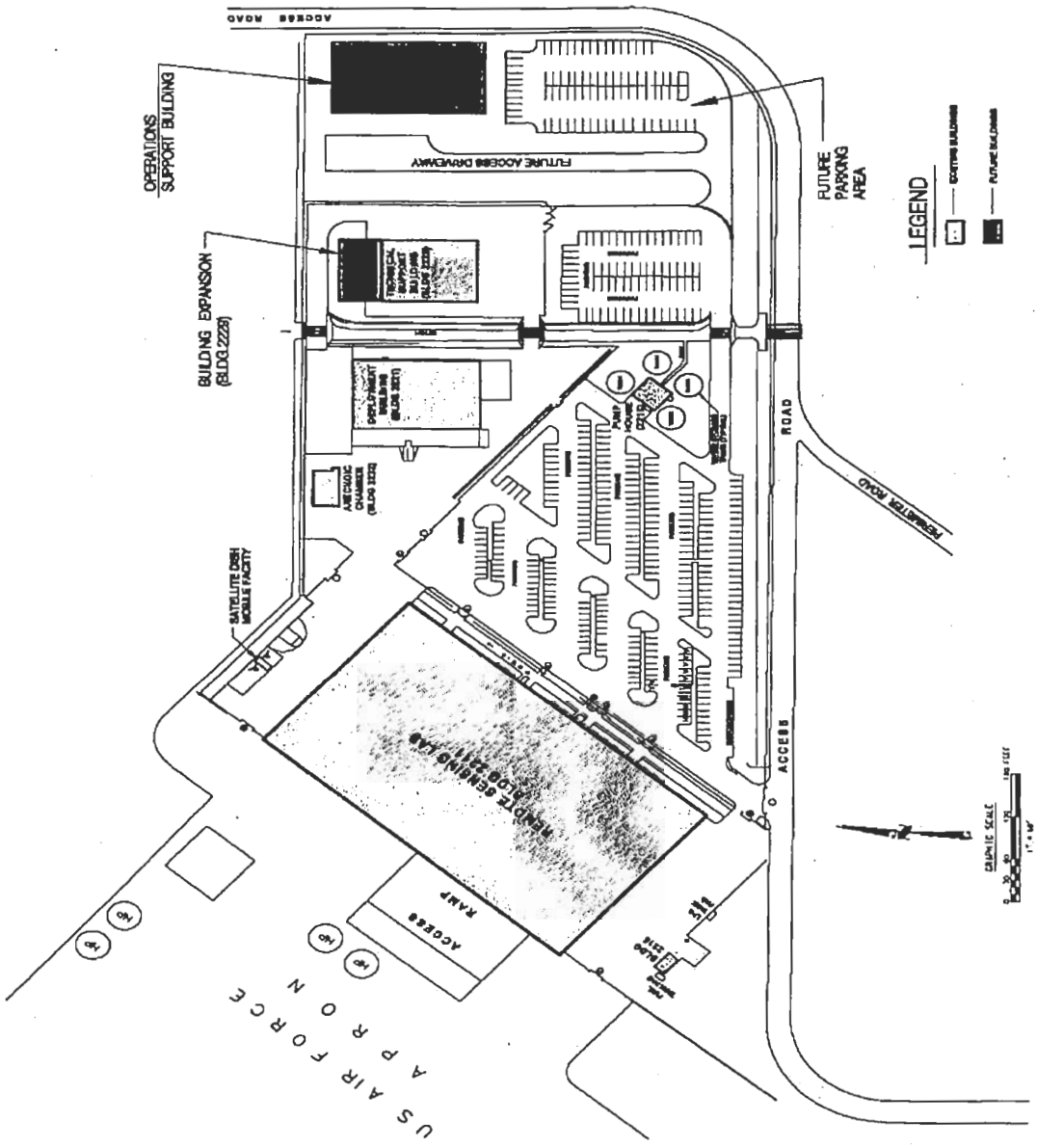
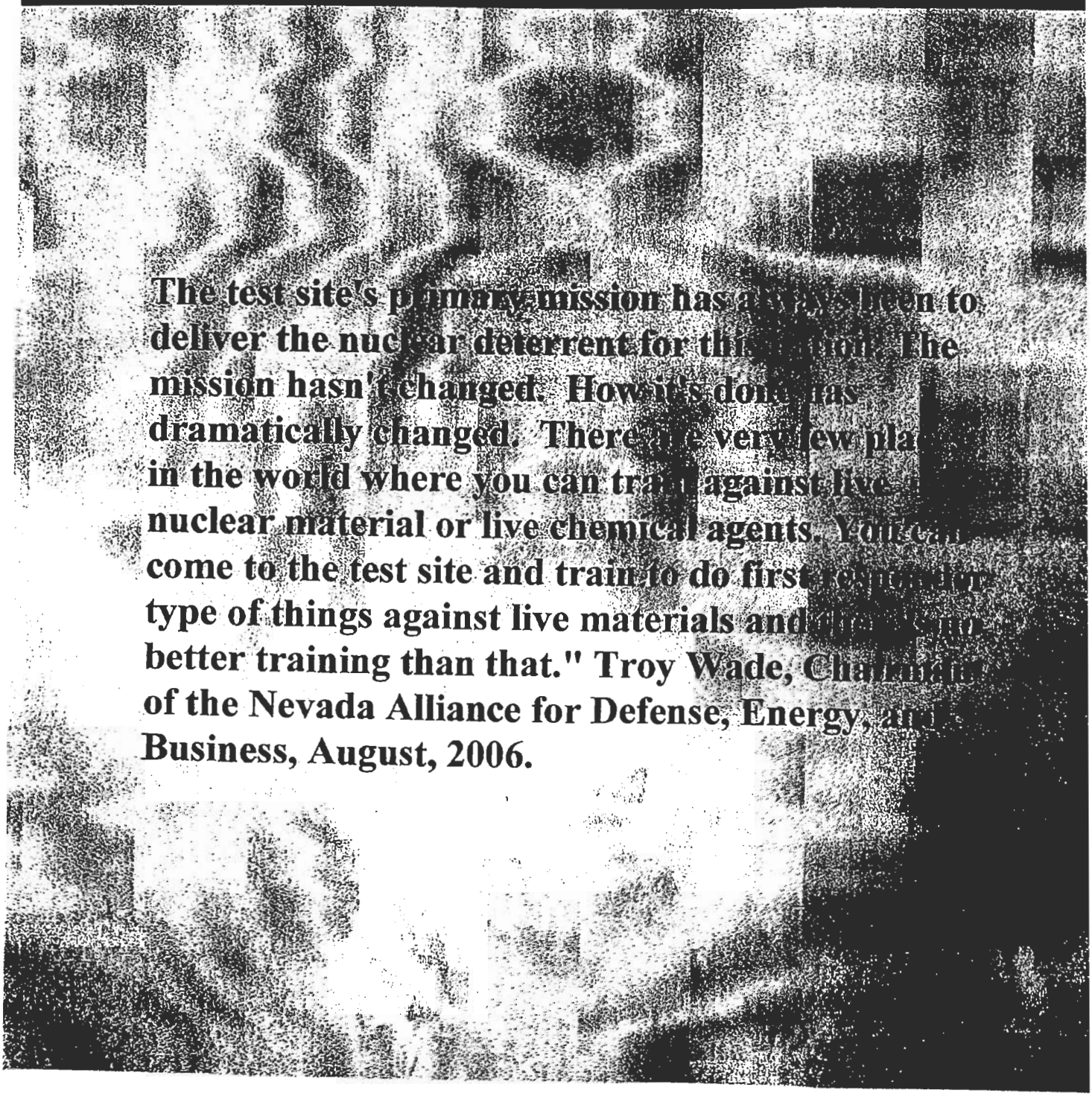


Figure 2-20: Remote Sensing Laboratory-Nellis Future Site Plan

Mission Needs/Program Description

Frozen Waterfall near Captain Jack Spring

FY 2008 NNSA/NSO
Ten-Year Site Plan



The test site's primary mission has always been to deliver the nuclear deterrent for this nation. The mission hasn't changed. How it's done has dramatically changed. There are very few places in the world where you can train against live nuclear material or live chemical agents. You can come to the test site and train to do first response type of things against live materials and there's no better training than that." Troy Wade, Chairman of the Nevada Alliance for Defense, Energy, and Business, August, 2006.

3.0 Mission Needs/Program Description

3.1 Current Mission, Programs, and Workload

Chapter Overview

- Discusses National Stockpile Stewardship Program with campaign details
- Describes Readiness in Technical Base and Facilities with facility details
- Discusses Homeland Security and Defense Applications Program with focus area and facility details
- Discusses Environmental Management Projects and support facilities
- De nes mission-critical facility linkages to Infrastructure mission needs
- Presents projected future programs and missions impacts

The Nevada Test Site (NTS) and associated activities draw together a unique team comprised of the U.S. Department of Energy (DOE), National Nuclear Security Administration/Nevada Site Of ce (NNSA/NSO), National Security Technologies, LLC (NSTec), 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/NSO National 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/NSO provides the direction and oversight to execute the complex coordination to support the mission requirements between all the organizations. NSTec is responsible for providing much of the programmatic infrastructure, personnel, testbed, and diagnostics needed to execute the programmatic work. NSTec 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 NSTec is grouped into two major programs: Stockpile Stewardship Programs and Operations and Homeland Security and Defense Applications 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 re ect the strategic and tactical objectives of the NNSA in maintaining the nuclear stockpile. NSTec and the National Weapons Laboratories re ne the scope of work and areas of responsibility between one another to execute the NTS experiments in support of the NNSA plans.

NSTec's facility and infrastructure planning activities ensure that the NTS maintain 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. NSTec efforts also are focused on creating a sustainable future by developing a broad and varied project base that complements Stockpile Stewardship mission capabilities.

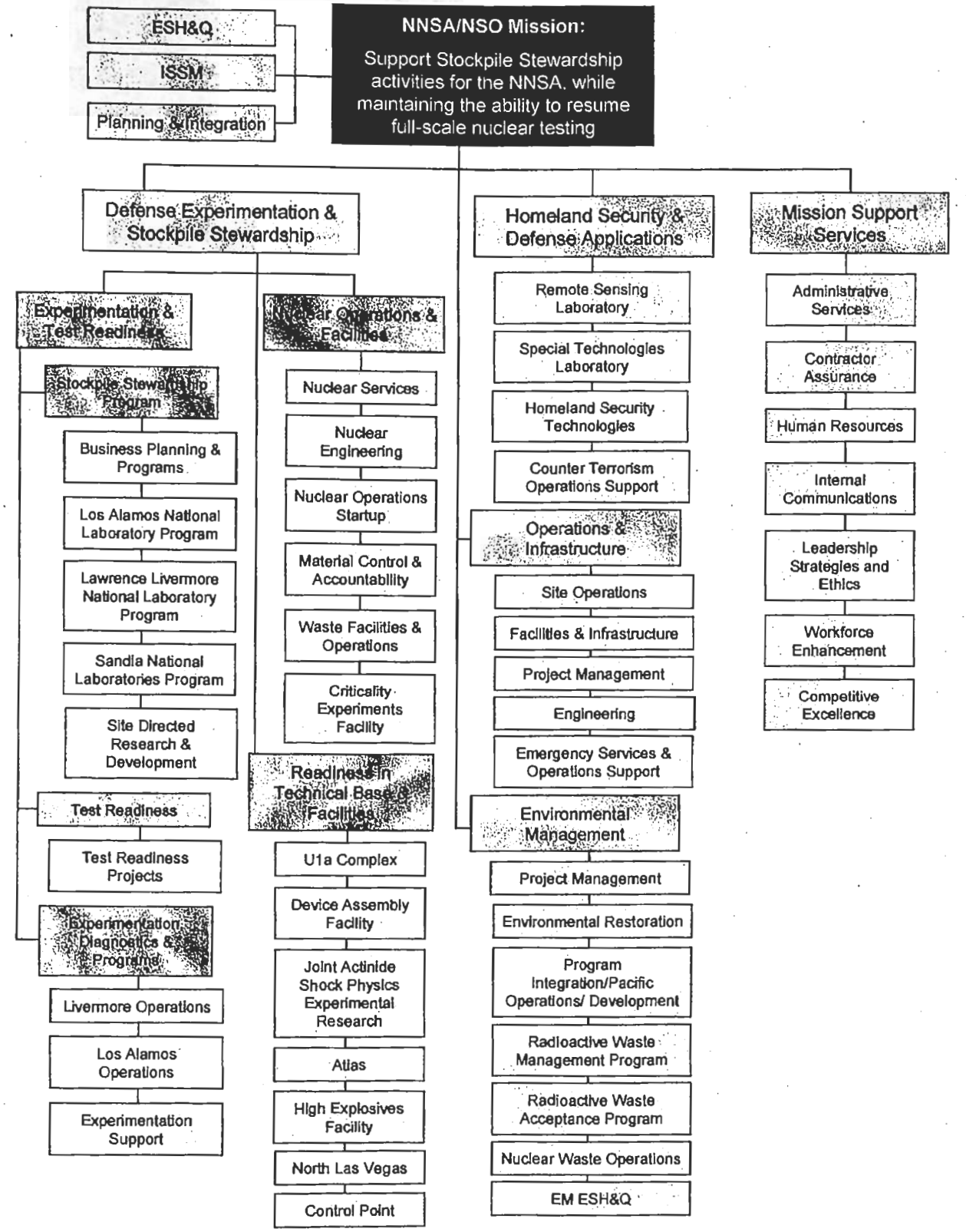


Figure 3-1: NSTec Organizational Structure to support NTS Mission, Programs, and Activities

The following sections of this chapter discuss these programs, de ne 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 Of ce of Management and Budget Evaluation to ensure suf cient 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 speci c program direction and initiatives for the planning period, tasks speci c 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 de ne rst principle understanding of the stockpile and validate simulation codes.

Inspection of G-Tunnel Interior

3.1.1.1 National Stockpile Stewardship Program

NSTec 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 Directed 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 Directed Stockpile Work scope falls within the Stockpile Services Directed 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 Directed Stockpile Work Research and Development Program Stockpile Services, is to develop and execute subcritical experiments and other highly diagnosed dynamic experiments, as de ned by the Principle Investigators of the National Weapons Laboratories in support of their certi cation milestones. The work scope includes support

for subcritical and high-explosive pulsed-power experiments and 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 con nement vessels speci cally designed to contain the expended plutonium during and after the detonation. Diagnostics are tailored to the speci c experiments.

The Lawrence Livermore National Laboratory subcritical experiments program plan switched 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 are immersed in a high magnetic eld which, in turn, lead to magnetic pressure in the sample. To reach the pressures of interest, electrical currents of many mega-amperes are required. Lawrence Livermore National Laboratory uses 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

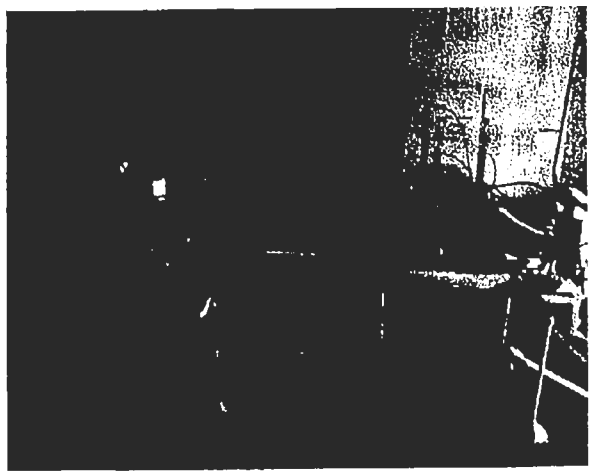
- Support the Los Alamos National Laboratory's joint milestone for developing the equation of state for plutonium.
- Refurbish the Cygnus machines in the U1a .05 drift.
- Prepare the .05 drift diagnostic area for a series of subcritical experiments to be conducted in vessels behind the Armando barrier in FY 2007.
- Support the Los Alamos National Laboratory's effort to develop and eld 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 suf cient 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 National Weapons Laboratories and the NTS.

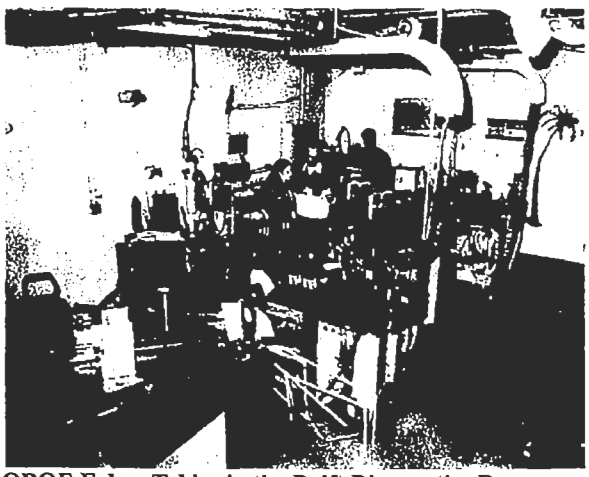


Dense Plasma Focus

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 Certi cation 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 certi cation, weapons effects, and stockpile surveillance missions. Work elements include:

- Advanced subcritical experiments diagnostic development support, including Velocity Interferometer System for Any Re ector 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 ring.
- Arming and ring.
- Pulsed power component testing.
- Linear transformer design source development.
- Gas gun diagnostics and experiments.



OBOE Fabry Tables in the Drift Diagnostics Room

3.1.1.1.2 Campaigns

NSTec actively supports three NNSA Campaigns: (1) Science Campaign, (2) Inertial Con nement Fusion and High Yield Campaign, and (3) Pit Certi cation and Manufacturing Campaign. These campaigns focus on scienti c and technical efforts to develop and maintain capabilities critical for continued certi cation of the weapons stockpile. These campaigns are technically challenging, multifunctional efforts that involve de nitive milestones, speci c work plans, and speci c end dates. Following are brief discussions of each of the three campaigns.

Science Campaign Subprograms

Science Campaign Subprogram 1 - Primary Assessment Technology

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

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

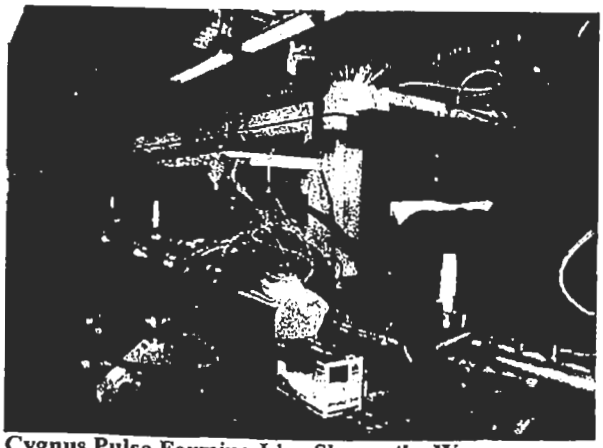
- Develop capabilities and understanding necessary to apply Quantitative Margins and Uncertainties as the certi cation methodology for the nuclear explosive package.
- Assess uncertainties in the prediction of weapons performance as the basis for priorities for further improvements in models and physical research.
- Develop and experimentally validate models of physical properties and processes to improve the delity 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 scienti c 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 scienti c investigations at the national laboratories in understanding physical properties and processes required to support the goals of stockpile stewardship.
- Establish and maintain scienti c collaborations and exchanges in areas supportive of the NNSA mission with the U.S. Department of Energy National Weapons Laboratories, and other national and international scienti c 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 Certi cation Plan and is intended to help highlight the relationship between Campaign 1 deliverables and NNSA mission requirements.

- MTE 1.0 Certi cation and Quanti cation of Margins and Uncertainty



Cygnus Pulse Forming Line Shapes the Wave

- 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-Perot velocimetry recordings, oscilloscope lm records, and high-speed waveform recorders) from subcritical experiments and historical nuclear tests; (2) develop analysis algorithms and software for uncertainty error analysis, interactive lm reader, and plutonic doppler velocimetry diagnostic; and (3) test, evaluate, and calibrate instruments used for measuring data.

Implosion Hydrodynamics (MTE 1.2)

- Lawrence Livermore National Laboratory Diagnostics Development
- Lawrence Livermore National Laboratory subcritical experiments Research and Development
- Control Systems
- Advance Sensor
- Lawrence Livermore National Laboratory Dynamic Experiments

Reactivity/Fission (MTE 1.3)

- Phoenix High-Explosives Pulsed-Power experiment program

Los Alamos National Laboratory Program

Certification and Quantification of Margins and Uncertainty (MTE 1.0)

Nuclear Event Analysis: support the Legacy Data Analysis and Archiving efforts under Campaign 1. NSTec works with Los Alamos National Laboratory scientists to process and analyze historic underground test data, modernize related analysis codes, convert data sets to electronic formats, and certify nal reports.

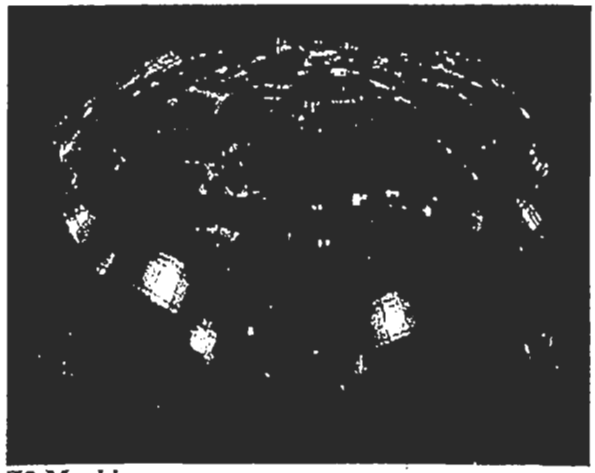
Science Campaign Subprogram 2 - Dynamic Materials Properties

The Dynamic Materials Properties Campaign will provide physics-based, experimentally validated data and models required to guide and benchmark the development of models for all stockpile materials at the level of accuracy required by the Primary, Secondary, and Engineering Certi cation Campaigns. The measurement of fundamental materials properties is essential to establish suf cient con dence in the materials models used in next-generation simulations codes so that such simulations can provide predictive relationships between materials processing and properties and stockpile performance, safety, and reliability. The Dynamic Materials Properties Campaign provides the experimental data necessary for development of models and physical databases for stockpile and other relevant materials in support of the Primary and Secondary Assessment Campaigns (Campaigns 1 and 4), Directed Stockpile Work programs, the Advanced Simulation and Computing Campaign (Campaign 11), and the Inertial Con nement Fusion Campaign. These data lead to well-validated physics-based, predictive descriptions of materials performance and properties; both guiding and benchmarking the development of such models and databases. Critical to these activities is the characterization of materials, as well as predictability and control in their manufacture. Campaign 2 continues to develop new capabilities and experimental techniques to meet the challenges of its mission, as de ned by the needs of Campaign 1 and Campaign 4 for quanti cation of margins and uncertainties. Campaign 2, in this regard, frequently exploits the facilities and techniques developed in other campaigns; for example, the use of Inertial Con nement Fusion Campaign's high-energy-density facilities to study materials properties at extreme conditions.

NSTec and NNSA/NSO provide resources for diagnostics development, experiment execution, and data acquisition/analysis to Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Sandia National Laboratories with principal impact to MTEs 2.1, 2.2, and collateral contributions to other MTEs, Science Campaigns, and Directed Stockpile Work.

Plutonium (MTE 2.1)

Activities in MTE 2.1 are focused on obtaining the necessary thermodynamic data (equation-of-state, phase diagram, melt, etc.) for plutonium to a level of accuracy as required to support the goals of the Primary and Secondary Assessment Campaigns, Pit Certi cation, Directed Stockpile Work programs and Advanced Simulation and Computing. MTE 2.1 work scope includes Joint Actinide Shock Physics Experimental Research experiments (at the NTS) supporting Lawrence Livermore National Laboratory and diagnostic development and shock physics experiments on the Z and Z Refurbishment Machine (at Sandia National Laboratories) as part of Sandia National Laboratories Science Campaign activity (Sandia National Laboratories above ground 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 re ector. Sandia National Laboratories Science Campaign work in support of Isentropic Compression Experiments involves fast velocity interferometer system for any re ector diagnostics development and elding, 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.



Z2 Machine

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 ow, 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 eld measurement, visible imaging, Velocity Interferometer System for Any Re ector, and ber 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, elding these systems, and collecting data at single and two-stage gas guns and explosive facilities at Los Alamos National Laboratory, NSTec's Special Technologies Laboratory, and Joint Actinide Shock Physics Experimental Research, ultimately migrating these diagnostics to Los Alamos National Laboratory sub-critical experiments.

Lawrence Livermore National Laboratory Program (MTE 2.2)

- Joint Actinide Shock Physics Experimental Research Experiments: 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 Re ector, Photonic Doppler Velocimetry, and Thermal equation-of-state (High T/low Rho) experiments.

Los Alamos National Laboratory Program

Los Alamos National Laboratory Dynamic Shock Experiments

- Build Photonic Doppler Velocimetry for gas gun experiments.
- Use re ectometer on tin gas gun shots.
- Build compact Velocity Interferometer System for Any Re ector for Brookhaven National Laboratory experiments.

Atlas Pulsed-Power Facility

The Atlas Pulsed-Power Facility was placed in standby mode at the end of the third quarter of FY 2006 as directed by Los Alamos National Laboratory. The capability to restart the Atlas Pulsed-Power Facility on short notice is to be maintained, considering both facility availability and personnel issues.

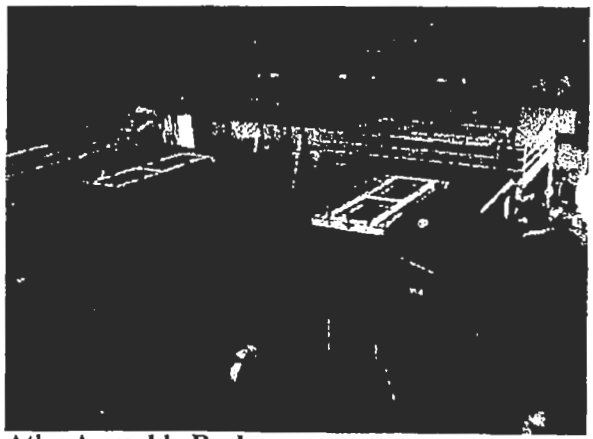
Joint Actinide Shock Physics Experimental Research

Los Alamos National Laboratory has expressed a desire to conduct additional experiments in outyears.

Large Bore Powder Gun

Discussions are underway with Los Alamos National Laboratory to support the development of large bore powder guns at the Los Alamos Ancho Canyon site.

In FY 2007, NSTec will assist Los Alamos National Laboratory by preparing a subcritical test bed at U1a to conduct subcritical experiments in



Atlas Assembly Racks

FY 2008. Later experiments, likely to occur in the existing 03 Krakatau drift to capitalize on existing infrastructure, will be multiple powder guns red simultaneously to obtain data from a variety of experiments in a short time.

Sandia National Laboratories Program

Scope elements

- Fast Velocity Interferometer System for Any Re ector Design.
- Z Preheat (High and Low Temperature) Heating.
- Experiment Chamber Containment.
- Dynamic X-ray Diffraction.
- Linear Transformer Design Isentropic Compression Experiments Small Pulser Development.
- Fast Pyrometry.
- Velocity Interferometer System for Any Re ector Data Analysis.

Outyear scope includes supporting Sandia National Laboratories for the following reasons:

- Perform Isentropic Compression Experiments and Hugoniot Experiments on Z-Refurbishment Machine to greater than 8 megabar pressures, and extend deuterium and H-D mixtures to greater than 2 megabar.
- Determine the strength of high-impedance materials under Isentropic Compression Experiments and shock loading.

VITO Cable Disassembly

- Measure the strength and material structure of dynamically re-frozen high impedance materials.

Science Campaign Subprogram 3 - Advanced Radiography

The Advanced Radiography Campaign supports the following goals and objectives of the science campaigns:

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

- Develop capabilities and understanding necessary to apply Quantitative Margins and Uncertainties as the certi cation 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 delity 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 Weapons 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 scienti c 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 scienti c investigations at the National Weapons Laboratories in understanding physical properties and processes required to support the goals of stockpile stewardship.
- Establish and maintain scienti c collaborations and exchanges in areas supportive of the National Nuclear Security Administration mission with the U.S. Department of Energy National Weapons Laboratories, and other national and international scienti c institutions, including foreign entities with whom National Nuclear Security Administration has mutual defense agreements.

This is accomplished in the following ve 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 Certi cation.

Los Alamos National Laboratory Program

Dual Axis Radiographic Hydrodynamic Test II (MTE 3.1)

- NSTec will 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)

- Personnel supported experiments at Line C during the 2005-2006 run cycle by providing troubleshooting support during the experiments, image analysis, and reporting.

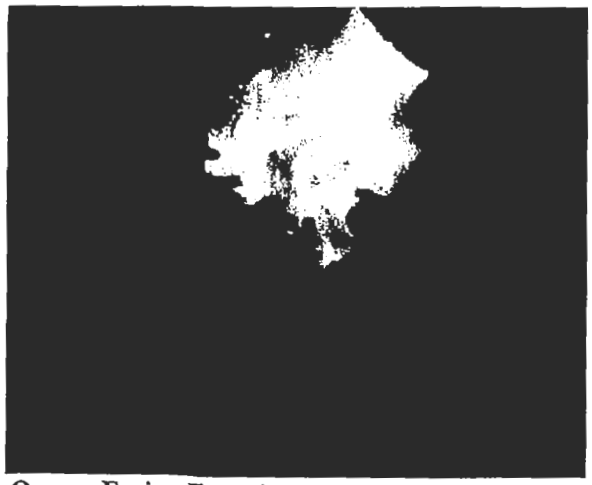
Science Campaign Subprogram 4 - Secondary Assessment Technology

The goal of the Secondary Assessment Technologies Campaign is to advance secondary assessment through development of modern tools and analysis required for identi cation 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:

- Radiation emission from the primary (supported by MTE 4.1).
- Effects of case performance (MTE 4.2).
- Radiation ow to the secondary (MTE 4.3).
- Secondary implosion (MTE 4.4).
- System output through the emission of radiation and debris kinetic energy (MTE 4.6).
- Stewardship Grants Program (MTE 4.5).

Radiation Flow (MTE 4.3)

The purpose of this MTE is to determine other (i.e., in concert with MTE 1) effects of energy ow; including a validated predictive model capability for energy ow associated with primary explosion through to secondary explosion. Design and activation of calibration facilities and advanced diagnostics development for above ground experimental applications supporting High Energy Density science are a primary contribution of the NTS. NSTec supports both Sandia National Laboratories and Lawrence Livermore National Laboratory High Energy Density experiments. Major focus of the Lawrence Livermore National Laboratory effort is in (1) providing Lawrence Livermore National Laboratory High Energy Density experiment support to eld experiment diagnostics and perform shot-day technical services, and (2) developing High Energy Density diagnostics and maintaining core calibration facilities that support Lawrence Livermore National Laboratory above ground experiments. Major focus of the Sandia National Laboratories effort is in Z-pinch radiation and neutron diagnostic development and calibration.



Omega Fusion Experiment

Lawrence Livermore National Laboratory Program

Lawrence Livermore National Laboratory Secondary Assessment Technology:

- The Experiment Support subproject works with Lawrence Livermore National Laboratory Defense Nuclear Technology to conduct code veri cation and validate shot-day technical services are provided at the Omega Laser Facility at Rochester, New York.
- The Advanced Diagnostics subproject builds and calibrates high-resolution diagnostics for laser experiments.
- The Calibration Facilities subproject builds, operates, and maintains the core calibration facilities for Stockpile Stewardship Secondary Assessment as an element of Campaign 4.3.
- The Testing and Calibration Services subproject provides technical services to systemize, test, characterize, and calibrate diagnostics systems for use on laser weapons experiments.

Outyear scope includes:

- Develop diagnostics and calibration techniques to match progression of the National Ignition Plan.
- Perform continuous activation and upgrades of laboratories to match the needs of the National Ignition Plan.
- Complete initial National Institute of Standards and Technology Certi cation reviews of critical methods and procedures.
- Standardize laboratory control, data, and reporting systems.
- Design, build, and activate a neutron calibration source with Lawrence Livermore National Laboratory/Sandia National Laboratories participation.
- Complete activation of the suite of calibration facilities at NSTec Livermore Operation, Lawrence Livermore National Laboratory, North Las Vegas, Special Technologies Laboratory, and Brookhaven. Calibration laboratories will be accessible throughout the Stockpile Stewardship Program Complex.

Short Laser Pulse Laboratory

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 environments (principally for radiation and secondaries, but also of bene t to Inertial Con nement 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 test 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 lm; maintenance of a "core radiation" diagnostics suite for optical, X-ray, neutron detectors, and calibration capabilities); and (2) NSTec provides design, engineering, fabrication, experiment elding, 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 spectral diagnostics.
- 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 strategy for radiation, neutron, and Electromagnetic pulse shielding of National Ignition Facility diagnostics and mitigating the X-ray generated debris produced by National Ignition Facility diagnostics.
- 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 the Nuclear Test Readiness Program at the National 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 direction to do so. A transition to 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 move the time to execute the next nuclear test to 36 months or beyond. Nuclear Test Readiness was carried as a key component of Science Campaign 1 in FY 2005 and was moved to Science Campaign 5 as a separate entity in FY 2006.

Numerical Control Machining during Experimental Support

This Nuclear Test Readiness activity is subdivided into ve MTEs. Nuclear Test Readiness includes activities to be executed by the National Weapons Laboratories and NSTec for NNSA/NSO. The following discussions of the ve MTEs describe only NSTec activities.

Planning (MTE 1) provides for veri cation of program activities against continuously re ned requirements. The approach is to develop potential test plans for the current weapons in the active stockpile, validate test scenarios consistent with annual certi cation reviews, maintain the Decision Support System for detailed planning, implement project controls, and ensure that necessary test resources are available. NSTec 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-speci c authorization basis documents to be developed within the period between noti cation to test and test execution. NSTec 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. NSTec supports this effort by participating with the National Weapons 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 NSTec. The program of systematic training includes activities to update diagnostic and recording equipment that has become nearly obsolete; develop and implement

underground nuclear testing-speci c 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 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. NSTec 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 elding an underground nuclear test. NSTec is supporting the management of physical assets on the NTS speci c 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 ring, 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 con rm readiness capability on an annual basis. Currently, NSTec 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
- Diagnostic Equipment Storage
- Post Shot Drilling Equipment
- Emplacement Cranes

Qualifying the Streak Camera for Omega

Operations (MTE 5) provides for the preparation and maintenance of operational assets, planning and execution of training exercises and drills, and development and maintenance of a modern approach to test execution. NSTec activities in MTE 5 include:

- Resumption Planning
- Performing Annual Underground Nuclear Test Readiness Assessment for the NTS
- Maintenance of Personnel Data
- Archiving
- Exercise Program

Campaign 10 - Inertial Confinement Fusion and High Yield Campaign

The primary objective of the Inertial Con nement Fusion Ignition and High Yield Campaign is to develop the science and facilities to achieve ignition, thermonuclear burn, and high-energy density physics conditions in a laboratory setting.

Under MTE 10.3, NSTec collaborates with the Lawrence Livermore National Laboratory's National Ignition Facility Directorate to support the early activation of target bay systems and core diagnostics. NSTec is forming two subproject activities to interface with National Ignition Facility

Target Area Operations and Target Diagnostics teams. These activities pool resources with the National Ignition Facility line organizations and integrated product teams to assemble/test target area equipment and complete core diagnostics assigned to NSTec. These activities are being supported by the National Ignition Facility Director, not by NNSA/NSO.

Campaign 12 - Pit Certification and Manufacturing Campaign

The purpose of the Pit Manufacturing and Certi cation Campaign is to ensure the readiness of the nuclear weapons complex to manufacture and certify pits. The pit is central to weapon performance and the current inability to manufacture and certify a pit puts the nation at risk to support the stockpile into the future. The strategy of the campaign includes reestablishment of the technical capability to manufacture war reserve pits, the establishment of a manufacturing capacity required to support the nuclear weapons stockpile, and the ability to certify newly manufactured pits for entry into the stockpile without the use of nuclear testing.

The primary focus of the NTS effort is to develop and execute subcritical experiments, as de ned by Los Alamos National Laboratory, to meet weapon certi cation requirements. The support provided by NSTec includes project management, test bed construction design, procurement, and operation of diagnostics systems. Funding for Campaign 12 terminated in FY 2006.

Los Alamos National Laboratory Program

The Los Alamos National Laboratory subcritical experiments scope is to develop and execute subcritical experiments, as de ned by Los Alamos National Laboratory, to meet Stockpile Stewardship certi cation requirements. This includes project management, test bed construction, research and development, equipment design and build, procurement functions, and operation of diagnostics systems.

Sandia National Laboratories Program

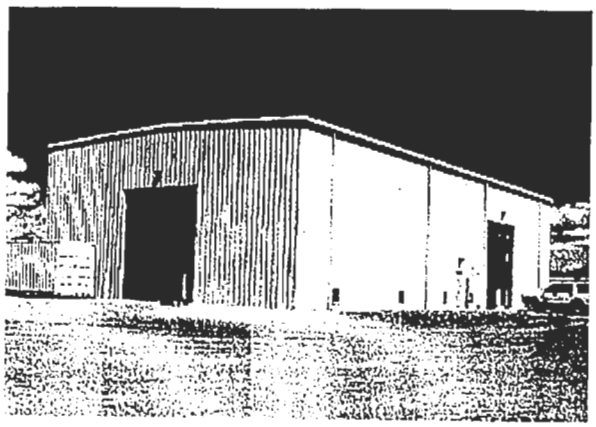
Sandia National Laboratories Diagnostic/Above Ground Experimental activities provide diagnostics development and experiment elding support to Los Alamos National Laboratory subcritical experiments.

3.1.1.2 Readiness in Technical Base and Facilities

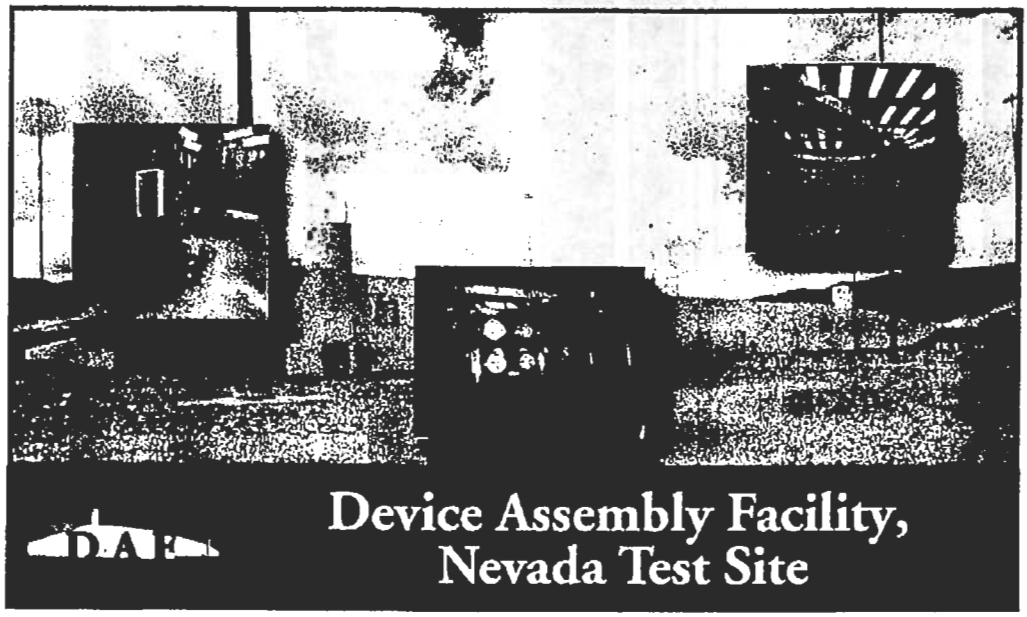
The Readiness in Technical Base and Facilities scope of work includes establishing the physical infrastructure and operational readiness required to perform the Directed Stockpile Work and Science Campaign activities. The two major elements of the Readiness in Technical Base and Facilities program are Operation of Facilities and Program Readiness.

3.1.1.2.1 Operation of Facilities

The Operation of Facilities element includes the cost to operate and maintain "NNSA-owned" programmatic facilities in a 'warm-standby' state of readiness, where the site and each facility is operationally ready to execute programmatic tasks identi ed in Science Campaigns and Directed Stockpile Work. A photograph and description of major facilities follow.



U1a Air Building



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, modi cation, staging, transport, and disassembly for testing of nuclear components and nuclear explosive devices; preparation of subcritical experiment assemblies; and other unique experiments speci ed by laboratory project leaders. Device Assembly Facility activities may also include maintenance, repair, retro t, disassembly, and surveillance of existing or damaged nuclear weapons. The facility consists of of ce 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 became operational in FY 2006. The Device Assembly Facility directly supports Campaigns 1, 2, and 12, and Directed Stockpile Work Stockpile Research and Development, and is a Readiness in Technical Base and Facilities direct-funded mission-critical facility maintained in ready state. The Device Assembly Facility level 3 milestones have been identi ed to support the overall accomplishment and reporting of level 2 milestones. Los Alamos National Laboratory operates a down draft room facility within the Device Assembly Facility. The down draft room supported subcritical experiments which were conducted at the NTS in support of stockpile stewardship. Operations in the down draft room facility include assembly of subcritical experiments and other special assemblies, all of which will include handling uncased plutonium components. The down draft table became 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:

- 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 Critical Experiments Facility, located in Technical Area 18, Security Category I/II and roll-up missions, will be relocated to the NTS. The Los Alamos Critical 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 veri cation, 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 was completed.

To initiate transfer of the Los Alamos Critical Experiments Facility operations, NNSA directed development of a critical decision (CD)-1 package, including conceptual design for modi cation 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 Of ce at the Cheyenne Facility. Preliminary engineering, a preliminary Documented Safety Analysis, a Construction Performance Baseline, and accelerated construction of the Entry 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, nal design commenced.

FY 2006 activities signi cantly increased to complete nal engineering and advanced procurements of selected equipment. A formal request submitted for CD-3 approval of each Line Item construction was approved and construction is scheduled to start in FY 2007.

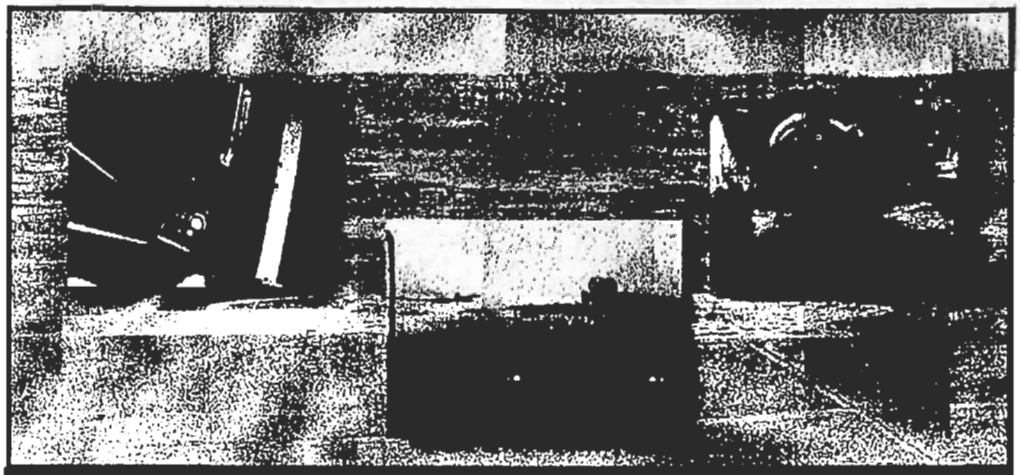
Other Device Assembly Facility buildings will be modi ed later as vaults, as part of the Device Assembly Facility modi cations for the Criticality Experiment Facility.

Several projects have been planned that will improve security at the Device Assembly Facility. In FY 2007, 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 razor wire, improvement of lighting, providing covers for armored vehicles, and a number of video improvements to improve tactical assessment capabilities.

Security measures are being expanded for the Device Assembly Facility. Various security improvements are being implemented to meet requirements of the FY 2005 Design Basis Threat.

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. 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. 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.

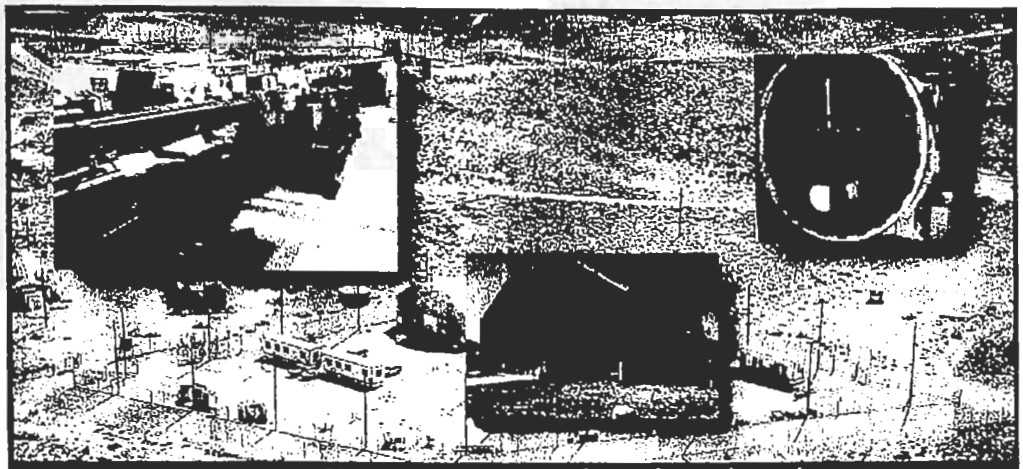
In FY 2008, a Device Assembly Facility Perimeter Intrusion Detection Assessment System Sensor System will be replaced, as it is approaching the end of its useful life.



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.

Subcritical experiments are designed to elicit a greater understanding of high explosives properties, material response, and primary and re ected shock structure, and to examine the effects of such engineering features as welds and surface nish on weapon performance. Subcritical experiments also help ll 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 certi cation 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.

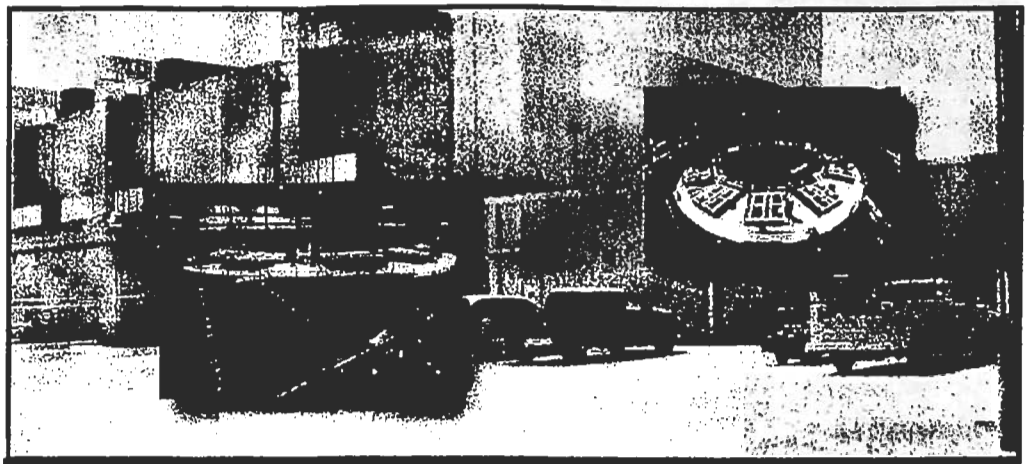


Joint Actinide Shock Physics Experimental Research Facility, Nevada Test Site

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 (speci cally 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 maintained for supporting experiments elded on the Atlas machine. Atlas is a pulsed-power machine for conducting materials properties studies. This machine is designed to meet a broad range of needs in providing 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 scienti c community at large. This machine was relocated from Los Alamos National Laboratory.

The facility that houses Atlas at the NTS began construction in FY 2002 in Area 6 and was ready for hardware relocation later that same year. The Atlas Pulsed-Power Facility is scheduled to go cold standby. Recommissioning was delayed by the Los Alamos National Laboratory shutdown. Atlas is operational following successful completion of phase IV machine characterization experiments, successful elding of the LD-101 and LD-102 experiments and the resolution of Readiness Assessment and Findings, if any. 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 Facilities funds the activities necessary to support the Atlas Pulsed-Power Facility operations and facility warm standby as well as acquisition of operational spares and diagnostics. Also included are operational support, existing facility modi cation, facility warm standby, and acquisition of pulsed-power technology personnel to support experimentation and modi cation of hardware. The Atlas Pulsed-Power Facility has directly supported Campaigns 1, 2, 4, and Directed Stockpile Work Stockpile Research and Development.

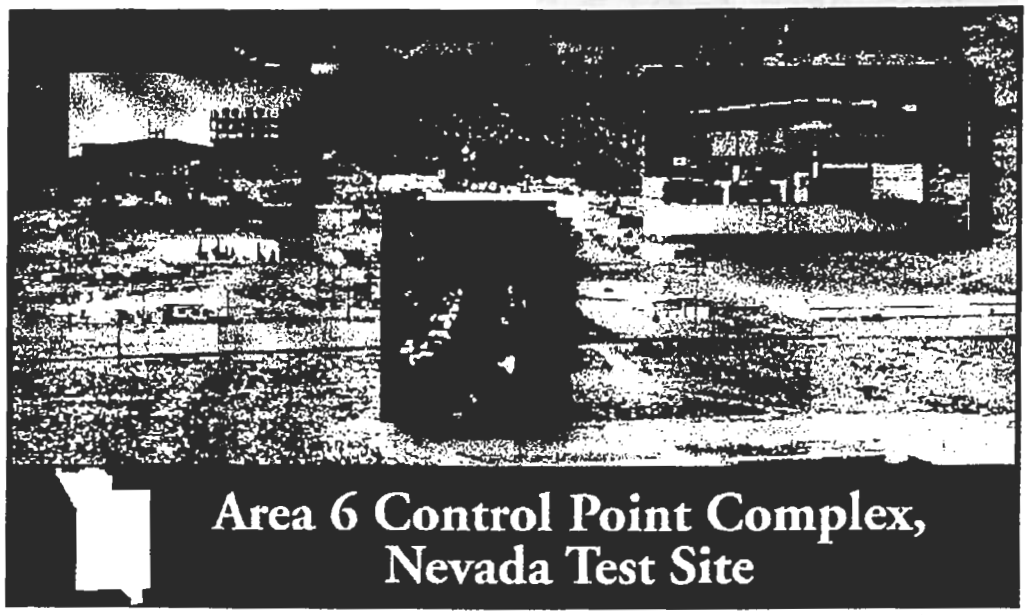
The Atlas machine is designed to meet a broad range of needs in providing high-energy density physics data for assisting in the validation of weapons codes as part of the Stockpile Stewardship Program, and for conducting dynamic materials experiments in the scienti c community at large.

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 certi ed 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 ring table, a camera bunker, a control/diagnostic bunker, and other support facilities.

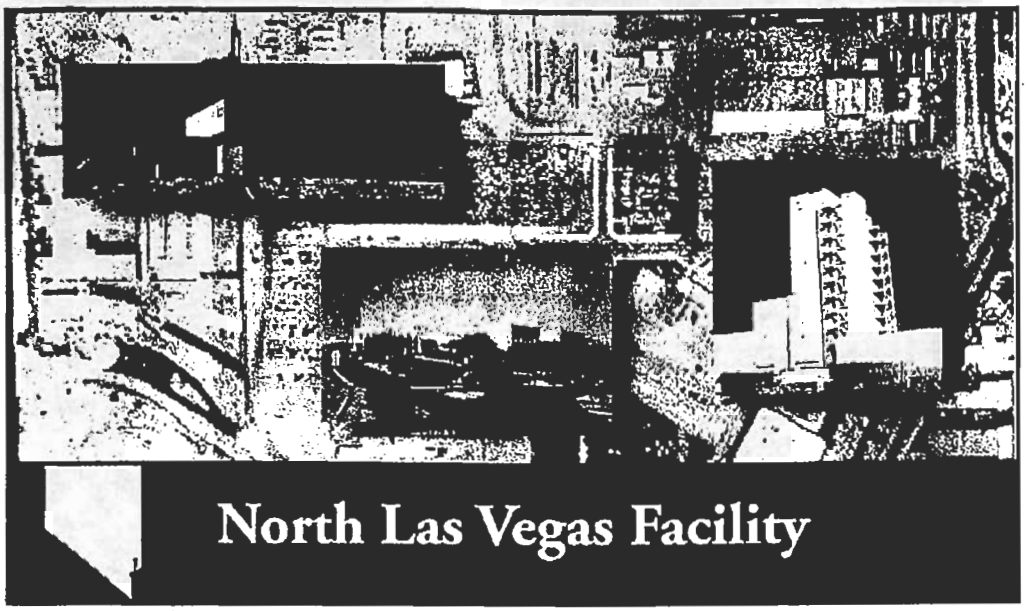
In FY 2005, the diagnostics for the Big Explosives Experimental Facility were upgraded in anticipation of a series of Phoenix-related experiments in support of Directed Stockpile Work.

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 maintained in a mission capable status.



Area 6 Control Point Complex. The Control Point (CP) 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. Speci cally, the Control Point Complex supports operations in timing and ring, 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 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.



North Las Vegas Facility

North Las Vegas Facility. The North Las Vegas Facility is comprised of 31 buildings that support the ongoing stockpile stewardship and nuclear test readiness mission, as well as testing at the NTS.

Three of these buildings are designated as Readiness in Technical Base and Facilities mission-critical to directly support ongoing mission and readiness initiatives. However, there are 13 other mission-dependent, not critical buildings that facilitate the Defense programs mission. Operations and maintenance of the mission-critical facilities are directly supported by Readiness in Technical Base and Facilities funds. The three mission-critical buildings include Building A-1, with its high bay and extension building; Building A-17 Twin Tower and Building C-3 High Intensity Source. These facilities are needed for communications, test fabrication and assembly, radiography, and other diagnostics development. Facility management and support is funded by Readiness in Technical Base and Facilities. Building A-1 and the A-17 high bay and high bay extension are readiness assets that house machine shops and overhead cranes needed to fabricate nuclear test racks. The machine shops are currently used to fabricate subcritical experiment vessels, Joint Actinide Shock Physics Experimental Research Facility target chambers, and radiography parts. Building C-3 houses a light laboratory, stockpile stewardship experimental facilities, and readiness assets. The light laboratories support development and calibration of diagnostics for subcritical experiments and other defense related experiments. The experimental facilities are designed for pulsed-power radiography, and currently house the Tri-MeV, compact marx, and other radiography development hardware.

Historically, the North Las Vegas Facility has been known as ATLAS (Augmented, Test Logistics Assembly System). It was named by Lawrence Livermore National Laboratory when the complex was established during the 1980s to provide in-town infrastructure support for underground test activities at the Site. The North Las Vegas directly supports Campaigns 1, 2, 3, 4, and 12, and Directed Stockpile Work Stockpile Research and Development.

3.1.1.2.2 Program Readiness

Program Readiness includes select activities that support more than one facility, campaign, or Directed Stockpile Work activity, but are essential to achieving the objectives of the Stockpile Stewardship Program.

Logistics

This program includes a wide range of support de ned by each National Weapons Laboratory's Resident Manager. These requirements typically include providing equipment such as vehicles, telephones, radios, computers, and other commodities. In addition, Logistics provides administrative, institutional support staff, technical, photo, computer services, and the manual craft staff necessary to support the National Weapons Laboratory's staff assigned to Nevada.

Other Federal Agencies

This program provides funding to other federal agencies to maintain NNSA's ability to resume nuclear testing at the NTS, in compliance with the Presidential Directive and NNSA performance measures. These agencies support the NTS through weather modeling and prediction, monitoring of downwind communities, and geology/hydrology support.

Program Operations

This Readiness and Technical Base Facility program of ce provides funding for program management, miscellaneous equipment, and operating expenses of the NTS Stockpile Stewardship Program. This support is essential for the execution of Science Campaign activities and Directed Stockpile Work.

Program Operations include the following activities:

- Seismic monitoring and recording of all natural seismic events greater than 3.5 on the Richter scale, experimental explosions greater than 50 pounds, and all subcritical experiments
- Closed-circuit television recording of subcritical experiments

Borehole Closures

There are ongoing efforts to properly close past test and experiment boreholes, in order to be in compliance with Nevada state statutes (regulatory drivers include the Nevada Water Pollution Control statute). Four hundred sixty-nine boreholes were plugged and abandoned from 2000 through 2006 and 100 are planned to be plugged and abandoned during FY 2007. This leaves approximately 260 unused wells and boreholes to be plugged and abandoned at the NTS. All of these wells and boreholes need to be properly plugged and abandoned to ensure compliance with federal and state regulations. If closure activities are not conducted, NNSA/NSO could be in violation of federal and state regulations.

NTS Legacy Compliance

This program addresses environmental issues that resulted from more than 40 years of nuclear testing activities at the NTS. These issues include items that are required by regulatory agencies as well as those that represent "good faith efforts" to avoid potential compliance orders. Failure to complete regulatory required activities (as scheduled) may invoke stipulated penalties or other regulatory action. NTS legacy compliance activities include the following:

- Remediation and containment of legacy issues from past Defense Programs nuclear experiments (regulatory drivers include a *Federal Facility Agreement and Consent Order* with Nevada)
- Demarcation efforts to fence and post radiologically contaminated surface areas at the NTS (regulatory drivers include Title 10 Code of Federal Regulations 835)

Back lling Tanks during Remediation of Corrective Action Unit 219

3.1.1.3 Site and Infrastructure Planning and Projects

NSTec's Site and Infrastructure Planning is responsible for the overall identi cation process for line-item projects, capital construction projects, maintenance and repair projects including safety and security issues identi cation 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 percent).

Site and Infrastructure Planning provides NSTec 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 ef cient, 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 Orders and Presidential Directives for more ef cient 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, which includes Readiness and Technical Base Facilities manages NTS Operations that 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 NSTec, 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 NSTec 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.

Facility Walk Through Prior to Demolition

3.1.1.4.2 Key Support Facilities

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

3.1.2 Homeland Security and Defense Applications

Homeland Security & Defense Applications supports the DOE and NNSA programs and projects that assist the nation to meet national security challenges through the application of scienti c and technical capabilities and infrastructure. To accomplish this mission, projects are executed that use assets at the NTS, as well as two operational centers of excellence. Homeland Security and Defense Applications is organized to perform activities related to the following four key divisions:

- Homeland Security Technologies
- Counter Terrorism Operations Support
- Remote Sensing Laboratories
- Special Technologies Laboratory

Homeland Security and Defense Applications programs encompass emergency response assets, nonproliferation technologies, non-stockpile related test and evaluation, and counter terrorism activities. Homeland Security and Defense Applications 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 rst responders.
- Provide an active program to maintain and expand NTS infrastructure to support counterterrorism activities.
- Design, fabricate, and eld rapid/rugged prototype capabilities to support emergency response in counter terrorism.

3.1.2.1 Homeland Security Technologies

The Homeland Security Technologies Division provides technology development and operational test and evaluation support principally in the areas

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

		Stockpile Stewardship Program - Readiness in Technical Base and Facilities						
	Key RTBF Support Facilities	Directed Stockpile Work	Campaign 1	Campaign 2	Campaign 3	Campaign 4	Campaign 5	Campaign 12
Supporting Infrastructure: Power systems, roads, water systems, communication sys tems, emergency service facil ities, fencing/leading facilities site maintenance/construction shops protective force facilities administrative/technical facilities, and	DAF	●	●	●			●	●
	U1a Complex	●	●				●	●
	JASPER		●	●			●	
	High Explosives Facilities (BEEF & Baker)	●	●	●			●	
	North Las Vegas Facility Complex	●	●	●	●	●	●	●
	Control Point Complex	●	●				●	●
	Atlas Pulsed-Power Facility	●	●	●		●	●	
	Los Alamos Critical Experiments Facility	●	●	●				●

of chemical, biological, nuclear/radiological, and high explosives countermeasures. The Homeland Security Technologies Division's objectives include:

- Provide training and technology to support U.S. Government activities related to nonproliferation technologies.
- Develop technology to support the U.S. Government in counter terrorism activities.
- Provide capabilities, infrastructure, facility, equipment, and diagnostics to support high-hazard, high-security testing and evaluation for DOE and other government agencies.

The Homeland Security Technologies Division consists of six focus areas for achievement of the speci c Homeland Security and Defense Applications objectives: Hard Buried Targets Program, National Aeronautics and Space Administration Test and Evaluation Program, Test and Evaluation – Radiological/Nuclear Counter-Measures Test and Evaluation Complex Program, Special Activities Support, the "G" Tunnel Program, and the Nonproliferation Test and Evaluation Program that are discussed below.

Hard Buried Targets Program

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.

National Aeronautics and Space Administration Test and Evaluation Program

The President of the United States has called on the National Aeronautics and Space Administration for a bold new initiative to put people back on the moon in the near term and eventually to Mars. A necessary precursor to sustained human presence on the lunar surface is the development of infrastructure, power, and water to support them. An initiative to provide these services is by the use of telerobotic construction methods. A lunar analog is highly desirable to test and evaluate telerobotic cap abilities and construction methodologies. Because of the many surface subsidence craters on the NTS, National Aeronautics and Space Administration believes this will be an excellent analog for that test and evaluation program. In addition, several commercial companies have shown an interest in the NTS to test and evaluate promising methods of precision landing and obstacle avoidance systems for lunar landers.

Test and Evaluation – Radiological/Nuclear Counter-Measures Test and Evaluation Complex Program

Technical and operational test and evaluation of radiological and nuclear sensor systems for several government agencies, such as the U.S. Department of Homeland Security, the Defense Threat Reduction Agency and the DOE is performed through this program. This test and evaluation support is conducted on the NTS and at operational test beds throughout the country. Support includes:

- Evaluating system performance against technical standards
- Evaluating system performance from an operational perspective
- Developing test plans, procedures, and protocols
- Analyzing data and developing reports

NTS test and evaluation activities can include using materials up to DOE Safeguards and Security Category I and II at indoor and outdoor testing venues, including special nuclear materials and threat-based devices. Test and evaluation of sensor system performance can be conducted according to requestor speci cations or against national standards utilizing National Institute of Standards and Technology traceable radiological sources.

Emergency Responder Training

"G" Tunnel Project
G Tunnel is maintained in an operational standby mode to support the NNSA Of ce of Emergency Response missions related to attribution for terrorist devices including improvised nuclear devices and radiological dispersal devices. This mission includes maintenance of life safety systems, drills and exercises, and tours that may be conducted as part of the facility's mission.

Special Activities Support
Special Activities Support provides training venues to U.S. Department of Defense, Intelligence, and other federal agencies. These training venues take advantage of the unique features of the Nevada Test Site such as the geology, geography, and tunnel complexes, which replicates real-world interests. These efforts are focused on combating terrorism, counter proliferation, weapons of mass destruction, and critical infrastructure protection. This focus area also supports the development, demonstration, and evaluation of conventional explosives and weapons testing.

Nonproliferation Test and Evaluation Program
The Nonproliferation Test and Evaluation Program 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 through the Nonproliferation Test and Evaluation Complex at the NTS and uses staff and resources from NSTec's two applied technology laboratories, the Remote Sensing Laboratory and the Special Technologies Laboratory, providing precision diagnostics and characterization of conditions for experiments. The Nonproliferation Test and Evaluation Program supports NA-22's technology programs at several National Weapons 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 Nonproliferation Test and Evaluation Program also works closely with the Counter Terrorism Operations Support program at NSTec, in a mutually bene cial arrangement to build infrastructure to support the Nonproliferation Test and Evaluation Complex activities.

Lawrence Livermore National Laboratory Support of Nonproliferation Test Evaluation

3.1.2.2 Counter Terrorism Operations Support

The U.S. Department of Homeland Security is a key sponsor of training activities at the NTS. The NTS provides a remote and restricted access area for weapons of mass destruction radiological/nuclear prevention and response training in a realistic environment. The NTS hosts training and exercises for federal, state, and local responder personnel as well as the National Guard, military, and other agencies as requested to assist responders during weapons of mass destruction radiological/nuclear incidents and in the prevention of such incidents. State and local responders include such groups as re, police, hazardous materials teams, and medical teams. The focus of training and exercises is on realistic, hands-on, scenario-based classroom and eld training to meet the requirements of the U.S. Department of Homeland Security Response and Prevent mission activities.

3.1.2.3 Remote Sensing Laboratory

The Remote Sensing Laboratory has primary facilities and operations located at Nellis Air Force Base, Nevada, with satellite operations at Andrews Air Force Base, Maryland. The Remote Sensing Laboratory's mission is to support National Security with technical and operational solutions

in Remote Sensing, Nuclear Emergency Response, Nuclear Nonproliferation, and Security Systems Technologies.

The Remote Sensing Laboratory provides proven, leading edge technical solutions and response capabilities to DOE/NNSA and work for others customers to combat terrorism, prevent and mitigate a nuclear or radiological event, and address challenges in support of national security. Capabilities include radiological emergency response; radiological and image data collection and analysis; aviation platforms and support; Geographic Information Systems; highly specialized and unique engineering research and development; technical training; and component and prototype development and testing.

Laboratory operations include high-power lasers; physics; electronics; microelectronics; sensor testing; aerial and still photography services; an anechoic chamber, and environmental simulation, as well as centers for rapid prototyping and intrusion sensors. In order to perform the diversi ed projects that are requested, these laboratories have a highly trained and experienced staff of scientists, engineers, technicians, and support personnel.

Radiological Emergency Response

Since 1974, the Remote Sensing Laboratory has responded to national and international nuclear emergencies and readiness exercises. Personnel provide search and render safe operations support for domestic or foreign nuclear material, weapons, or devices. They provide on-scene scienti c and technical advisory services, support the resolution of domestic and international nuclear and radiological incidents, and perform advanced surveys to look for radiological anomalies in survey areas. Consequence Management personnel provide expertise and technical resources to the DOE/NNSA in response to radiological emergencies involving dispersal of radioactive materials. Consequence management teams provide on-scene scienti c and technological advisory services to assess and resolve or mitigate a nuclear-radiological incident, emergency, or terrorist attack.

Aerial Measuring System

The Aerial Measuring System is based and operated out of the Remote Sensing Laboratory at Nellis with additional capability at Andrews. The Aerial Measuring System aircraft carry automatic navigations systems which are used in synchronization with radiological data acquisition systems that provide real-time measurements of extremely low levels of ground and airborne contamination. Multispectral scanner systems are used in acquiring a wide range of environmental data. The Remote Sensing Laboratory uses image analysis of spectral imagery and applies the technology to monitoring environmental conditions, assessing vegetation stress, and detecting hard/ deeply buried objects, etc.

Radiological Sensor Development and Testing

The Remote Sensing Laboratory provides integrated scienti c and technical products, highly-specialized and unique engineering research and development for radiation detection; component and prototype development; and tests state-of-the-art instruments and standard-setting technologies.

Andrews Operations

The operations at Andrews Air Force Base focus on emergency response in the National Capitol Region for both crisis response and consequence management. Andrews provides specialized support including facility operations, scienti c services, engineering and technical services, project operations support, and aviation operations support. The Radiological Assistance Program, Region 0, is centered at Andrews. Customers include NNSA and other federal agencies.

Aerial Measurement Systems Hurricane Katrina Response

Operator Monitoring a Plume during Flyover

Security Systems Technologies

A key problem for responders to a terrorist situation is gaining access to a physical location. Security Systems Technologies develop and deploy novel systems for access. The Remote Sensing Laboratory also provides realistic training to many government agencies on security sensor systems, specialized tools, and access techniques.

Nuclear Nonproliferation: The Remote Sensing Laboratory works to help prevent the proliferation of radiological Weapons of Mass Destruction through the recovery of radiological materials in Russian Federation and the van and portal monitor maintenance program in various countries.

Information and Communication Technologies

Remote Sensing Laboratory personnel support the design, operation, and maintenance of local, wide area, and satellite communication networks that provide voice, data, and video (live and digitally recorded). These networks are capable of supporting both classi ed and unclassi ed voice, data, and video services in response to emergency operations or exercises. The Remote Sensing Laboratory has also developed a state-of-the-art mobile communication package to provide data, video, and voice communications to emergency response teams anywhere in the world.

Facilities

The Remote Sensing Laboratory-Nellis complex is comprised of 35 secured acres on the Nellis Air Force Base. The land, which belongs to the Air Force, is under lease to the NNSA. Being adjacent to the Nellis Air Force Base runway is particularly advantageous for accommodating NNSA/NSO's nuclear emergency response activities. The complex has six permanent buildings, one structure (Satellite Communications), and three portable trailers. The Remote Sensing Laboratory-Andrews complex is comprised of one main building and a hangar complex.

3.1.2.4 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 Homeland Security and Defense Applications.

Special Technologies Laboratory supports the Stockpile Stewardship and Readiness Programs with development and elding 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, ber 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 eld their diagnostics systems and acquire data from the large-scale physics facilities at the National Weapons Laboratories.

There is a strong technology overlap and sharing of resources between the Stockpile Stewardship and Homeland Security and Defense Applications 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 Homeland Security and Defense Applications projects, and the Stockpile Stewardship and Readiness Program projects bene t greatly from the electronics, software, and systems expertise of the Special Technologies Laboratory National Security Response personnel.

In the Homeland Security and Defense Applications areas, the 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.

Fourier Transform Infrared Spectroradiometer System on Man-lift

3.1.3 Key Support Facilities

Existing facilities at the NTS support a variety of Homeland Security and Defense Applications programs. These facilities make possible a rapid increase in the capability to provide the comprehensive testing, training, and exercise platforms required by the national security community needs.

Appendix A, Attachment G, speci es the facilities that are designated as mission-critical. Key NTS facilities are brie y discussed in the following sections.

Operations Coordination Center

The Operations Coordination Center provides critical information exchange during exercises or real-world events and incidents. The Operations Coordination 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, NSTec 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.

Nonproliferation Test and Evaluation Complex

The Nonproliferation 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 DOE to create "an experimental and analytical research effort, with the eld research to be carried out at the Lique ed Gaseous Fuels Spill Test Facility" (later renamed the Nonproliferation 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 Nonproliferation Test and Evaluation Complex has a unique permit for the release of hazardous and toxic materials for testing under controlled conditions. Uses of the Nonproliferation 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 modi ed as a test bed to develop smart building technologies and to train security personnel in response tactics.

Tunnel Complexes
NSTec, 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.

Los Alamos Test Facility
The Los Alamos Test Facility in Area 11 consists of three earth-covered magazines, an administrative building, and a highbay facility used for Dense Plasma Focus Research and Development.

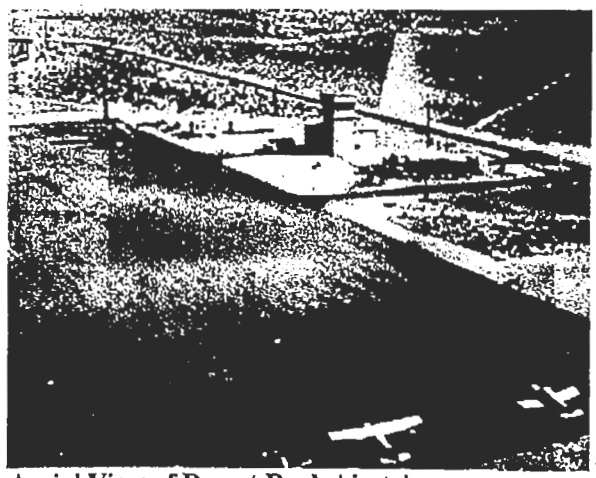
X-Tunnel Experimental Test Chamber
The X-Tunnel was established to collect emissions data under controlled conditions from full-scale open burns and open detonations. The facility is used for environmental testing and dispersion modeling of ef uents from destruction of artillery rounds, missiles, and 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 targets. The fenced compound and adjacent test pads support classi ed energetic experiments.

Desert Rock Airfield
The Desert Rock Air eld 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 are remote enough to allow classi ed exercises to be conducted. Unit readiness projects use the NTS as a large restricted access location for classi ed special U.S. Department of Defense units to exercise mission readiness. The NTS provides exercise planning, logistics support, and independent observers (as appropriate). Unit readiness teams at the NTS are often integrated into activities of U.S. Department of Defense's larger national readiness exercises, along with U.S. Department of Defense test range activities.

Current upgrades at Area 19 and 20 training areas will facilitate unequaled support of special operations and other government agency customer requirements for live ring training on real targets and simulated moving targets with small arms 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.



Aerial View of Desert Rock Airstrip

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 Security has funded this project and it will be located in Area 6 south and east of the Device Assembly Facility. Construction is scheduled to restart in the spring of FY 2007. As currently conceived, the complex will be comprised of eight testing venues and will be built in three phases over a three to four year period. The Phase I venues were completed in the second half of FY 2005. The complex will serve as a user facility to support post-bench top testing. Activities will range from prototype and sensor systems testing to Conduct of Operations development and training. Users will include developers from the National Weapons Laboratories and private industry as well as the U.S. Customs and Border Protection.

3.1.4 Environmental Management

The DOE's Of ce 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 re ects DOE Headquarters' program initiatives to clean up sites across the DOE 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:

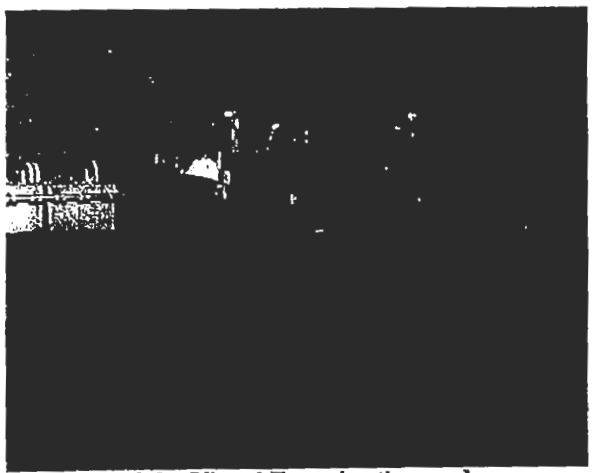
- Manage and safely dispose of national low-level radioactive waste and mixed low-level radioactive waste generated by the DOE and U.S. Department of Defense complex, consistent with records of decision.
- Safely manage and characterize hazardous and transuranic wastes for offsite disposal.
- Characterize 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.

NSTec 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.

3.1.4.1 Waste Management

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

- Disposal of national low-level radioactive waste and 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.



Disposal of the Visual Examination and Repackaging Building Glovebox as Low-Level-Waste

3.1.4.2 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.
- Offsite activities, including characterization and remediation of surface sites and groundwater modeling and monitoring.

3.1.4.3 Technology

Technology activities explore a variety of innovative technologies and approaches to meet environmental management challenges for monitoring sites, managing waste, and enhancing cleanup activities.

3.1.4.4 Key Support Facilities

Table 3-2 illustrates the relationship between the Environmental Management elements and the required supporting facilities and infrastructure systems. Key support facilities for Environmental Management activities include the following:

Area 5 Radioactive Waste Management Site
This site is within the Area 5 Radioactive Waste Management Complex. It includes 200 acres of existing and proposed disposal cells for burial of low-level and mixed low-level waste, and approximately 500 acres of land available for future radioactive waste disposal cells. This site is used for disposal of waste in drums or boxes. Existing cells are expected to be lled and closed by 2011, and new cells extending to the north and west are expected to close by 2027. Waste disposal services are expected to continue at Area 5 as long as the DOE complex requires disposal of wastes from the weapons program.

Area 3 Radioactive Waste Management Site
This inactive site consists of ve disposal cells, each located in a subsidence crater created by weapons testing. This site is used for disposal of bulk waste, such as soils or debris, and waste in transportation containers. Two existing cells (U3ah/at and U3bh) are rapidly being lled and are expected to close by 2010.

Table 3-2: Key Facility and Infrastructure Support for Environmental Management Projects and Activities

Supporting Infrastructure	Key Support Facilities	Environmental Management Program		
		Waste Management	Environmental Restoration	Technology Development
Power systems, communication systems, emergency services, housing facilities, site planning, protective force, fuel storage facilities, maintenance, construction shops, technical facilities, and warehouse/storage facilities	Area 5 Radioactive Waste Management Facility	●		
	Area 3 Radioactive Waste Management Facility	●		
	TRU Pad and TRU Pad Cover Building	●		
	Waste Examination Facility	●		
	NTS Land Area		●	
	North Las Vegas Facility			●

Existing crater U3ax/bl is lled and has been closed in accordance with an approved closure plan. Waste disposal services are expected to continue at Area 3 as long as required by the DOE.

Transuranic Pad and the Transuranic Pad Cover Building

The Transuranic Pad and Transuranic Pad Cover Building are used to store and characterize transuranic and mixed transuranic waste before being shipped to the Waste Isolation Pilot Plant. The Transuranic Pad and the Transuranic Pad Cover Building are located within the Area 5 Radioactive Waste Management Complex. The Transuranic Pad is an asphalt pad, and is operated as a storage facility for mixed waste. The Transuranic Pad Cover Building is a large tent structure for storing drums and boxes before shipment to the Waste Isolation Pilot Plant in New Mexico. Joint Actinide Shock Physics Experimental Research waste will be stored and characterized at the Transuranic pad.

Waste Examination Facility

This facility is located just south of the Area 5 Radioactive Waste Management Site, and consists of the Visual Examination and Repacking Building and an area of gravel pads for mobile vendors. Waste characterization and repackaging are conducted at the Waste Examination Facility in preparation for shipment of waste for disposal at the Waste Isolation Pilot Plant.

3.2 Mission-Critical Facilities and Infrastructure/Linkages Between Facilities and Infrastructure and Mission Needs

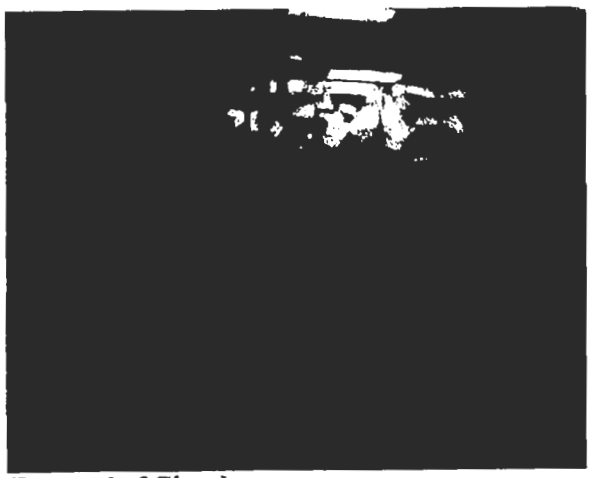
The NNSA has de ned mission-critical as follows:

> *Without constructed asset or parcel of land, mission is compromised. Land or constructed assets deemed necessary to perform the primary missions. This includes any facility or infrastructure predominantly used to perform scientific, production, environmental restoration or stockpile stewardship and without which, operations would be disrupted or placed at risk.*

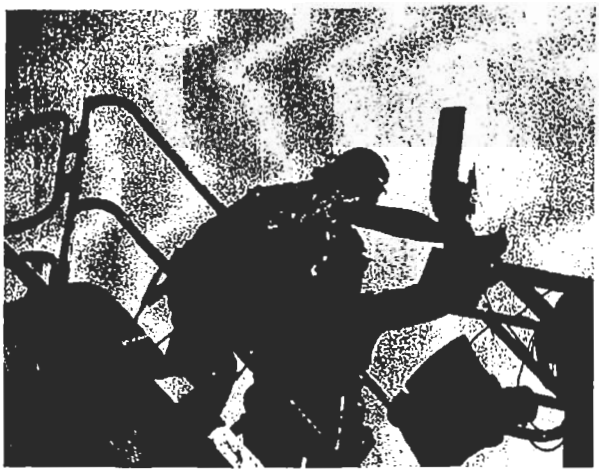
Based on a guidance document from the Federal Real Property Council, changes were implemented in the Facilities Information Management System to change reporting of mission-essential infrastructure to three new categories: mission critical; mission dependent, not critical; and not mission dependent. This recast to the Facilities Information Management System was made in FY 2006.

Examples of mission-critical facilities include Device Assembly Facility and Joint Actinide Shock Physics Experimental Research.

Appendix A, Attachment G contains a detailed listing of mission-critical facilities. The NNSA/NSO mission-critical list was baselined using all facilities included on the Readiness in Technical Base and Facilities mission-critical list, and those facilities determined as mission critical to support security measures, and mission-critical facilities supporting Nuclear Weapons Incident Response. The list was then reviewed to include all facilities required to ensure operation of Readiness in Technical Base and Facilities, to support Nuclear Test Readiness, and to support the Stockpile Stewardship missions. The nal list was provided to the Project Review Committee. The Readiness and Technical Facilities list of mission-critical facilities has been reviewed and is under formal change control at the NA-10 level.



Removal of Glovebox



Doing Maintenance on Public Address System for Unicorn Project

3.3 Future NNSA Mission, Programs, Workload, and Impacts

The primary role of NSTec will continue to be to ensure the accomplishment of assigned activities in a safe, secure, ef cient, and environmentally responsible manner. The missions of NSTec will be grouped in four areas:

- *National Security.* Support the Stockpile Stewardship Program through subcritical and other weapons physics experiments, nuclear test readiness, emergency management, training and demonstration for defense systems, advanced high-hazard operations, and other national security experimental programs.
- *Environmental Management.* Support environmental restoration, groundwater characterization, and low-level and mixed low-level radioactive waste management.
- *Stewardship of the NTS.* Manage the land and facilities at the NTS as a unique and valuable national resource.
- *Technology and Economic Diversification.* Support traditional and nontraditional departmental programs and commercial activities that are compatible with the Stockpile Stewardship Program.

NNSA/NSO's overall objectives for the NTS, as described in the *NNSA Strategic Planning Guidance for Fiscal Years 2007-2011*, are:

- Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. Nuclear Weapons Stockpile.
- Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction.
- Advance the technologies to detect the proliferation of weapons of mass destruction worldwide.
- Eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

Sustaining viable facilities and infrastructure at the NTS not only facilitates achieving these objectives, but also provides the foundation for accomplishing current and future primary NTS missions. With adequate funding, the NTS of the future will realize NNSA corporate deferred maintenance goals to:

- Establish and fund an integrated maintenance program that meets NNSA Headquarter's goals and plans for the sustainment and recapitalization of facilities and infrastructure.
- Aggressively reduce deferred maintenance of mission-critical facilities to within industry standards (deferred maintenance/replacement plant value less than 5 percent) by the end of FY 2009.
- Return facility conditions, for mission-critical facilities and infrastructure, to an assessment level of good to excellent by the end of FY 2009.
- Have institutionalized responsible and accountable facility management processes, including budgetary ones, so that the condition of NNSA facilities and infrastructure is maintained equal to or better than industry standards by the end of FY 2009.

Achieving these goals will allow the NTS to continue to provide unequaled support to its national security customers. However, to provide this

support, NSTec programs will require signi cant improvements and upgrades to the existing facilities and infrastructure. In response to the improvement requirements, Stockpile Stewardship Readiness in Technical Base and Facilities has 10-year investment plans for the U1a Complex, Control Point, Device Assembly Facility, and the Joint Actinide Shock Physics Experimental Research Facilities. Additionally, planning is underway to move Los Alamos Critical Experiments Facility operations from the Los Alamos National Laboratory to the Device Assembly Facility. Additional missions are also expected for the Remote Sensing Laboratories.

In addition to the growth of missions in the Device Assembly Facility due to security concerns and the move of the Critical Experiments Facility, other activities from the Nuclear Weapons Council have 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.

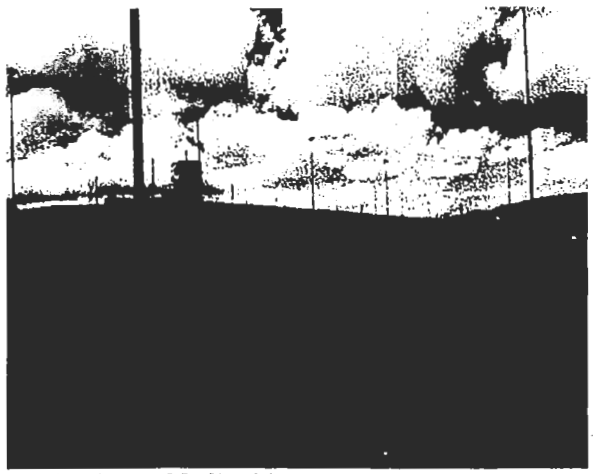
3.4 Future Non-NNSA Mission, Programs, Workload, and Impacts

Signi cant changes are expected overall in the Homeland Security and Defense Applications Program. NSTec 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 identi ed $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 Counter Measures Test and Evaluation Complex, Nevada Test Site Final Environmental Assessment, August 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 suf cient planning for upgrades that may be required.



Device Assembly Facility

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

The impact of NNSA/NSO Work for Others Projects is described in ***Table 3.3.*** 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 initial production of state-of-the art instruments. Hard Buried Targets integrate test bed design, engineering, development, construction, execution, and scienti c 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.

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

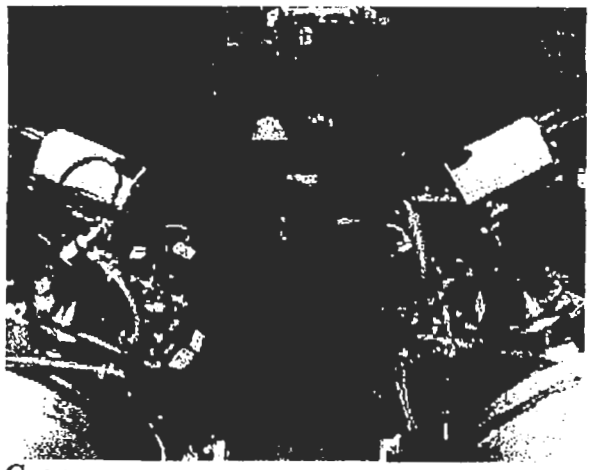
NNSA/NSO Work for Others Projects					
Project Title	Description	Consistent w/ Primary Mission?	Adv[illegible] Impact SS[illegible]	Compete w/ Commercial?	[illegible]rden Site [illegible]ources?
Rad/Nuc CTEC	Design and construction of a test facility for DHS	Yes	No	No	No
Test & Evaluation Rad/Nuc	Evaluation of radiation sensors for DHS	Yes	No	No	No
Nonproliferation T&E	Test chemical sensors	Yes	No	No	
Hard & Buried Targets (DTRA)	Support DTRA test program for weapons systems to defeat hardened buried targets	Yes	No	No	
Yucca Lake Air eld Improvements	Build runway and hangars at Yucca Lake for UAVs	Yes	No	No	
NASA Moon Base	Conduct a study of moon base feasibility	Yes	No	No	No
Counter-Terrorism Technologies	Design and build small numbers of electronic instruments	Yes	No	No	
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
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
Project 700	Provide power and support as requested	Yes	No	No	
Yucca Mountain Project	Provide support as described in the MOU	Yes	No	No	Yes

3.6 Facilities and Infrastructure Impact in Support of Information Technology

The NSTec Technology Needs Assessment for Stockpile Stewardship and Readiness serves as a tool for helping identify speci c 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 speci c 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 NSTec technical staff and managers on anticipated diagnostic requirements with their associated challenges and issues that led nally to a list of identi ed technology needs.

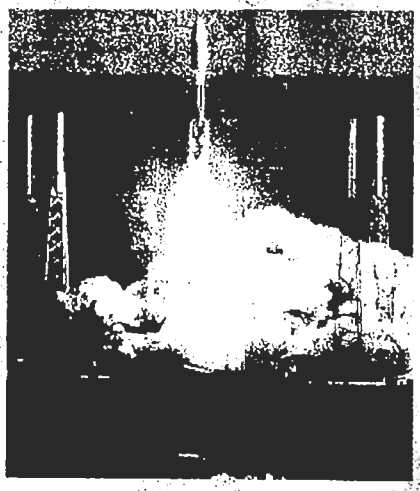
Most of the NNSA/NSO facilities have an outdated communications infrastructure for supporting local area networks because the cost to modernize is signi cant. Modernizing local area networks is frequently not possible until failures occur due to resource limitations and high replacement costs. The estimated 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 nancial bene t. As a part of this evaluation, a pilot is underway. 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 re ect replacements over the next 10 years based on de ned requirements for use of computing resources.



Cygnus

Highlight

Liftoff of the New Horizons spacecraft occurred on January 19, 2006, from Launch Complex 41 at Cape Canaveral Air Force Station in Florida. A team from NNSA/NSO Remote Sensing Laboratory-Nellis supported the effort with a Modi ed Consequence Management Response Team that provided support for satellite communications systems, scienti c assessment, Geographical Information System and data management capabilities, radiation detection and monitoring capabilities, aerial thermal imaging, and emergency response. The launch demanded a collaborative effort with personnel from the Kennedy Space Center, the state of Florida, Brevard County, and other NNSA organizations to support NASA both onsite and offsite.



Following launch aboard a Lockheed-Martin Atlas V rocket, the New Horizons spacecraft is headed for a distant rendezvous with the planet Pluto. The journey will cover more than 3 billion miles. New Horizons will zip past Jupiter and conduct science studies in February 2007, and then go into electronic hibernation for much of the cruise to Pluto. In the summer of 2015, the spacecraft will conduct the rst close-up, in-depth study of Pluto and its moons. The seven science instruments on the probe will shed light on the surface properties, geology, interior makeup, and atmosphere. As part of a potential extended mission, the spacecraft would then examine one or more additional objects in the Kuiper Belt, an area of the solar system outside of Neptune's orbit, which is believed to contain asteroids, comets, and icy bodies.

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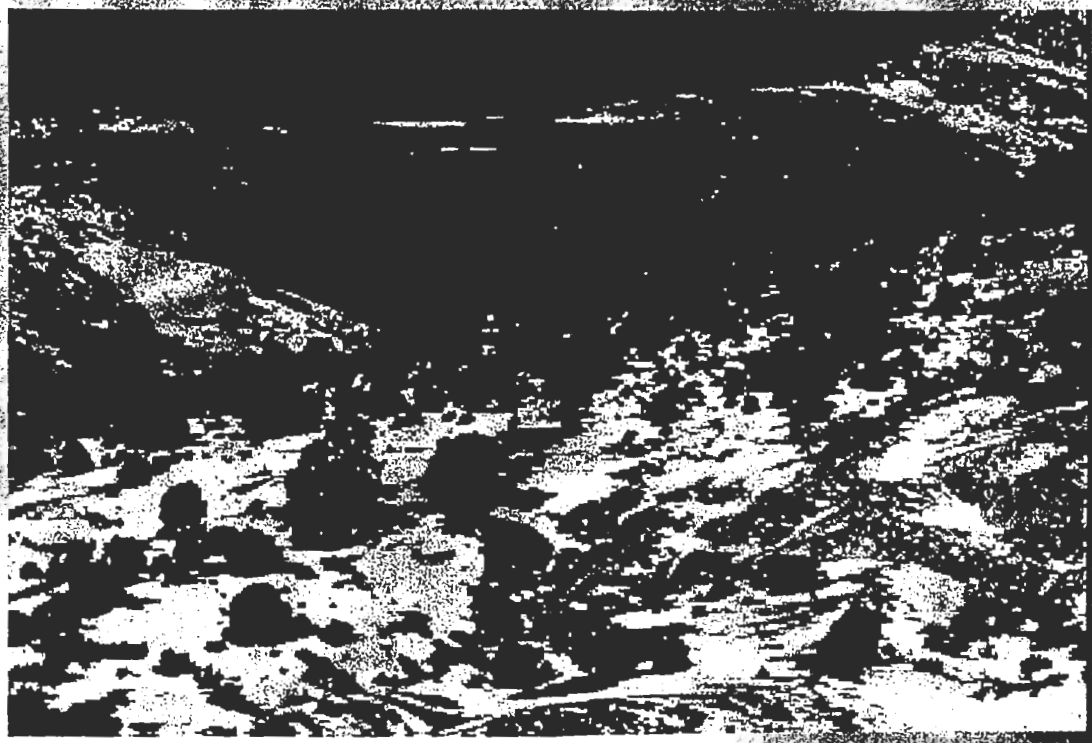
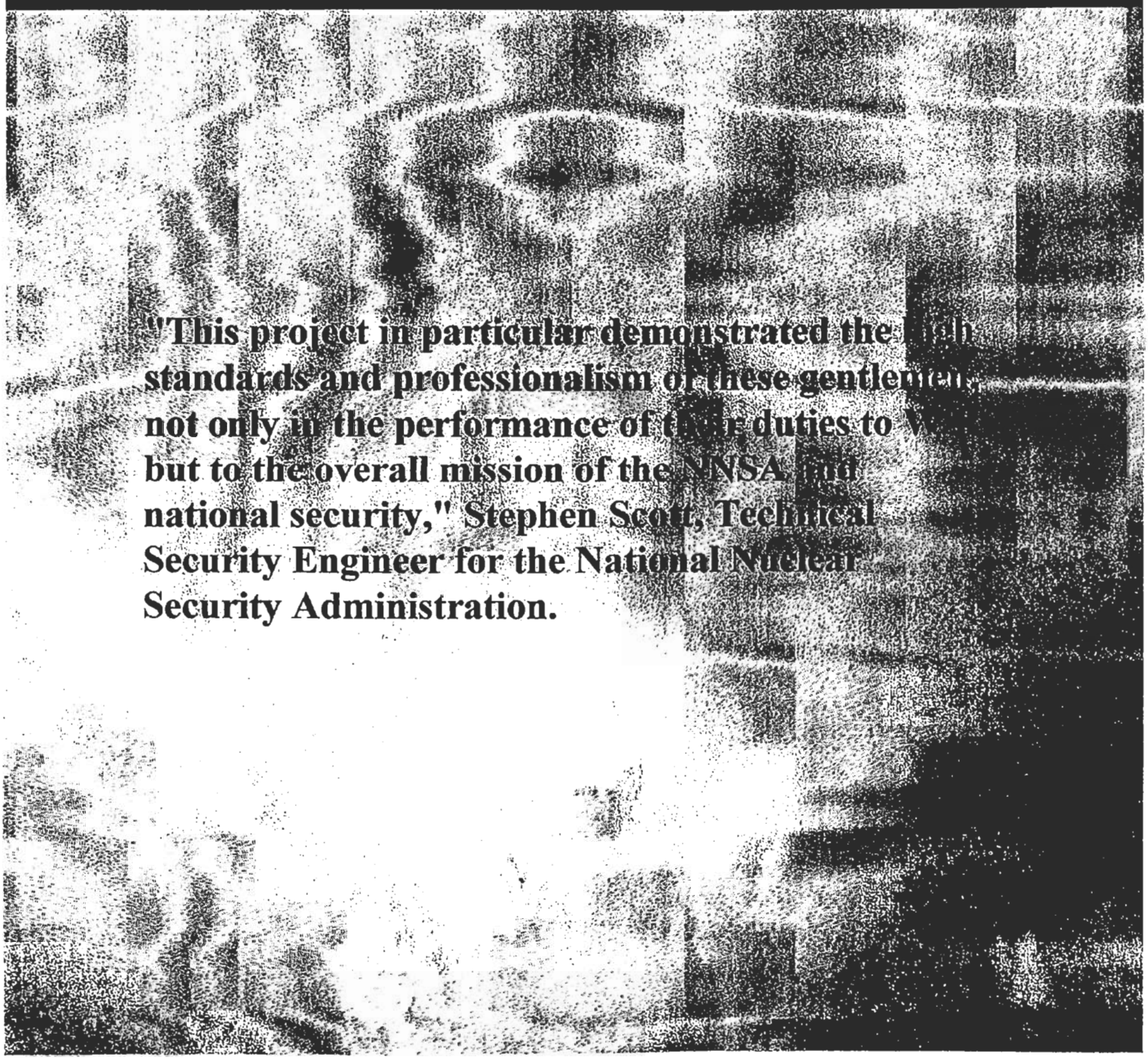
The Plan



Scenic winter landscape of the Eleana Range

FY 2008 NNSA/NSO
Ten-Year Site Plan



"This project in particular demonstrated the high standards and professionalism of these gentlemen, not only in the performance of their duties to [illegible] but to the overall mission of the NNSA and national security," Stephen Scott, Technical Security Engineer for the National Nuclear Security Administration.

4.0 The Plan

The planning component of this *Fiscal Year (FY) 2007 Ten-Year Site Plan (TYSP)* portrays how U.S. Department of Energy, National Nuclear Security Administration (NNSA) Nevada Site Of ce (NSO) conjunction with National Security Technologies, LLC (NSTec), the Management and Operating contractor at the Nevada Test Site (NTS), plans to ensure the successful accomplishment of assigned activities in a safe, secure, ef cient, and environmentally responsible manner and maintain an appropriately sized complex of facilities and infrastructure to meet current and future NNSA mission, program, and workload requirements within scal constraints. Speci cally, this plan provides a framework for NNSA/NSO, NSTec, 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. NSTec directs assets, particularly NTS facilities and infrastructure, to assist mission-critical facilities and infrastructure support for the National Weapons Laboratories to design, fabricate, eld, and operate systems for nuclear weapons experimentation. However, NSTec 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.

Chapter 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, NSTec reviewed and validated the infrastructure condition assessments. Currently, NSTec 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 dif cult 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 land lls. Developing and using Infrastructure Management Plans allows NSTec to integrate mission requirements with the requirements of those infrastructure elements and focus Line Item projects, Institutional General Plant Projects, General Plant Projects, Expense Funded Projects, and Facilities and Infrastructure Recapitalization Program projects on critical needs.

NSTec 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, t-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 brie y described below, and the basic ow and relationship of the NNSA/NSO Planning Process is depicted in ***Figure 4-1.***

The key to NSO'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- ve year period. Should any facility and infrastructure requirements be identi ed, the responsible manager coordinates with the Infrastructure Planning and Projects staff to include the project in the planning process and for identi cation in the Comprehensive Projects List.

All non-programmatic facility and infrastructure projects are presented to the NNSA/NSO senior management for approval and nal prioritization. Facility and Infrastructure Recapitalization Program projects and Line Item projects are submitted to NNSA/Headquarters by the Facilities Engineering and Infrastructure Management Division for concurrence. Additionally, Line Item projects are forwarded to Congress for approval.

The Project Review Committee is kept informed of potential Line Item and General Plant Projects. The Project Review Committee provides guidance for the overall planning process. Members of the Project Review Committee include representatives from NNSA/NSO, the three National Weapons Laboratories, NSTec, the Defense Threat Reduction Agency, Wackenhut Services Incorporated, U.S. Air Force, and Yucca Mountain Project.

As part of its planning process, NSO requires programs to have either a management plan or an execution plan. Each program management plan is prepared jointly by NSTec 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:

- De nes 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.

Field Planning for Station 44 Burn Pit

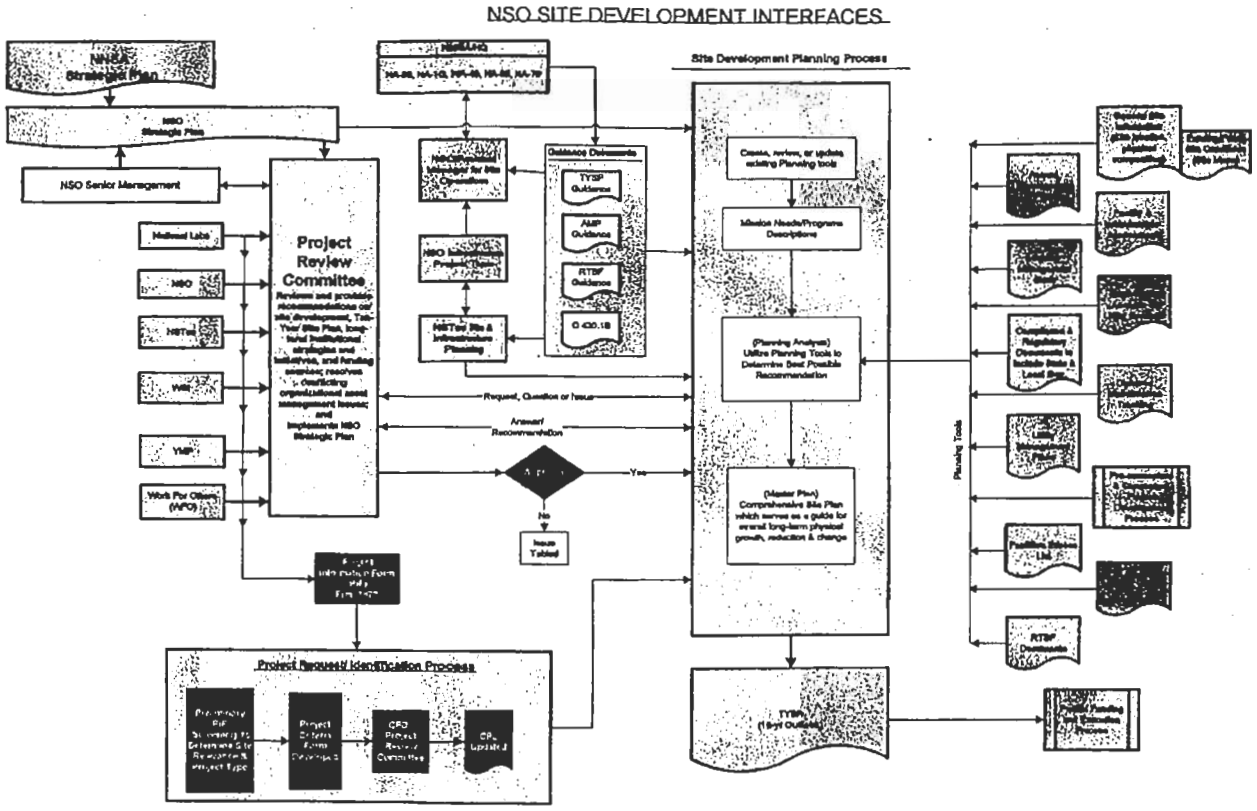


Figure 4-1: NNSA/NSO Planning Process

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4.1.1 Facilities and Infrastructure Overview

4.1.1.1 Nevada Test Site 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 dif cult, at best, to provide the world-class support required for mission-critical activities, campaigns, and Directed Stockpile Work.

4.1.1.1.1 Buildings

NSTec is 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 2006, determined that 35 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 of each year. This update will resolve inconsistencies between the Facility Information Management System and the current conditions and deferred maintenance requirements.

Skull Mountain Transmitter Site Repairs

4.1.1.1.2 Communication System

In FY 2003, a Communication System Management Plan was completed. Condition assessments showed that the majority of the communication systems at the NTS were in poor condition. Much has been accomplished since this report was issued.

The radio-frequency paging system and mobile radio systems have been replaced although they are now more than half way through their life expectancy. Their replacement needs to be addressed in the next planning horizon.

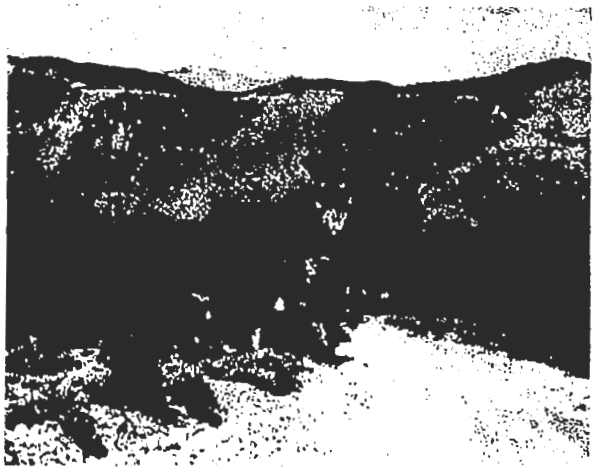
Much of the ber-optic and microwave backbone has been replaced. With the exception of a few spurs that are scheduled for funding next year, these critical systems are in good enough shape to last well beyond this planning horizon. Some augmentation should be expected to keep pace with the fast moving technical changes and bandwith demands so prevalent in today's telecommunications industry.

Modern reliable communication systems are needed to meet current mission demands. Some elements of the communication systems at the NTS have not kept pace with technology and, in those cases, cannot support (or are not compatible with) the capabilities of the National Weapons Laboratories or other users.

Some older communications equipment (exclusive of the above) cannot be recon gured to meet critical mission requirements. Signi cant sections of the copper cable plant and legacy portions of the local area network systems are in poor to failed condition and are in need of repair/replacement.

History has shown that computer based electronics and telecommunication systems are extremely susceptible to rapid obsolescence. User demands for more and more bandwith are ever present in the quest to perform day to day work.

Major replacements/upgrades to the local area networks and telephone plant are required. These projects are included in the Facilities and Infrastructure Recapitalization Program project list in Appendix A, Attachment A-4. However, NNSA Headquarters Facilities and Infrastructure Recapitalization Program is unclear about whether to allow these repair and management projects.



Road to Shoshone Transmitter

4.1.1.1.3 Roads

The NTS has 640 miles of roadways, 340 miles of paved roads, and 300 miles of unpaved roads. The NTS Roads Management Plan serves as the basis for projects listed on the comprehensive project list for maintenance of the road system that supports mission-critical requirements.

Road shoulders need to be maintained to control the excess growth of grass and shrubs that may create an extreme re hazard.

In FY 2003, a Roads Management Plan was completed. The following information is taken from the management plan and the condition assessment of the roads systems. These condition assessments showed numerous poor and failed areas.
The extensive area and diverse locations of NTS operations have a signi cant impact on the mileage of paved roads that need to be maintained. Age and accelerated deterioration have left the NTS road system in need of signi cant reinvestment. Paved roads are mainly chip-and-seal types and are maintained regularly under a Five-Year Road Maintenance Plan. Heavily traf cked roads are losing their subbase and base, which require major repair or replacement. The mission-critical and other high priority road projects have been included in this plan and are shown on the project list in Appendix A, Attachment A-3.

4.1.1.2 North Las Vegas Facilities and Infrastructure

4.1.1.2.1 Buildings

The North Las Vegas Facility consists of 29 buildings and 1 trailer that provide support for NTS activities. Three of these facilities and/or buildings are designated as mission-critical. The NNSA/NSO support facility is colocated with the North Las Vegas Facility.

If regularly maintained, these facilities and buildings should remain fully functional to support current missions during the TYSP planning period. Due to the age of some facilities and buildings, major system replacements will be required during the plan period out years.

The deferred maintenance values used are derived from the Facility Information Management System. The deferred maintenance values are updated only once a year in the Facility Information Management System from the Condition Assessment Information System.

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 six years ago. These radio systems are more than half way through their useful life and need to be addressed during the next planning horizon. Data subsystem upgrades have not kept pace with evolving communications standards. Therefore, there is an ongoing backlog of required equipment change-out required to keep up with today's broad band network technology.

Projects are currently underway to modernize the system. For example, the Local Area Network system has invested approximately $4 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.

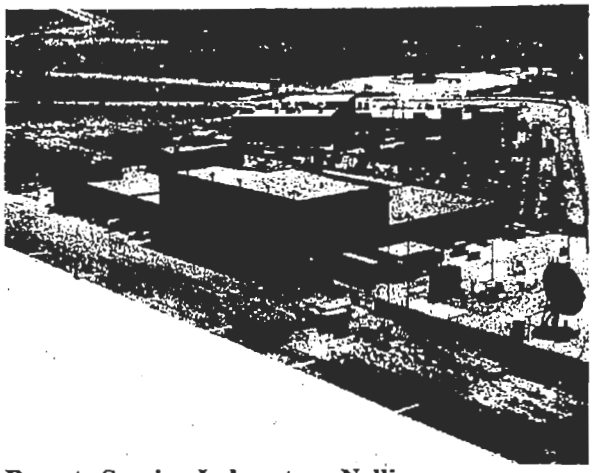
Allied with communications is the interconnection of facility re detection systems. Replacement of the North Las Vegas Facility re alarms began in FY 2003. Two re alarm projects were completed in FY 2004. A project to replace re alarms in the remaining six buildings is currently unfunded and unscheduled.

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 2008 through maintenance and repair projects. Expense funded projects will be used to replace road surfaces at both entrances into the North Las Vegas Facility during the planning period. Plans for a freeway yover in the vicinity of the North Las Vegas Facility is under consideration by the county. Once a nal 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



Remote Sensing Laboratory-Nellis

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

A combination of inadequate investments since the rst building was initially occupied in 1989 and issues revolving around landlord responsibilities have caused the infrastructure at the Remote Sensing Laboratory-Nellis to deteriorate. Limited maintenance funding and an aggressive Preventative Maintenance Program have only served to slow aging of the infrastructure but not provide the recapitalization that would normally be expected had suf cient funding been available. As landlord, tenant, and program issues are identi ed and resolved over the next several years, the infrastructure systems will bene t from increased funding and wider reaching project development.

In order to support current program requirements, a 56,000 square-foot Support Facility is required. In the short term, three modular of ce buildings have been installed to house the personnel necessary to accomplish today's missions. Additionally, an approximately 18,000 square-foot Operations Support Facility is required to house expanding deployment operations. This will require considerable site development to ll a detention

basin and divert storm drainage around the Remote Sensing Laboratory-Nellis compound. Additionally, the security access system for the compound was completed in FY 2003.

4.1.1.3.2 Communication System

The Remote Sensing Laboratory-Nellis telephone communication systems equipment was installed over ten years ago. It is a subset of the old telephone switch based at North Las Vegas.

The Remote Sensing Laboratory-Nellis has recently undergone extensive ber optic communications and Local Area Network systems upgrades, bringing these facilities up to technological standards. These upgrades should keep the Remote Sensing Laboratory-Nellis functioning at peak ef ciency during this planning horizon.

4.1.1.4 Remote Sensing Laboratory-Andrews Facilities and Infrastructure Overview

4.1.1.4.1 Buildings

The Remote Sensing Laboratory-Andrews has two buildings. Both are considered to be in good to excellent condition. The major building is new and has been occupied since July 1999. The second building is a leased hangar.

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

4.1.1.4.2 Roads

The roads are maintained by Andrews Air Force Base.

4.1.1.5 Livermore Operations Facilities and Infrastructure Overview

There are no external facility and infrastructure requirements at this location.

4.1.1.5.1 Buildings

Livermore Operations is located in a building under a lease agreement. NSTec provides maintenance for the building interior. Currently, this building is maintained in excellent condition.

4.1.1.6 Los Alamos Operations Facilities and Infrastructure Overview

Los Alamos Operations Secure Computing

There are no external facility and infrastructure requirements at this location.

4.1.1.6.1 Buildings

The Los Alamos Operations is located in a building under a lease agreement. NSTec provides maintenance for the building interior. Currently, this building is maintained in good condition.

4.1.1.7 Special Technologies Laboratory Facilities and Infrastructure Overview

There are no facility and infrastructure requirements at this location. However, the Special Technologies Laboratory requires an additional 7,000 – 10,000 square feet of leased space to accomplish their current mission.

4.1.1.7.1 Buildings

The Special Technologies Laboratory is located in seven buildings, ve which are owned and two which are leased. NSTec is responsible for maintaining the buildings owned by Defense Programs. Maintenance for the leased buildings is provided under a lease agreement. There are seven buildings and three trailers associated with the laboratory, totaling approximately 50,742 square feet. Currently, these buildings are maintained in good condition.

4.1.2 Real Property Asset Management

4.1.2.1 Condition

A key component of maintaining NTS facilities and infrastructure is the Facility and Infrastructure Assessment process. This process identi es facility and infrastructure projects necessary to support program activities. Permanent federal government facilities and infrastructure are generally designed for a life expectancy of 50 years if they are properly maintained. Buildings that are allowed to run to fail will last 25 years. Keeping any building economically functional requires regular recapitalization planning and investment. This is especially true if the facilities and infrastructure are kept in operation beyond their design life. ***Figure 4-2*** illustrates the normal life cycle of government buildings.

Because of NSO's requirements to support leading-edge technology and to provide economically functioning buildings, the target life cycle for buildings requires updated technology systems every ten years, and refurbishment of buildings at least once during their life cycle. ***Figure 4-3*** depicts NSTec's goal for building condition life cycle.

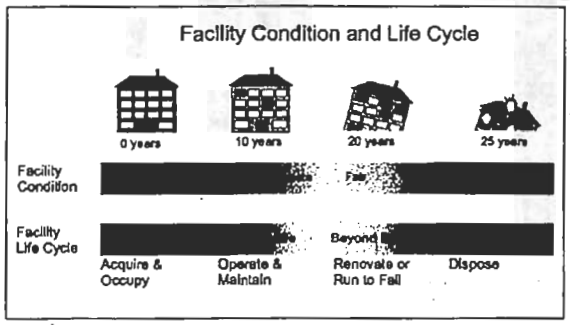


Figure 4-2: Building Condition and Life Cycle

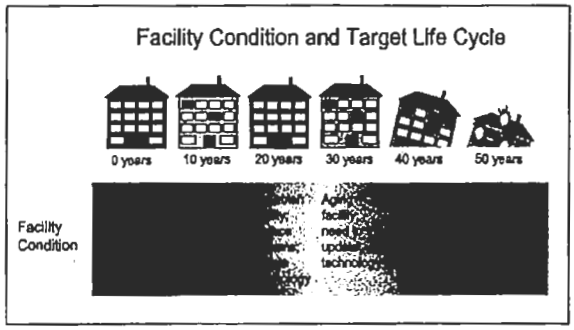


Figure 4-3: Building Condition and Target Life Cycle

The key element in NSO's ability to meet current and future program needs is ensuring a exible and reliable facility and infrastructure mix. NTS facilities and infrastructure must be able to support a return to underground nuclear testing, accept new Campaigns and/or missions, and be cost effective. Target conditions for facilities and infrastructure over the next ten years are based on Readiness and Technical Base Facilities requirements, 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 2006 end of scal year accounting. The Facility Information Management System is updated annually in September. Inspection of all facilities and infrastructure identi ed $330 million in deferred maintenance backlog.

North Las Vegas Local Area Network Survey

Having a full understanding of the current condition of its facilities and infrastructure enables NSTec's management to direct reinvestment decisions to accomplish the deferred maintenance goals. The traditional building assessment process consisted of the Condition Assessment Survey, which provided for inspection of the building's physical condition and determination of de ciencies and repair costs through the Conditional Assessment Information System. A building's true assessment involves more than just the physical condition. During FY 2002 through FY 2004, an enhanced methodology for facility and infrastructure assessments, based on Lawrence Livermore National Laboratory's Facility *Assessment and Ranking System was developed.* NSTec expanded the assessment process to include all infrastructure elements, which provided a unique methodology to identify the basic infrastructure elements, and to evaluate their condition.

The current Facility and Infrastructure Assessment Process provides a more complete assessment of facility and infrastructure elements by addressing facility and infrastructure suitability issues in relation to their programmatic needs through the use of the Lawrence Livermore National Laboratory model and by combining the asset's physical condition reported in the Condition Assessment Information System. This combined process results in a complete assessment which recommends improvements agreed to by program managers, facility managers, and facility owners. This process has developed into a methodology to more accurately provide assessments that:

- Provide management with a comprehensive facility and infrastructure evaluation, based on physical, programmatic, owner, and operator needs.
- Provide NNSA/NSO and the National Weapons Laboratories with functional, effective, ef cient, and up-to-date facility and infrastructure condition information.
- Provide a facility and infrastructure ranking methodology, which allows annual review of priorities with assessments updated over a three-year cycle.
- Are used to identify, develop, and support proposals for facility and infrastructure projects (i.e., General Plant projects, Line Item projects, Expense Funded projects, and Maintenance Reinvestment projects).

The Federal Real Property Council developed de nitions for facility categories. Under the new de nitions, the active facilities and the key elements of the infrastructure were categorized. ***Table 4-1*** depicts the facility category de nitions. It does not re ect the additional Readiness and Technical Base requirements for replacing mission critical and mission critical, not dependent facilities within ve days.

In FY 2004, more detailed assessments began that involved removing electrical panel covers, load tests, ow tests, etc. This will provide the best database possible for input into the Facility Information Management System and for the development of projects to reduce the de ciencies. It will also stabilize the size of NNSA/NSO's deferred facility maintenance.

With the implementation of the Facility and Infrastructure Assessment Process, NSTec and NNSA/NSO management have acquired a powerful tool to use in making reinvestment decisions for the site. The details of the assessment process and its interface with the Condition Assessment Survey process are included in Appendix C.

Through the continued use of this Facility and Infrastructure Assessment program, projects and maintenance actions will be identi ed to aim management toward an improved priority-based investment strategy for the mission-critical facilities and infrastructure most in need of repairs, upgrades, or replacements. The result will provide a site that has reached a target condition which can be maintained at optimum levels and will then function at optimum levels.

Table 4-1: Facility Category De nitions

Facility Category De nitions	
Mission Critical	Without constructed asset or parcel of land, mission is compromised. Land or constructed assets deemed necessary to perform the primary missions. This includes any facility or infrastructure predominantly used to perform scienti c, production, environmental restoration or stockpile stewardship and without which, operations would be disrupted or placed at risk.
Mission Dependent, Not Critical	Does not t into mission critical or not mission dependent categories. Land or constructed assets that play a supporting role in meeting the primary missions. Loss of mission dependent, not critical assets would not immediately disrupt operations and can be reasonably restored or otherwise addressed prior to impacting operations.
Not Mission Dependent	Mission unaffected. Land or constructed assets that are not in support of the primary missions, but support secondary missions and/or quality of workplace initiatives. Loss of a Not Mission Dependent asset results in inconvenience and indirectly impacts operations if unavailable for an extended period. Further, assets determined to be excess are in this category.

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 NTS, 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 identi ed risks are evaluated prior to authorizing use of buildings, facilities, or land areas. NSTec performs the space management function to achieve effective and cost ef cient 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. NSTec performs the space management function to achieve an effective and cost ef cient use of NNSA/NSO facilities. NSTec's space management process reacts to changing work operations and activities to integrate space use and organizations performing the work. Asset utilization is reported in Appendix A, Attachment B Asset Utilization Index.

4.1.2.3 Future Space Needs

Complex 2030 is evolving as national needs change, and the transformation of the nuclear weapons complex continues by implementing NNSA's vision of the complex as it would exist in the year 2030. The role that the NTS will play as Complex 2030 comes to realization is uncertain at this juncture. The future missions and the con guration of the future weapons complex have yet to be determined. The following strategies are within the capabilities of the NTS for Complex 2030:

- Ensure that the NTS continues to support stockpile commitments of a safe, secure, reliable deterrent and, maintain without interruption, the essential nuclear capabilities needed for an uncertain global future. This includes transforming the stockpile without the resumption of underground nuclear tests and sustaining readiness to conduct underground tests at 24 months.

Mock Training at the Device Assembly Facility

- Transform the NTS to enhance the responsiveness of design, certi cation, and production components as part of a fully integrated and interdependent nuclear weapons complex that is both modern and cost-effective. This includes appropriate uniform business practices, technical processes, information management, program management, and more ef cient acquisition using supply chain management.
- Consider the Device Assembly Facility to function as an alternate facility for assembly/ disassembly operations.
- Operate Joint Actinide Shock Physics Experimental Research and U1a as consolidated, effective, national, shared, major science assets.
- Prepare the NTS to serve as the primary site for large-scale hydrotesting.
- Encourage and incorporate stronger Work for Others participation in key mission areas and into science and technology plans.
- Develop an organizational structure that drives the integration of mission and operations to balance risk and cost. This includes promotion of a culture that manages risk through line management responsibility and accountability, risk-informed decision making, and maintenance of a safe and secure working environment.

As part of the path forward, efforts must be focused to plan change in a holistic sense both tactically and strategically:

- Examine current practices and cost model elements to reduce cost.
- Explore third party nancing and other strategies to provide modern, energy ef cient facilities and other technologies to the NTS. Replace facilities that are more than 40 years old.
- Change our risk adverse culture by evaluating existing risk assessment methodologies and risk precedence procedures to identify and measure the level of risk we are willing to accept and the authorization levels for acceptance.
- Implement the National User Facility model to ensure consistency in operation and maintenance.
- Model the integration, consolidation, and bridging of enterprise data systems and data elements to create master data management capability for intelligent, knowledge-based decision making.
- Explore opportunities with our customers, corporate partners, and key subcontractors to systematically evaluate changes to our facilities and infrastructure.
- Encourage and incorporate stronger Work for Others participation in key mission areas and into science and technology plans.
- Work with our customers to coordinate our planning and ensure we are tracking to the vision.
- Prioritize and projectize the efforts to transform the test site for its future missions within the bounds of political, logistical, and other barriers. Develop schedules and cost estimates to achieve the new Test Site of 2030.
- Develop "snapshots" that will be representative of the new Test Site at time frames that include as-is, 2010, 2020, and 2030.

Future space needs are dependent on the NNSA vision for the NTS. Space needs will increase if functions from other sites continue to 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.

Plans to replace buildings currently in use in Mercury with energy ef cient 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

Shadow Lane Facility

Spaced leased on Shadow Lane in Las Vegas, Nevada, will continue to function inde nitely as an of ce for the NSTec Employee Assistance Program. Con dentiality necessary to support this program requires a satellite location.

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.

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.

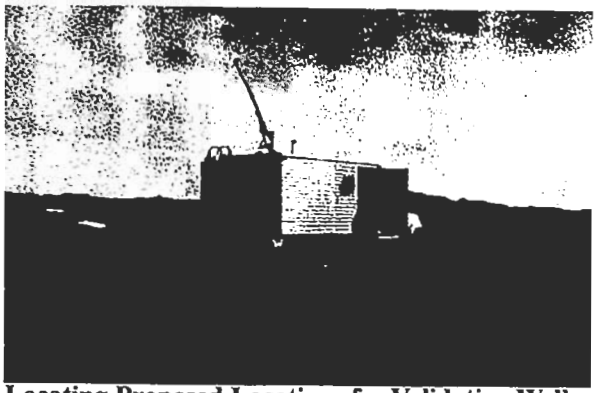
Livermore Operations, located in Livermore, California, occupies a single leased facility. Livermore Operations provides resources for experiments in high-energy density physics and hydrodynamics in support of the Stockpile Stewardship Program. This space will continue to be leased to provide an appropriate 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 eld 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 rmware, 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.



Locating Proposed Locations for Validation Wells

4.1.2.5 Land-Use Planning

4.1.2.5.1 Long-Term Stewardship

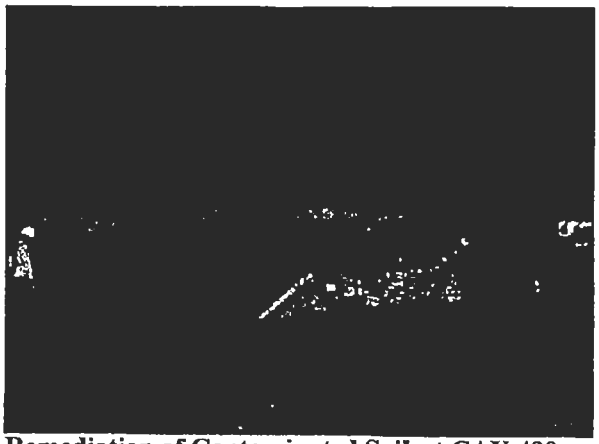
The NNSA's Hydrologic Resources Management Program's primary responsibility is to acquire hydrologic data and information of groundwater supplies to support ongoing activities and to assist in planning new uses for the NTS. The main objective of this program is to provide a sound technical basis for 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 ow model development for both the Death Valley Region, which includes the NTS, and for the NTS itself, and will continue to support re nement 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, ow 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 and Tonopah Test Range (remediation and closure of historically contaminated sites) address chemically and radiologically contaminated soil and waste materials at corrective action sites. These corrective action sites may be either clean closed or closed in place. If a site is closed in place, it may still contain contamination and may be use restricted, depending on risk and expected future use of the site. 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 Facility Agreement and Consent Order* de nes 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*.



Remediation of Contaminated Soil at CAU 490

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 may significantly impact the quality of the human 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 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* including the requirement that the local emergency planning committee and state emergency response agencies be noti ed immediately of accidental or unplanned releases of an extremely hazardous substance to the environment. Also, the national response center must be noti ed 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 proposed 2030 Complex corridor that de nes 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 proposed 2030 Complex corridor. The majority of maintenance, support, and development activities will be directed towards improving facilities and infrastructure in this proposed 2030 Complex corridor.

The NTS has consolidated most of the NNSA experimental facilities along a central proposed 2030 Complex 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 identi ed by users through the Project Review Committee and Readiness and Technical Base Facilities efforts.

Krakatau being Lowered into an Emplacement

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 proposed 2030 Complex corridor are not maintained unless paid for by a speci c 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 138-kV high-voltage lines and ber-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 NSTec have consolidated working environments and disposed of many excess facilities.

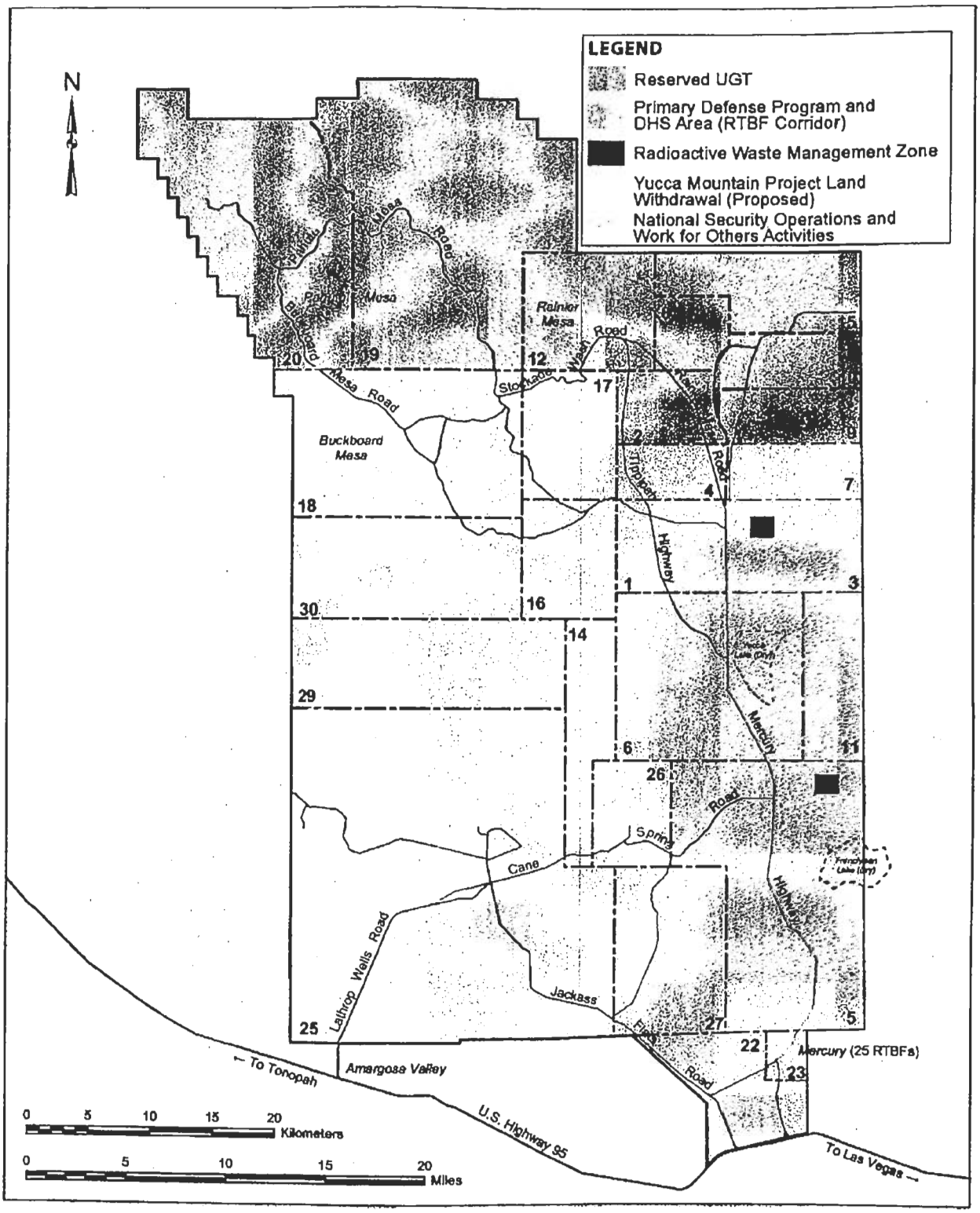


Figure 4-4: Proposed 2030 Complex Corridor

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

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

4.1.3.1 Excess Facilities Footprint Elimination

Demolition of Building 6-6p

Disposition of excess buildings has been identi ed for FY 2007 through FY 2010 and totals 39,680 gross square feet. Thirteen buildings totaling 47,955 gross square feet were demolished in FY 2006. Two buildings totaling 5,300 gross square feet are scheduled for disposition in FY 2007. Plans for FY 2008 include the demolition of two buildings totaling 3,210 gross square feet. Fourteen buildings totaling 25,533 gross square feet have been identi ed as potential candidates for demolition in FY 2010. Excess building demolition is supported by the Facilities and Infrastructure Recapitalization Program funding and is executed by the prioritized list provided in this TYSP (Appendix A, Attachment E-1). NSTec has scheduled disposal of uncontaminated buildings on the disposal list through FY 2010. Because the FY 2004-2005 demolition program ful lls NNSA/NSO's requirement to dispose of 50 percent of all non-contaminated real property determined to be excess to all NNSA mission requirements, the requirements have been exceeded.

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 2008 and beyond is primarily funded by other government agencies (U.S. Department of Defense), work for Others (U.S. Department of Homeland Security), and Readiness in Technical Base Facilities Line Item (Fire Stations 1 and 2). Several projects that were included in previous plans were reduced in scope or eliminated due to funding constraints.

4.1.3.3 Grandfathered Footprint Added

A total of 23,282 gross square feet of grandfathered footprint was added by the Atlas Pulsed-Power Facility (22,457 gross square feet) and the Atlas Site (875 gross square feet). This is re ected in Appendix A, Attachment E-3, Grandfathered Footprint Added.

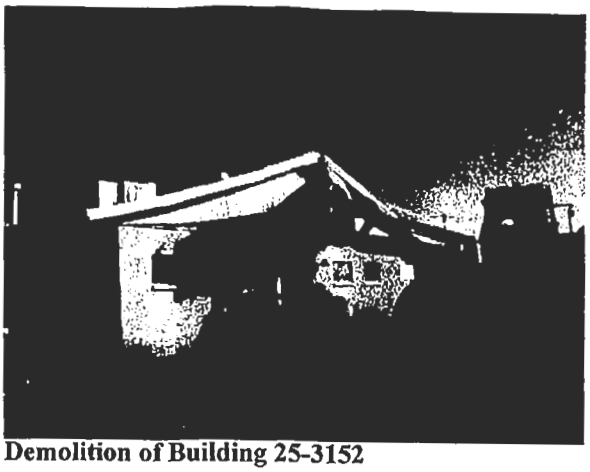
4.1.3.4 Site Footprint Reduction Analysis

The Facilities Disposition Plan is contained in Appendix A, Attachment E-1. The New Construction Added spreadsheet (Appendix A, Attachment E-2) is included as requested by the guidance. This information is summarized in graphic representations (Appendix A, Attachments E-4a and E-4b) of gross square feet of space eliminated and space added between FY 2002 and FY 2010.

4.1.3.5 Waiver and Transfer

To date, 200,000 gross square feet has been transferred to Sandia National Laboratories. This is re ected in Appendix A, Attachment E-5, Waiver/ Transfer Log.

4.1.4 Deferred Maintenance Reduction/Facility Condition Index



Demolition of Building 25-3152

Infrastructure Management Plans issued in FY 2006 identi ed signi cant areas of deferred maintenance during FY 2002 and FY 2003. An *Annual Maintenance Plan* was developed to coordinate NNSA/NSO deferred maintenance activities. The condition assessment process, implemented in FY 2002, accounts for the correct identi cation 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 *Annual Maintenance Plan*. The following represents a high-level summary extracted from that document. Additional details may be found in the *NSTec FY 2007 Annual Maintenance Plan*.

Deferred maintenance as de ned in the guidance for the *FY 2003 TYSP* is the basis for identi cation of the deferred maintenance baseline. Determination of the deferred maintenance baseline used the following criteria in de ning deferred maintenance:

- Maintenance required during the year that was beyond the site's current year funding capability was identi ed as deferred maintenance.
- Maintenance identi ed as of a substantial nature that cannot be budgeted within current funding pro les is identi ed as deferred maintenance.
- The Facility and Infrastructure Assessment and Condition Assessment Survey processes, as well as the Infrastructure Management Plans, have identi ed 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 identi ed as deferred maintenance.
- The Infrastructure Management Plans have identi ed 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. The values in the Condition Assessment Information System were used to calculate the deferred maintenance. These values are included in the *NSTec FY 2007 Annual Maintenance Plan*.

Deferred maintenance buy down for non-Readiness and Technical Base Facilities projects with general plant projects and expense funded projects is being accomplished chie y 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 2013. 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 NSTec facilities and infrastructure, a problem that is being corrected as the Facilities and Infrastructure Recapitalization Program terminates in FY 2013.

Building disposition activities removed over $8 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 signi cant activity in the next few years. In order for the deferred maintenance backlog to decrease, NSTec must maintain maintenance funding (required maintenance) at approximately 2 percent of replacement plant value and establish a recapitalization funding pro le at approximately the same level.

Previously, the de nition 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 re ected 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 signi cantly to the reduction in deferred maintenance.

There has been no direct funding of General Plant Projects for the last ve years and $1 million in direct funding of Infrastructure General Plant Projects has been approved for FY 2007. Readiness in Technical Base and Facilities funds are projected to be zero during the next ten years.

4.1.4.1 Site Plan to Meet NNSA Corporate Goals

Workers Performing High Voltage Maintenance

NSTec developed a strategic approach to achieve the NNSA corporate goals for deferred maintenance reduction at the NTS and North Las Vegas. In coordination with the TYSP and the Readiness in Technical Base and Facilities Site Execution Plan, the *NSTec FY 2007 Annual Maintenance Plan* de nes the strategy to reduce deferred maintenance to meet NNSA goals. In addition, ef ciency measures that will reduce costs, improve quality, cut cycle time, and improve worker safety and environmental stewardship will continue to be the focus of NSTec improvement initiatives. The strategy has three primary elements: planning, execution, and funding.

Planning involves establishing a formal maintenance planning program that clearly lays out maintenance requirements for both sustaining (through preventative and predictive maintenance) and recapitalizing (by facility component replacement to arrest the growth of deferred maintenance). The *NSTec FY 2007 Annual Maintenance Plan* details this effort. The *NSTec FY 2007 Annual Maintenance Plan* drives funding and execution requirements necessary to accomplish strategic goals. It ties together the direct and indirect maintenance plans (repainting, reroo ng, recoating, repaving, etc.) to strategic goal priorities. Linkage of facility and

infrastructure data in the Condition Assessment Information System, Facility Information Management System, and the Computerized Maintenance Management System will facilitate accurate planning.

Execution involves conducting annual assessments of facilities, training of inspectors, and establishing management tools and metrics to track and trend maintenance accomplishments and completion of the projects that reduce deferred maintenance. The principal elements currently supporting the reduction of deferred maintenance are the Facilities and Infrastructure Recapitalization Program projects, Readiness in Technical Base and Facilities-funded line items and expense funded projects, and Maintenance Reinvestment projects. An increasing emphasis on the deteriorating condition of the weapons complex led to the NNSA/NSO's commitment to meet NNSA's corporate goals to stabilize the growth of deferred maintenance by FY 2005, and reduce deferred maintenance to industry standards by FY 2009.

Deferred maintenance was stabilized in FY 2005 and validated through a well-developed facility assessment process that has been implemented since FY 2003. All facility and infrastructure assessments have completed one cycle and, in FY 2005, started over again. Previous assessments contributed in establishing the FY 2003 deferred maintenance baseline, while current assessments are validating that deferred maintenance growth is consistent with projections.

The NSO/Assistant Manager for Site Operations, in conjunction with NSTec's Infrastructure Projects Department, has facilitated project execution more quickly and ef ciently to ensure deferred maintenance yearly objectives are met. Increasing the use of subcontractors to meet certain Facilities and Infrastructure Recapitalization Program goals has been successful as an effective alternative for completion of Line Item critical decision milestones and General Facilities and Infrastructure Recapitalization Program Projects.

The nal element of the strategy is identi cation of funding streams to support deferred maintenance reduction goals and increase investment in sustaining maintenance to prevent growth in deferred maintenance. NNSA/NSO oversees approximately $2.4 billion of replacement plant value for active operational, real property and infrastructure that are grouped into three categories: balance of plant, mission support, and mission critical (Readiness in Technical Base and Facilities direct-funded facilities are a subset of mission-critical facilities).

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 de nition is the burdened replacement cost.

Testing Fiber Optic Cabling in Building 6-900

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 modi ed 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 ensure 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 modi ed midyear to adapt to the change. The de nition 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 identi ed, increasing the mission-critical replacement plant value signi cantly. This major one-time modi cation 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 2-4 percent of replacement plant value, to between $48 million and $96 million annually.

In FY 2006, $60.9 million actual costs were spent on maintenance which equates to 2.1 percent of the replacement plant value. For FY 2008, $56.9 million is required to perform maintenance on 2 percent of the replacement plant value.

Sandblasting Inside of Water Tank during Refurbishing

The indirect maintenance investment for outyears will be exacerbated if NNSA/Headquarters does not concur with the elimination of $423 million of not mission dependent facilities replacement plant value from the total replacement plant value. In this case, a total of $5.7 million (burdened) indirect maintenance investment would be required to sustain not mission dependent facilities and infrastructure at 2.1 percent of replacement plant value.

Today, the principle burden for deferred maintenance reduction, especially for facilities and infrastructure recapitalization/replacement-in-kind, is shouldered by the Facilities and Infrastructure Recapitalization Program and Line Items, with limited investment from the Maintenance and Recapitalization Program, Readiness in Technical Base and Facilities expense-funded projects, and the Site Maintenance Program. In FY 2013, Facilities and Infrastructure Recapitalization Program funding will end, leaving an increased burden on direct and indirect site maintenance funding streams. Establishing proper funding levels in NNSA/NSO's Future Years National Security Program to replace Facilities and Infrastructure Recapitalization Program is critical to successfully achieving and sustaining NNSA Headquarters-directed deferred maintenance and condition goals.

Readiness in Technical Base and Facilities Site Execution Plan estimates $18 million direct funding to sustain the Readiness in Technical Base and Facilities subset of mission-critical facilities only. Of the $24 million indirect funding that is utilized to sustain the entire $2.4 billion replacement plant value, approximately $7 million is used for sustaining mission-critical facilities and

infrastructure. Thus, the "sustaining maintenance" investment in mission-critical facilities and infrastructure is being made on an annual basis. What is not currently addressed is the mission-critical "recapitalization" investment.
Due to Facilities and Infrastructure Recapitalization Program funding, recapitalization of non-Readiness and Technical Base Facilities mission-critical facilities to achieve program goals is adequate. After FY 2007, complete recapitalization will not be achieved without funding by Readiness in Technical Base and Facilities. The failure to fully support a transition from Facilities and Infrastructure Recapitalization Program to Readiness in Technical Base and Facilities funding will result in the inability to maintain deferred maintenance, maintenance, and programmatic requirements for mission-critical infrastructure recapitalization goals beyond FY 2013.

This 'over target' requirement will allow for deferred maintenance reduction and forms the basis for General Plant Projects, real property capital equipment, and recapitalization to transition to the termination of the Facilities and Infrastructure Recapitalization Program. This level of programmed investment should meet the requirements for sustaining and recapitalization of the mission-critical facilities and infrastructure, while meeting the lower corporate goal for sustaining maintenance and recapitalization of the mission dependent, not critical and non-mission dependent facilities and infrastructure or balance-of-plant facilities and infrastructure. Without this programmed investment it will jeopardize our ability to meet our commitment to maintain the entire $2.4 billion replacement plant value.

The goal requirements will be closely tracked and evaluated as data become available to ensure that the correct levels of funding are identi ed for the future. At this time, the NNSA/NSO's goal is to set a course for maintenance funding that is correlated to the annual percentage of deferred maintenance growth or recapitalization investment determined from the maintenance data analysis and Federal Facilities Council recommendations.

A gap analysis of approved funding versus funding needed for each year is presented in ***Figure 4-5***.

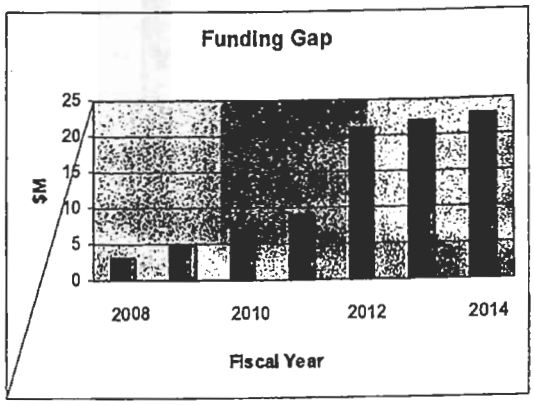


Figure 4-5: Gap Analysis of Approved Funding Versus Funding Needed for Each Year

4.1.5 Maintenance

NSTec 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 prioritized maintenance activities over a ve-year period and empowers the maintenance program to progress in a proactive rather than a reactive mode. The prioritization guide is presented in ***Figure 4-6***. The results of Facility and Infrastructure Assessments, prior-year maintenance performance, and future programmatic requirements are combined with projections by maintenance managers to form a site-wide vision for maintenance. Forging this common vision for facilities and infrastructure yields dividends in 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, departing from the trend to focus maintenance planning primarily on buildings. This redirection will allow NSTec to support NNSA's corporate goals for deferred maintenance.

The *NSTec FY 2007 Annual Maintenance Plan* and DOE O 430.1B (RPAM) de nes preventive maintenance as:

Those periodic and planned actions taken to maintain a piece of equipment within design operating conditions and extend its life. It is performed before equipment failure occurs and/or to prevent equipment failure.

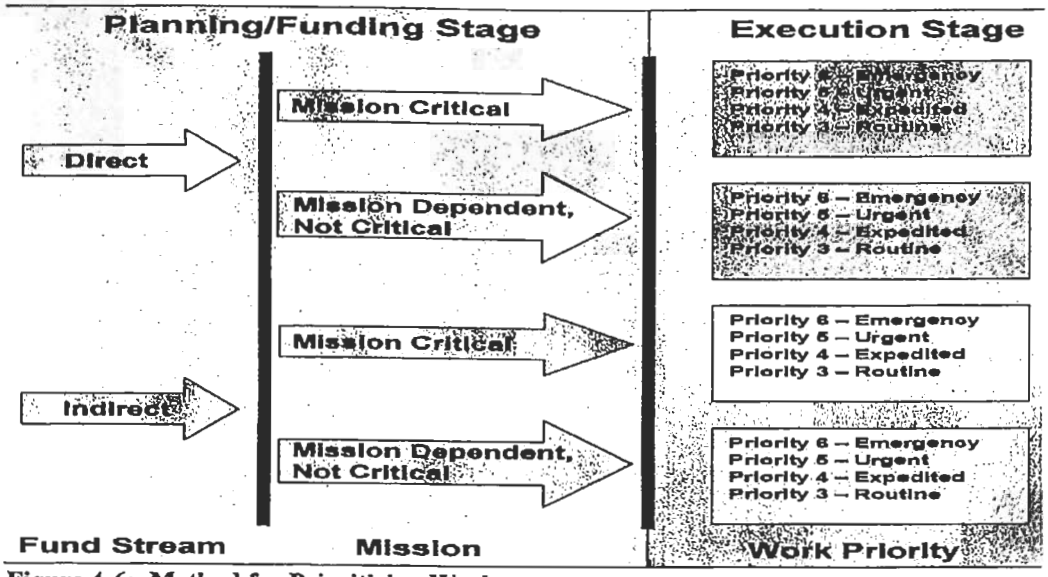


Figure 4-6: Method for Prioritizing Work

FY 2003 was a continuation of FY 2002 efforts. In FY 2003, a study examined scheduled maintenance for each facility receiving indirect maintenance services. The study also considered the preventive maintenance program for the Device Assembly Facility, a direct-funded facility. The result was a complete overhaul and revamping of the NTS preventive maintenance program.

The Joint Actinide Shock Physics Experimental Research preventive maintenance program has also been examined, and the facility engineer has approved the preventive maintenance program developed for the facility. Schedules for examining the adequacy of other direct-funded facility preventive maintenance programs have also been developed.

The *NSTec FY 2007 Annual Maintenance Plan* and DOE Order 430.1B (RPAM) de ne predictive maintenance as:

> *Actions necessary to monitor, find trends, and analyze the parameters, performance characteristics, properties, and signatures associated with equipment, systems, or facilities that are indicative of decreasing performance or impending failure.*

Although no speci c budget was identi ed to perform vegetation abatement to mitigate the threat of wildland res, a number of activities were completed in FY 2006:

- Eighty facilities (cleared a 25-foot perimeter for each facility for an estimated 755,242 square feet of vegetation abatement)
- U1a complex (cleared 190,125 square feet around the facilities)
- 84.2 linear miles of roadway cleared using the bush mower
- Twenty electrical substations (138-kV and 69-kV lines; cleared 1,904,000 square feet)

The partial remodeling of the Mercury Cafeteria created the NTS Social Center from portions of the main dining room and two smaller rooms. This area provides a place to eat, play cards or board games, play pool or ping-pong, watch TV, or just socialize in a comfortable setting.

During FY 2006, the radio system at Creech Air Force Base was replaced to enable that facility to join in the combined Nellis Air Force Base and NNSA/NSO radio system. Although the project is complete, testing will continue for several months before the system is fully implemented.

Planned maintenance was rst reported in FY 2003 as a part of required maintenance. This provides a more complete picture of the maintenance necessary to keep a site operational.

To ensure that Integrated Safety Management is fully implemented within the NNSA/NSO complex, the Work Management section must generate work orders for every type of maintenance work request. Many types of work, such as sign-making, room/facility thermostat repair or adjustment, picture hanging, and collecting trash, are minor and can be performed by craft workers without requiring detailed documentation by planners. An Organizational Procedure (OP-4800.028) was implemented in January 2004 to provide a more ef cient method of ensuring that minor maintenance activities could be dealt with expeditiously.

When customer service unit personnel receive a work request, they immediately check the multi-page Minor Maintenance Task List to determine whether the request meets the criteria for the minor maintenance work process. If the criteria are met, a work order is created containing the work request; however, no further planning details are required for the minor maintenance work request, since it is considered within the parameters of skill of the craft. This determination by the customer service unit is reviewed by supervisory personnel and upon approval, the work order is sent to a scheduler who also checks the work order schedules and assigns the work to the appropriate craft foreman.

During the rst three months of its implementation, 878 minor maintenance work orders were completed, taking an average of 17 hours to complete. Because schedule slippage frequently occurred on these "minor" tasks due to higher priority work, the average time for completion was usually measured in days rather than hours. 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. The *FY 2002 Real Property Deferred and Annual Maintenance Reporting Requirement Guidance* speci es that required maintenance consists of:

> *Estimates of all costs to perform maintenance activities for a building or other structures and facilities that one would normally expect to be accomplished as determined by engineering/maintenance/life cycle analysis and/or vendor maintenance schedule. Included are preventive maintenance, predictive maintenance, and any other maintenance activity required (such as roof replacement) for which FY 2007 is the optimum period of accomplishment. Costs for repairs (corrective maintenance) are generally not known and should not be reported in this category. Maintenance requirements identified in the FY 2007 Deferred Maintenance estimate should not be included unless those items were scheduled to be accomplished in FY 2007. Required maintenance includes all sustaining maintenance and recapitalization efforts.*

High Pressure Cleaning Filters from Kitchen Ventilation System

Required maintenance reported in the Facility Information Management System is unconstrained and re ects requirements, while the budgeted number will re ect actual scal 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, NSTec uses the de nitions from the U.S. Department of Energy Chief Financial Of cer's guidelines. To meet the commitments established at the Deferred Maintenance Summits, NSO planned higher levels of required maintenance than in past years. NSO's prediction stated:

Sanding a Door in Preparation for Painting

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 identi ed 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 re ects 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 identi cation of de ciencies. In FY 2004, Sandia National Laboratories conducted an independent audit of the FY 2003 condition assessments. In FY 2005, the rst full cycle of facility and infrastructure assessments conducted by certi ed Condition Assessment Information System inspectors was completed. In addition to the stronger assessment process now in use, development of maintenance projects by NSTec's Infrastructure Department increased deferred maintenance at a level that will provide the baseline for achieving NNSA corporate goal reductions.

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 insuf cient 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 identi ed in the *NSTec FY 2007 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 NSTec 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 exible 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 workload. 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 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 identi ed 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 rst 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 continued to increase as projected in FY 2006, re ecting 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 rst maintain maintenance funding (required maintenance) at approximately 2 percent of replacement plant value and establish a recapitalization funding pro le 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 of Well C-1 Pipeline

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 concludes. 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 modi ed after periodic condition assessments. Speci c replacement-in-kind projects are identi ed 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 identi ed as part of the FY 2003 deferred maintenance baseline and deferred maintenance identi ed during roof assessments.

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 ve 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, a Power Transmission System Management Plan was completed. The following information is taken from the condition assessments and the management plan.

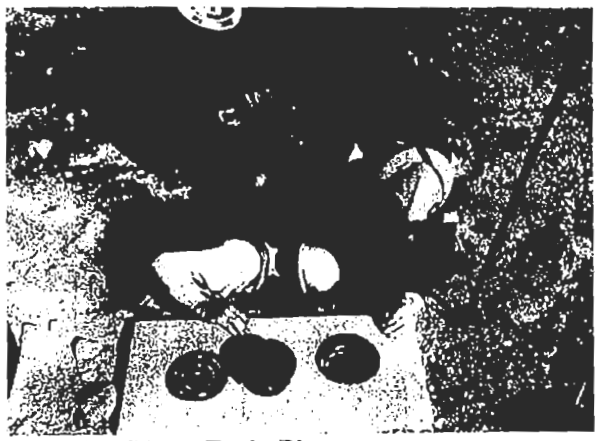
The 138-kV Substation Modernization Project (completed in FY 2002) and the Bus Upgrades Project (completed in FY 2005), along with other projects, have made progress in upgrading the

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 10-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 138-kV 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 138-kV transmission system will be at peak capacity. The utilities serving the NTS are planning upgrades that will increase total system capacity and NSTec has informed power suppliers of our expected loads to allow proper planning.

Power requirements at the NTS have changed signi cantly 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 Mountain Project is to purchase power directly from a local utility while using 10 MW from the NTS during construction. Once the Yucca Mountain Project is directly serviced by the Valley Electric Association, it may have a signi cant impact on the maximum power capacity available to the NTS. Over the next several years, Work For Others Clients at the NTS will require several mega-watts of power in addition to the new power requirements for Critical Experiment Facility (formerly Technical Area 18) as they go into full operation. Even though it appears at this time that the NTS has adequate power for these new loads as well as the existing Defense Programs loads, the available power at the NTS may approach full capacity during this planning period.

4.1.7.1.2 Water Supply System



Installing Water Resin Pipe

In FY 2003, a Water System Management Plan was completed. Although the estimates are not complete on all 57 potential projects identi ed in the plan, the projects estimated so far exceed $50 million.

In addition to the data in the management plan, the FY 2002 and 2003 condition assessment of the entire water system showed numerous poor areas. Major repair or replacement of some water system elements that provide programmatic support is required beyond that which routine maintenance can correct. As with other systems, age and accelerated deterioration due to numerous microquakes, make major repair or replacement an operational issue. The *Safe Drinking Water Act* ruling that lowered the allowable level of arsenic in drinking water to 10 ppb maximum was complied with by January 2006. Projects are proposed for two booster pump stations, ve storage tanks, approximately 10 miles of underground pipeline, and mitigation of tank corrosion and structural issues. Also, the installation

of back ow prevention devices on the domestic water and re sprinkler supply lines to facilities is necessary.

4.1.7.1.3 Sanitary Waste Disposal System

The Sanitary Waste Disposal System is in fair to adequate condition. A full investigation and video analysis to determine the actual condition of buried lines was completed in FY 2003. This analysis revealed that some of the lines were blocked, particularly the lines in Area 12. Maintenance crews cleared the blocked lines as necessary for systems still in use.

Existing sewage lagoons have not had suf cient ow to stay in compliance with Nevada state requirements. Therefore, seven septic systems were installed allowing the lagoons to be bypassed. With the installation of these septic systems, the NTS both complies with state regulations and meets current requirements.

In addition, the existing septic system for Building 5-08 at the Area 5 Radioactive Waste Management Complex was replaced with a new 1,500 gallon tank and a new leach eld in FY 2003.

4.1.7.2 North Las Vegas Utilities

Workers Install a Well at the North Las Vegas Facility

All of the utility service lines on the North Las Vegas Facility Complex (i.e., power, water, sewage, and natural gas) are owned by NNSA/NSO and maintained by NSTec. Responsibilities for power, water, and gas lines begin at the supply service cutoff while responsibility for the sewage outfall lines begins at the property site line. Overall, the current condition of all North Las Vegas Facility Complex utilities infrastructure is good with only minor repairs required periodically. No major repairs or replacements are anticipated, and with the replacement of a section of failed gas line in FY 2003, current capacities of equipment and lines are suf cient for existing loads.

4.1.7.3 Remote Sensing Laboratory-Nellis Utilities

Utility support to the Remote Sensing Laboratory -Nellis is through the Nellis Air Force 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 power. 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 supporting present 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 system 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 water loop project in the next ve 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. Eventually, this interim line could be capped and the same connection used on the new loop that would be adjacent to the property. The most economical new source is approximately 1 mile east of the

compound and belongs to the Southern Nevada Water Authority. NSTec is working with Nellis Air Force Base to solve the water problem.

4.1.7.4 Remote Sensing Laboratory-Andrews Utilities

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

4.1.7.5 Livermore Operations Utilities

All utilities are provided by local utility companies.

4.1.7.6 Special Technologies Laboratory Utilities

All utilities are provided by local utility companies.

4.1.8 Energy Management

Solar Powered Low-Volume Continuous Air Sampling Station near Sedan Crater on the NTS

The NSTec Energy Management Program mission is to implement the energy Policy Act of 2005 through reducing the use and cost of energy in NNSA/NSO facilities by advancing energy ef ciency, water conservation, and the use of solar and other 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/ Headquarters 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 quali ed for In-house Energy Management funding to perform energy savings projects. The projects included retro tting 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 retro t lighting at all North Las Vegas buildings and the Remote Sensing Laboratory-Nellis hangar. All North Las Vegas Facility buildings are managed by an energy system which 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-ef cient 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 Ef ciency Rebate Program from Paci c Gas and Electric Company and Sierra Paci c Power Company. The rebates from Paci c Gas and Electric Company and Sierra Paci c Power Company offer NNSA/NSO reduced savings on the utility bill when ef cient products, such as lighting and programmable thermostats, are installed.

NSTec implemented a company procedure to de ne 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-ef cient technologies. New building commissioning principles will be used in all new design and construction projects. Recently, NSTec 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 NSTec Procurement, has set forth requirements to purchase products within the 25 percent energy ef ciency barrier from vendors who provide such products. Over 50 percent of the energy-consuming products purchased by NSTec meet the Federal Energy Management Program's criteria for energy ef ciency. In FY 2000, Building 177 and Building 132 at the NTS were labeled Energy Star Buildings. These were the rst two facilities in the DOE complex to receive an Energy Star rating. NSTec 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 NSTec website was established to link to federal and local sites which promote energy saving ideas. An employee incentive energy-savings suggestion program was launched 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 signi cant future savings can be accomplished. Current efforts include obtaining support for the renovation of Mercury Base Camp at the NTS, shown to achieve signi cant energy savings. Over 60 billion British Thermal Units per year can be saved through new energy-ef cient facilities after Phase II is complete.

A Mobile Detection Vehicle being Tested at the NTS

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 corresponds to the third of the ve levels of national security conditions; several cumulative increases in de ned adversary capabilities as re ected in the revisions to the Design Basis Threat; and mandated implementation of a Security Police Of cer-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 is 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. A temporary facility is currently serving this function until funding for a permanent implementation is available. Several other security upgrades are also required within the Device Assembly Facility to meet these requirements, several of which are currently underway.

Due to Design Basis Threat-related security initiatives implemented at the NTS over the past year, including a more than doubling of 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 which has been temporarily addressed through the installation of trailers at the Wackenhut Services, Incorporated Training facility. Implementation of the Security Police Officer-III/Special Response Team program and its extensive training regimen cannot be effectively accomplished with existing facilities. The training regimen needs to include an elevated shooting platform, which is currently in the procurement chain, and room for a modern Firearms Training System. A new Live Fire Shoot House that was necessary to meet Order requirement is nearing completion. The additional requirements 2005 Design Basis Threat will be satisfied primarily through the use of technologies such as barriers and enhanced weaponry rather than additional Security Police Officers, minimizing the pressure for additional temporary facilities.

Construction of Shoot House

4.2.1 Security Infrastructure

Wackenhut Services, Incorporated has requested funding in an immediate effort to expand current operational facilities at the NTS in order to accommodate additional personnel and support increased operational requirements. At the NTS, three buildings (1000, 1001, and 1002) make up a small complex adjacent to the NTS main entrance. In Area 6, Building 625, CP-41, and CP-43 support security activities in the forward areas.

OUO Exemption 2

Due to the rapidly increasing size of the protective force, especially, the male population, additional male locker room space was imperative, as was expanding the size of the fitness facility to accommodate more users. The NTS badging office was moved from Building 1000 to 1002. This move provided the space for expansion, in Building 1000, of the fitness facility and male security police force locker room and allowed the renovation of the badging office area rest room facilities into the female security police officer locker room. Building 1001 housed the Assessment/Oversight and Operations Divisions. Both Divisions received additional personnel. The Assessment/Oversight Division exceeded its current available space, therefore, the Division moved from Building 1001 to 1002. Subsequently, the move of the Assessment/ Oversight Division allowed the Operations Division to expand within Building 1001 to include

converting the facility into a general limited access area, which better supports its security activities. Building 1002 now houses the NTS Badging and Assessment/Oversight Division functions.

OUO Exemption 2

This complex will require significant facility renovation and new construction efforts in order to properly train, test, and evaluate protective force personnel, including Special Response Team. A new Training Facility conceptual design has been submitted as a proposed Line Item. In the interim, Building 1103 has required expansion of the administrative office area to support the expanded training cadre and new curriculum developers. The addition of two general instruction classrooms are required to accommodate an increased security police officer force and expansion of the existing armory. The installation of a new shoot house for Special Response Team training was completed in December 2006; a new Elevated Shoot Tower is planned for 2007; a Special Response Team obstacle course and installation of a facility to store and conduct Electronic Simulation Systems equipment and training is also required. As a temporary measure, a modular classroom and two double-wide trailers for use as administrative offices have been installed adjacent to Building 1103. Building 625, in Area 6, is the Wackenhut Fitness Facility. Selected operations will be moved from Building 1000, Mercury, into Building 625, Area 6, in order to provide better management of increasing security activities in the forward area.

OUO Exemption 2

Interior renovation that is needed prior to occupying the facility is expected to be completed spring 2007; however, this is a minimal renovation and a second proposed line item for a facility to meet the response requirements for nuclear facilities in the forward areas would replace this facility if approved. The two Proposed Line Item projects are included in Attachment A-2.

Highlight

Federal Bureau of Investigation agents, U.S. Marshals, Wackenhut Services, Inc. personnel and other paramilitary specialists encounter routine calls upon their ability to transform the chaotic into the manageable, or to turn a nearly-tragic end into a save. For two days in February 2006, those law enforcement professionals and the NTS Fire and Rescue personnel added skills in the form of tactical casualty care. Organized as a two-day lecture and practical exercise, the Tactical Casualty Care Course is a pilot program more than 18 months in the making. The course was borne out of the scarcity of emergency medical experience among security professionals at the NTS.

The security professionals who guard our country's assets everyday also may be among the first to respond to a mass casualty incident. It is in the best interest of the security personnel on-scene, the injured, and the medical professionals who later will attend to the injured, to have first-responders as informed as possible when it comes to providing emergency medical assistance. Law enforcement usually does not get this kind of training. There are relatively few who have tactical medical training or experience.

The special nature of the course allows participants to practice using gear they do not typically have a reason to use.

Agencies are establishing tactical medical programs and using courses like this to bridge the gap between civil emergency medicine and tactical medicine. The course is a pilot program sure to evolve and improve over time.

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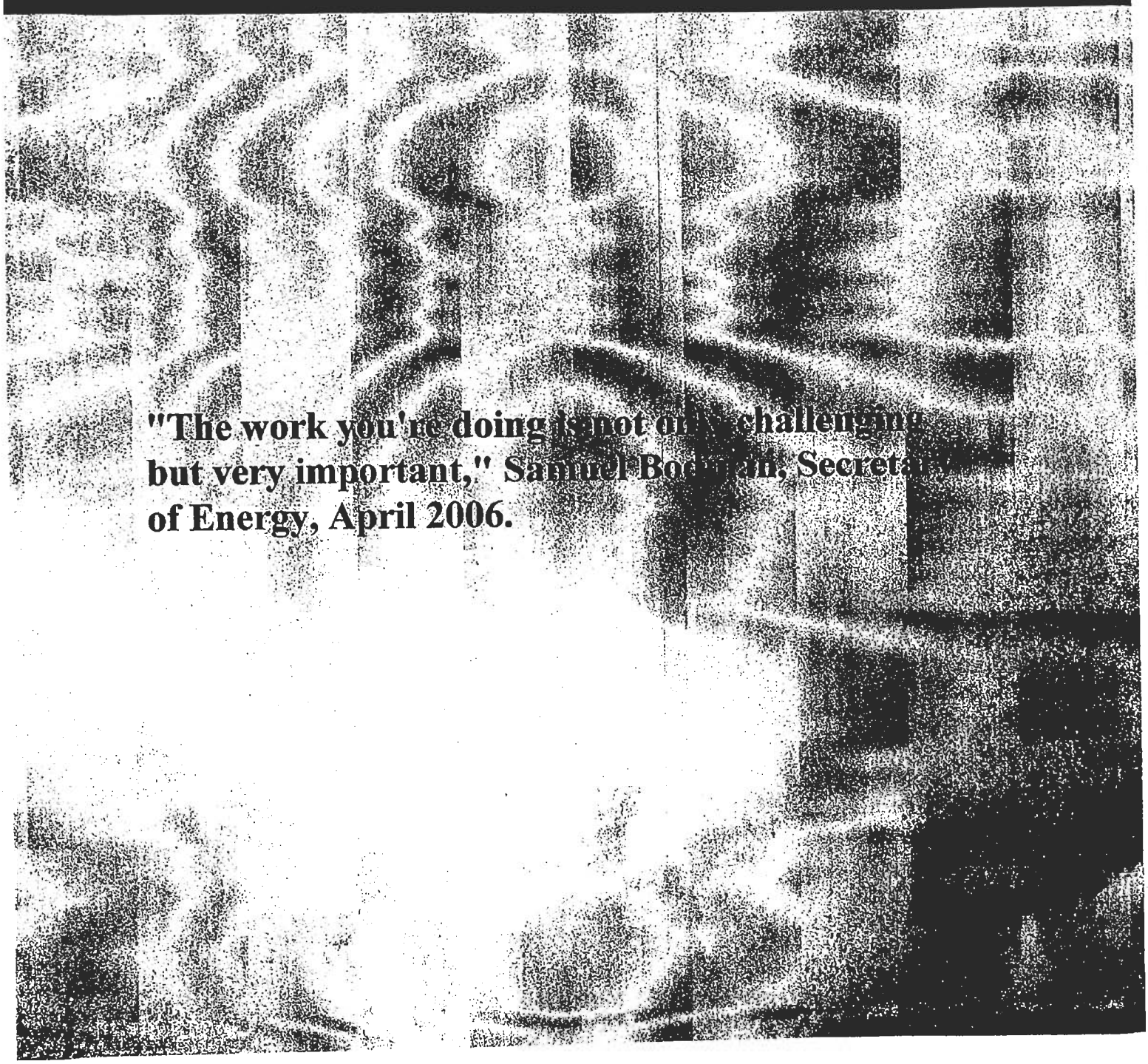
Facilities and Infrastructure Projects/ Activities and Cost Profile

Wild horses near Captain Jack Spring

FY 2008 NNSA/NSO
Ten-Year Site Plan



5.0 Facilities and Infrastructure Projects/Activities and Cost Profile

5.1 Overview of Site Project Prioritization and Cost Profile

NSTec has established a multilevel prioritization process to rank projects within each year in the overall project list. Projects are grouped into the following order of priority based on the current emphasis to reduce deferred maintenance and improve mission-critical facilities and infrastructure to good or excellent condition:

- Maintenance for mission-critical and mission dependent, not critical facilities and infrastructure are ahead of non-mission-dependent facilities and infrastructure.
- Deferred maintenance projects for mission-critical facilities have the highest priority, followed by deferred maintenance projects on mission dependent, not critical facilities and infrastructure, then deferred maintenance projects on not mission dependent facilities and infrastructure, then non-deferred maintenance projects on mission-critical facilities, non-deferred maintenance projects on mission dependent, not critical and infrastructure and lastly, non-deferred maintenance projects on buildings and infrastructure that are not mission dependent.
- The Lawrence Livermore National Laboratory priority matrix is used as an added indicator of a project's importance.
- Finally, the Facilities and Infrastructure Recapitalization Rating methodology is the nal step in prioritizing a project's ranking in the overall project list.

Chapter Overview

- Provides a discussion of the project prioritization process
- Lists signi cant project deletions and additions
- Introduces spreadsheets

Projects are assigned to each year during the planning period within the Future Years National Security Program budget constraints and are approved by NSTec and the U.S. Department of Energy, National Nuclear Security Administration, Nevada Site Of ce management. This management oversight allows some intervention to the prioritization process to ensure that critical projects, where compliance issues and safety issues may become the dominant priority, are funded and completed in the necessary time frame.

All projects in this plan have been prioritized by the described methodology and are shown in Appendix A, Attachment A-4, Facilities and Infrastructure Recapitalization Program Nevada Site Of ce.

5.2 Significant Project Deletions and Additions

The nal changes within Facility Information Management System that recast all mission essential facilities and infrastructure and non-mission essential as mission critical, mission dependent not critical, and not mission dependent, have realigned deferred maintenance values as re ected in the FY 2008 *TYSP*. The recast and resulting modi ed mix and budget cuts have put meeting the FY 2009 goals at risk. The effects of the recasting are presented in Appendix A, Attachments F-1 thorough F-5.

No projects have been removed since the FY 2007 TYSP was issued. Thirteen additional facilities have been identi ed for potential demolition in FY 2008. See Appendix A, Attachments E-1 and E-4.

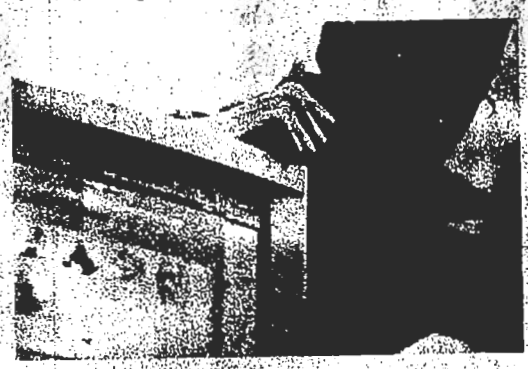
5.3 Facilities and Infrastructure Cost Projection Spreadsheets

Cost projection spreadsheets provide an understanding and overview of the forecasts for NNSA/NSO facilities and infrastructure projects and other activities for FY 2008 - 2017. A general overview and the cost projection spreadsheets (Attachments A-1 through A-6) are included in Appendix A.

Highlight

An annual Facility and Infrastructure Sustainment Cost model was developed for the NTS. The Facility and Infrastructure Sustainment Cost model implements a mission risk-based asset management approach to project facility level sustainment budgets for NSTec facilities and infrastructure under management based on asset condition, asset value to ongoing site missions and activities, and relative cost of sustainment based on location and compliance requirements.

Information for Facility and Infrastructure Sustainment Cost is derived from the Facility Information Management System and the U.S. Department of Defense Facilities Pricing Guide.



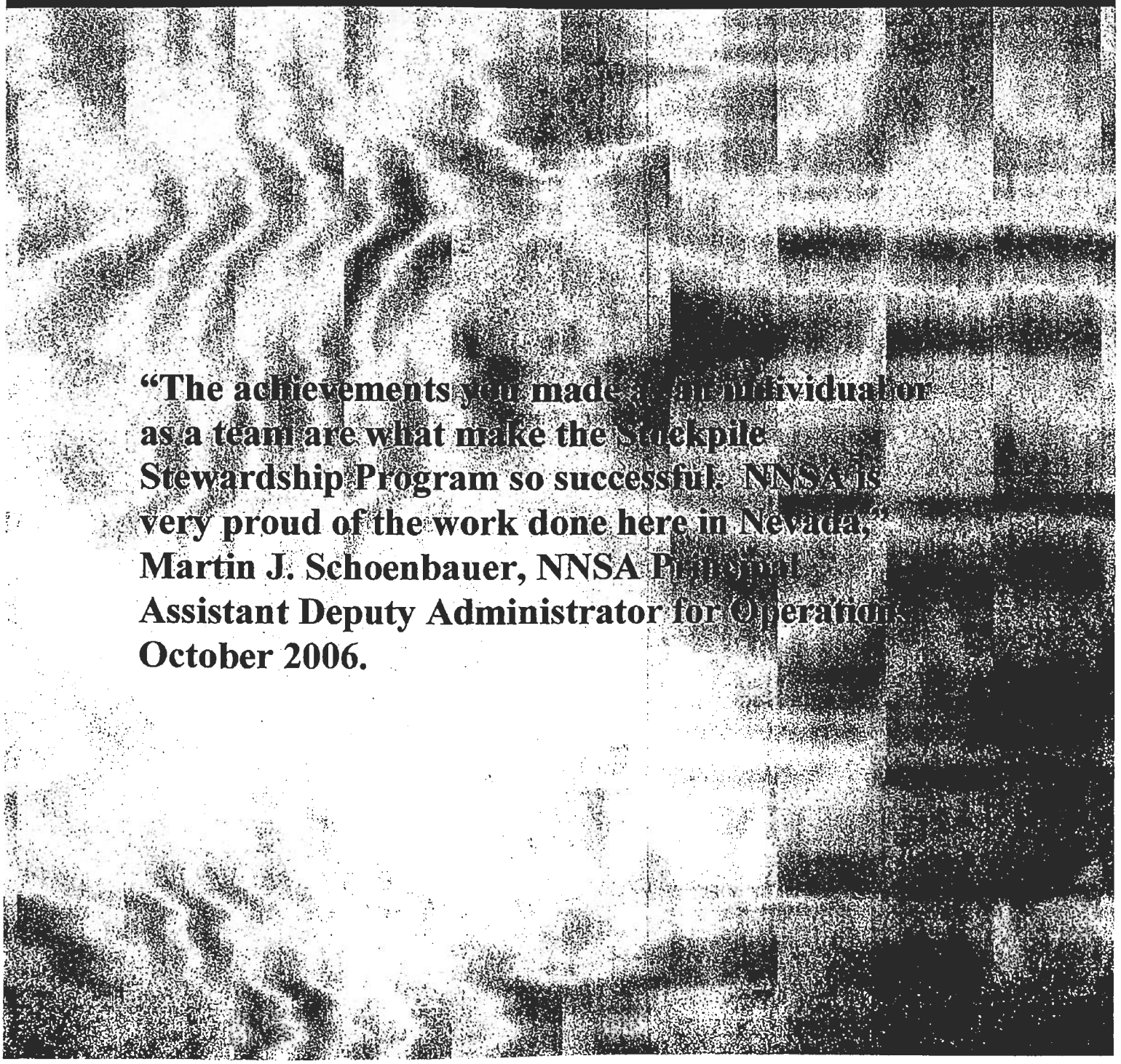
Facility and Infrastructure Sustainment Cost provides appropriate detail for estimating annual management budgets for NTS facilities including baseline asset sustainment cots estimated from comparable costs for military facilities and infrastructure and additional sustainment markup factors. Markup factors are based on scoring facility and infrastructure attributes and conditions. It favors more critical facilities with greater hazards and compliance requirements. Sustainment markup factors convert scores to total asset sustainment costs using a benchmarking algorithm based on previous site experience.

Facility and Infrastructure Sustainment Cost will be used to provide estimates for input to speci c annual maintenance plans and to implement a value-added basis for facility management. It can prioritize activities to be performed within a given budget or in a given time period. It can be used to develop an integrated resource load schedule for facility and infrastructure investments. Facility and Infrastructure Sustainment Cost can provide support for an earned value management system.

Appendix A

A blooming redspined fishhook cactus with a Utah [illegible]

FY 2008 NNSA/NSO Ten-Year Site Plan



"The achievements you made as an individual or as a team are what make the Stockpile Stewardship Program so successful. NNSA is very proud of the work done here in Nevada," Martin J. Schoenbauer, NNSA Principal Assistant Deputy Administrator for Operations, October 2006.

Appendix A: Attachments A-B and E-G

Attachment A: 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: Facilities and Infrastructure Cost Projection Spreadsheet Line Item Projects for Nevada Test Site. 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: Facilities and Infrastructure Cost Projection Spreadsheet Proposed Line Item Projects 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: NNSA Facilities and Infrastructure Cost Projection Spreadsheet RTBF/Operations of Facilities for Nevada Test Site. This spreadsheet includes all Expense projects and General Plant projects not funded through the Facilities and Infrastructure Recapitalization Program and speci cally 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: NNSA Facilities and Infrastructure Cost Projection Spreadsheet Facilities and Infrastructure Recapitalization Program (FIRP) for Nevada Test Site. 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: Other Facilities and Infrastructure Cost Projection Spreadsheet for Nevada Test Site. This spreadsheet shows facilities and infrastructure projects associated with non-NNSA tenant programs and activities. This spreadsheet was completed consistent with scal planning guidance provided by applicable tenant programs or activities.

Attachments A-6 (a-b): NNSA Facilities and Infrastructure Cost Projection Spreadsheet Currently Funded Security Infrastructure Projects for Nevada Test Site. Attachment 6a spreadsheets crosswalks security infrastructure projects currently accepted for execution for FY 2007 and planning for FY 2008 and FY 2009. Attachment 6b lists the planned unfunded projects for FY 2008 and FY 2009 only, using the Security Infrastructure Rating Matrix.

Attachment B: Site's Asset Utilization Index

Attachment B: Site's Utilization Index. This attachment reports asset utilization for the ve building categories de ned by the Federal Real Property Council.

Attachment E: Facilities Disposition, New Construction, and Leased Space Spreadsheets

Attachment E-1: Facilities Disposition Plan. This spreadsheet re ects all facilities that are currently excess to DOE and those that will become excess in the FY 2007-2016 period.

Attachment E-2: New Construction Footprint Added. This spreadsheet re ects 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: Grandfathered Footprint Added. This spreadsheet identi es projects that meet the provision that approval for start of construction was provided prior to FY 2003.

Attachment E-4 (a-b): Footprint Tracking Summary Spreadsheet Nevada Test Site Footprint Tracking Summary-NNSA; Site Wide (Multi-program). 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: Waiver and Transfer Log (Space Added or Eliminated). 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 2007 Leased Space Nevada Test Site. This spreadsheet outlines the NNSA portfolio of FY 2007 leased space.

Attachments F-1 to F-2: Deferred Maintenance Baseline and Projected Deferred Maintenance Reduction Spreadsheets/ F-3 to F-5: Charts Showing Site's Total NNSA Deferred Maintenance, Facility Condition Index and Replacement-In-Kind Projects

Attachment F-1: FIRP FY 2003 Legacy Deferred Maintenance Baseline and Projected Deferred Maintenance Reduction from Baseline NNSA ($000s). This spreadsheet is a summary of the Deferred Maintenance Baseline. This spreadsheet re ects 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 NNSA ($000s). This spreadsheet re ects 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: Input Sheet for Chart: Nevada Test Site Deferred Maintenance Profile for NNSA F & I. This chart illustrates the Site's total NNSA deferred maintenance and the NNSA deferred maintenance for mission critical facilities and infrastructure.

Attachment F-4: Nevada Test Site's Facility Condition Index (FCI) for NNSA F & I. This quad chart show graphs (1) Total FCI; (2) Mission critical FCI; (3) Mission dependent, not critical FCI; and (4) Not mission dependent FCI for NNSA's Mission Critical Facilities and Infrastructure.

Attachment F-5: Replacement-in-kind Projects Over $500K. This spreadsheet provides the Nevada Test Site's current replacement-in-kind requirements over $500, including funds budgeted for and those not budgeted for.

Attachment G: NNSA/ NSO Mission-Critical Facilities

Attachment G: List of Mission-Critical Facilities and Infrastructure . This spreadsheet lists NNSA/ NSO mission-critical facilities and infrastructure.

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 Dependency (4)	Mission Dependency Program (4a)	Deferred Maintenance Reduction (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total (8)	Prior Years Funding (9)	FY 2006 (10)	FY 2007 (11)	FY 2008 FYNSP (12)	FY 2009 FYNSP (13)	FY 2010 FYNSP (14)	FY 2011 (15)	FY 2012 FYNSP (16)	FY 2013 (17)	FY 2014 (18)	FY 2015 (19)	FY 2016 (20)	FY 2017 (21)
A. Readiness in Technical Base and Facilities (RTBF) Line Items																						
1	NTS Replace Fire Station No. 1 and No. 2, Area 6 and Area 23[1]	04-D-103.1 06-D-402 NTS-00-020		MD		4,142	30,960	OPC	705	705												
								PE&D	2,343	2,343												
								LI	28,839		8,201	13,919	6,719									
								Total (TPC)	31,887	3,048	8,201	13,919	6,719									
2	Bldg. B-3 Remediation Restoration & Upgrade NLV	06-D-404		MD		2,500		OPC	3,348	500			2,848									
								PE&D	-													
								LI	15,840		15,840											
								Total (TPC)	19,188	500	15,840		2,848									
B. Facilities & Infrastructure Recapitalization Program (FRP) Line Items																						
1	Mercury Highway	NTS-00-003		MD		17,736		OPC	450		300	150										
								PE&D	-													
								LI	15,800				7,800	8,000								
								Total (TPC)	16,250		300	150	7,800	8,000								
Readiness in Technical Base and Facilities (RTBF) Line Items - Total									51,975	3,548	24,341	14,069	17,367	8,000	-	-	-	-	-	-	-	-
C. Department of Homeland Security																						
1	Radiological/Nuclear Countermeasure Test and Evaluation Complex (RadNuclCTEC)[2]	XXX-XX-XXX		MD			11,500	OPC														
								PE&D														
								LI	33,000	10,219	20,229	2,552										
								Total (TPC)	33,000	10,219	20,229	2,552	-	-	-	-	-	-	-	-	-	-
Department of Homeland Security - Total									33,000	10,219	20,229	2,552	-	-	-	-	-	-	-	-	-	-
D. Department of Defense Work for Others Line Items																						
1	Yucca Lake Runway	XXX-XX-XXX		MD				OPC														
								PE&D														
								LI	11,140	11,140												
								Total (TPC)	11,140	11,140	-	-	-	-	-	-	-	-	-	-	-	-
2	Yucca Lake Hanger Complex	XXX-XX-XXX		MD			29,130	OPC	-													
								PE&D	-													
								LI	22,600	22,600												
								Total (TPC)	22,600	22,600	-	-	-	-	-	-	-	-	-	-	-	-
Department of Defense Work for Others - Total									22,600	22,600	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
1. Matches ICPP, but may change due to recent decision to not accept current bids.
2. RadCNuTec project the following: *Under review as of 2/15/07.

Attachment A-2

Facilities and Infrastructure Cost Projection Spreadsheet

Proposed Line Item Projects for Nevada Test Site

(NNSA)

Priority (1)	Project Name (2)	Project Number (3)	Deferred Maintenance Identified (4a)	Mission Dependency (4b)	Mission Dependency Program (4c)	Deferred Maintenance Reduction (5)	GSF Added or Eliminated (6)	Funding Type (7)	Total (8)	FY 2007 (11)	FY 2008 (12)	FY 2009 (13)	FY 2010 (14)	FY 2011 (15)	FY 2012 (16)	FY 2013 (17)	FY 2014 (18)	FY 2015 (19)	FY 2016 (20)	FY 2017 (21)
A. Readiness in Technical Base and Facilities (RTBF) Line Items																				
1	NTS DAF Roof Replacement	XXX-XX-XXX		MD				OPC	350		350									
								PEAD	2,650			2,650								
								LI	7,000				7,000							
								Total (TPC)	10,000		350	2,650	7,000							
2	NTS Cafeteria (Area 6)	NTS-06-032		MD		656		OPC	279			279								
								PEAD	1,454				1,454							
								LI	6,535					6,535						
								Total (TPC)	8,268			279	1,454	6,535						
3	NTS Fire Alarm System Replacement	NTS-00-005		MD				OPC	454					454						
								PEAD	2,650						2,650					
								LI	15,120								15,120			
								Total (TPC)	18,224					454	2,650		15,120			
4	Mercury Office Building Reconfiguration	XXX-XX-XXX		MD				OPC	240						240					
								PEAD	4,800						4,800					
								LI	19,200						12,000	7,200				
								Total (TPC)	24,240						17,040	7,200				
5	Administration Facility A-23	XXX-XX-XXX		MD				OPC	240				240							
								PEAD	4,800					4,800						
								LI	19,200						12,000	7,200				
								Total (TPC)	24,240				240	4,800	12,000	7,200				
	Readiness in Technical Base and Facilities (RTBF) Line Items - Total								71,382	-	350	619	6,434	23,769	22,850	7,200	15,120	-	-	
B. Safeguards & Security (S&S) Line Items																				
1	Nevada Test Site Security Service Facility - Mercury	XXX-XX-XXX		TBD				OPC	460				460							
								PEAD	9,200					9,200						
								LI	36,800						18,800	18,000				
								Total (TPC)	46,460				460	9,200	18,800	18,000				
2	Nuclear Security Response Facility (Area-6)	XXX-XX-XXX		TBD				OPC	130					130						
								PEAD	1,740					1,740						
								LI	6,960					6,960						
								Total (TPC)	8,830					8,830						
	Safeguards & Security (S&S) Line Items - Total								139,482			619	6,894	41,340	41,650	25,200	15,120			

Attachment A-6
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
RTBF/NSO portions of Facilities for Nevada Test Site
($000s)

Priority (1)	Project Name (2)	Project Number (3)	Mission Dependency (4)	Deferred Maintenance Reduction (5)	GAP Added or Eliminated (6)	Funding Type (7)	Total (8)	Prior Years' Funding (9)	FY 2006 (10)	FY 2007 FYNSP (11)	FY 2008 FYNSP (12)	FY 2009 FYNSP (13)	FY 2010 FYNSP (14)	FY 2011 FYNSP (15)	FY 2012 FYNSP (16)	FY 2013 (17)	FY 2014 (18)	FY 2015 (19)	FY 2016 (20)	FY 2017 (21)
CTI Projects																				
1	NOCT - M&O	N/A	N			GPP	3,365													
2	NOCT - NSO	N/A	N			GPP	4,035													
3	NOCT - M&O	N/A	N			GPP	3,179													
CTI Projects Total																				
RTBF - Infrastructure & Other Excluded by the Current FYNSP																				
1	Water Total - M&O[1]	[redacted]	Y	[redacted]	[redacted]	E	4,000		4,000											
2	Roads - M&O[1]	[redacted]	Y	[redacted]	[redacted]	E	4,000		2,000	2,000										
3	Fiber Link - M&O[1]	[redacted]	Y	[redacted]	[redacted]	E	850		850											
4	EOC - M&O[1]	[redacted]	Y	[redacted]	[redacted]	E	1,000		1,000											
5	AMSI - M&O[1]	[redacted]	N	[redacted]	[redacted]	E	1,000		1,000											
6	GIS - M&O[1]	[redacted]	N	[redacted]	[redacted]	E	700		700											
7	ETL - M&O[1]	[redacted]	N	[redacted]	[redacted]	E	2,000		2,000											
8	TA-18 - M&O	[redacted]	Y	[redacted]	[redacted]	E	950		550	380										
8	DAF DPC - M&O	[redacted]	Y	[redacted]	[redacted]	E	7,297		3,348	547		3,392								
8	Channel University Farming	[redacted]	Y	[redacted]	[redacted]	E	2,375			2,375										
8	Special Projects	[redacted]	Y	[redacted]	[redacted]	E	700			700										
RTBF Projects Funded Total									15,248	7,862		[illegible]								
RTBF Facilities Program Funded Projects Excluded in FYNSP[1]																				
DAF		[redacted]	Y	[redacted]	[redacted]	E														
1	Crack Monitoring	[redacted]	Y	[redacted]	[redacted]	E	900		300	200	50	60	50	60	50	50	50	50	50	60
2	Penetration Repair	[redacted]	Y	[redacted]	[redacted]	E	1,800		600	600	600									
3	CWN	[redacted]	Y	[redacted]	[redacted]	E	140		70	70										
4	DAF Add "Q" storage /break trailer	[redacted]	Y	[redacted]	[redacted]	E	1,400		700	700										
5	DAF Tritium Monitor	[redacted]	Y	[redacted]	[redacted]	E	400		200	200										
6	Evaluate DAF active HVAC system	[redacted]	Y	[redacted]	[redacted]	E	600		300	300										
7	Metasys	[redacted]	Y	[redacted]	[redacted]	E	1,212			300	300	300	312							
8	LINAC	[redacted]	Y	[redacted]	[redacted]	E	1,200					600	600							
9	Defense Brd Recommendation 04-2	[redacted]	Y	[redacted]	[redacted]	E	900			300	300	300								
10	Fire Suppression Lead-ins	[redacted]	Y	[redacted]	[redacted]	E	5,000					1,000	1,000	1,000	1,000	1,000				
11	UPS Panels	[redacted]	Y	[redacted]	[redacted]	E	300			300										
12	Replace Diesel Generators	[redacted]	Y	[redacted]	[redacted]	E	400							400						
13	Miscellaneous Small Projects	[redacted]	Y	[redacted]	[redacted]	E	1,100							200		100	200	200	200	200
14	Instrument Air Compressors/Dryers	[redacted]	Y	[redacted]	[redacted]	E	300							300						
15	ATS Upgrades & Bypass	[redacted]	Y	[redacted]	[redacted]	E	100					100								
16	Replace Cooling Towers	[redacted]	Y	[redacted]	[redacted]	E	-													
17	Replace Boilers	[redacted]	Y	[redacted]	[redacted]	E	675						675							
18	Plant Air Compressors	[redacted]	Y	[redacted]	[redacted]	E	100						100							
19	Expand CRE-MS (Secure LAN)	[redacted]	Y	[redacted]	[redacted]	E	250							250						
20	DAF Complex Control Center	[redacted]	Y	[redacted]	[redacted]	E	500								500					
21	CFF Security Upgrades	[redacted]	Y	[redacted]	[redacted]	E	300					300								
22	CRE-MS	[redacted]	Y	[redacted]	[redacted]	E	250					250								
23	Diesel Generator Air Flow Correction	[redacted]	Y	[redacted]	[redacted]	E	201		67	67		67								
24	Tritium Monitors	[redacted]	Y	[redacted]	[redacted]	E	517								517					
25	Field Mills	[redacted]	Y	[redacted]	[redacted]	E	100					100								
U1a		[redacted]	Y	[redacted]	[redacted]	E														
26	Minor Projects	[redacted]	Y	[redacted]	[redacted]	E	2,292				130		300	210	300	250	257	264	272	279
27	U1a Remove Legacy cables	[redacted]	Y	[redacted]	[redacted]	E	1,000		500		500									
28	U1a Complete comm upgrade	[redacted]	Y	[redacted]	[redacted]	E	2,000		1,000	500		500								
29	Complex Mining	[redacted]	Y	[redacted]	[redacted]	E	2,000										500	500	500	500
30	Remove U1a LOS Ventilation Duct	[redacted]	Y	[redacted]	[redacted]	E	-													
31	Xfmrs to Replace Mine Power Ctr	[redacted]	Y	[redacted]	[redacted]	E	-													
32	Aux Power Extension Design	[redacted]	Y	[redacted]	[redacted]	E	-													
33	Upgrade U1a Power Supply	[redacted]	Y	[redacted]	[redacted]	E	350					350								
34	U1a Hoist Control System Upgrade	[redacted]	Y	[redacted]	[redacted]	E	1,400								600	800				
35	U1a Diagnostic/Data Building	[redacted]	Y	[redacted]	[redacted]	E	3,500						1,700	1,000	800					
36	Power Skid Upgrade	[redacted]	Y	[redacted]	[redacted]	E	407					407								
37	U? Drift Modifications	[redacted]	Y	[redacted]	[redacted]	E	1,500								1,000	500				
38	U1g Station Deck	[redacted]	Y	[redacted]	[redacted]	E	270							270						
39	Surface Storage Building	[redacted]	Y	[redacted]	[redacted]	E	630						300	330						
40	U1h Cable Plant	[redacted]	Y	[redacted]	[redacted]	E	2,000							1,000		1,000				
41	U1a Shaft Re-hab	[redacted]	Y	[redacted]	[redacted]	E	5,000										1,200	1,200	1,300	1,000
42	Underground Shop/Storage Area	[redacted]	Y	[redacted]	[redacted]	E	1,000											1,000		
43	Containment Bulkheads	[redacted]	Y	[redacted]	[redacted]	E	2,000										1,000	1,000		
44	Security Upgrades	[redacted]	Y	[redacted]	[redacted]	E	1,000										1,000			
45	Fencing and Lighting Upgrade	[redacted]	Y	[redacted]	[redacted]	E	1,000									500	500			
46	Pavement of Complex Areas	[redacted]	Y	[redacted]	[redacted]	E	1,500										500	1,000		
[illegible]		[redacted]	Y	[redacted]	[redacted]	E														
47	Repair water tank	[redacted]	Y	[redacted]	[redacted]	E	500		250	250										
48	JASPER Critical Spare Parts / Piston Holder	[redacted]	Y	[redacted]	[redacted]	E	700		350	350										
49	JASPER CSP Storage	[redacted]	Y	[redacted]	[redacted]	E	400		200		200									
50	JASPER Repair Bldg roof/HVAC	[redacted]	Y	[redacted]	[redacted]	E	400		200	200										
51	Rearrange control room	[redacted]	Y	[redacted]	[redacted]	E	200				200									
52	Add temperature control for 27-5110	[redacted]	Y	[redacted]	[redacted]	E	200					200								
53	Increase electrical power to control room	[redacted]	Y	[redacted]	[redacted]	E	180				180									
54	Install security fence	[redacted]	Y	[redacted]	[redacted]	E	500									500				
55	Install HVAC for 27-5110	[redacted]	Y	[redacted]	[redacted]	E	120					120								
56	Install insulation for 27-5110	[redacted]	Y	[redacted]	[redacted]	E	60				60									
57	Repair & seal access roads	[redacted]	Y	[redacted]	[redacted]	E	-													
58	Expand laser room	[redacted]	Y	[redacted]	[redacted]	E	430							430						
59	Add concrete cart path	[redacted]	Y	[redacted]	[redacted]	E	180									180				
60	Expand septic drain field	[redacted]	Y	[redacted]	[redacted]	E	-													

Attachment A-4
NNSA Facilities and Infrastructure Cost Projection Spreadsheet
RTBF/Operations of Facilities for Nevada Test Site
($000s)

Priority (1)	Project Name (2)	Project Number (3)	Mission Dependency (4)	Deferred Maintenance Reduction (5)	GAP Added or Eliminated (6)	Funding Type (7)	Total (8)	Prior Years' Funding (9)	FY 2006 (10)	FY 2007 FYNSP (11)	FY 2008 FYNSP (12)	FY 2009 FYNSP (13)	FY 2010 FYNSP (14)	FY 2011 FYNSP (15)	FY 2012 FYNSP (16)	FY 2013 (17)	FY 2014 (18)	FY 2015 (19)	FY 2016 (20)	FY 2017 (21)
[illegible]		[redacted]	Y	[redacted]		E														
61	PA/Radio/Communication Upgrade		Y			E	700		350	350										
62	Insulate Buildings 5323 & 5324		Y			E	400		200	200										
63	Resilient Flooring in 5321&5320		Y			E	400		200	200										
64	Insulate Blast Enclosure #1, #2, #3		Y			E	400		200	200										
65	Water Chiller - Bunker		Y			E	1,000		500		500									
66	Communication Fiber from 4-300 to Microwave Trailer		Y			E	200		100	100										
67	Lighting Protection on Shot Table		Y			E	570		285			285								
68	Water Chiller - Table		Y			E	1,000		500			500								
69	ACEF EFP		Y			E	1,000		500				500							
70	Repair Access Road to Area 27		Y			E	1,400		500					200	200	500				
71	Compressed Air		Y			E	100						100							
72	New Maintenance Trailer w/ Tools		Y			E	300						300							
73	[illegible] Buildings 5323 & 5324		Y			E	100						100							
74	Control System Upgrades		Y			E	500							500						
75	Build Flood Control Structures		Y			E	400									400				
76	Build new roads within Baker Site		Y			E	300									300				
[illegible]			Y			E														
77	None		Y			E	-													
RTBF Facilities [illegible] Funded Projects Total									7,[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]										[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TBD
RTBF Facilities Maintenance Included in FYNSP																				
[redacted]	DAF - M&O & JNPO Maintenance	[redacted]	Y	[redacted]		E	153,473			9,200	10,878	13,330	13,707	13,870	14,362	14,764	15,177	15,802	16,039	16,458
	U1a - M&O & JNPO Maintenance		Y			E	37,958			4,400	2,946	3,026	3,113	3,200	3,290	3,382	3,477	3,574	3,674	3,777
	JASPER - M&O & JNPO Maintenance		Y			E	9,685			647	1,030	1,049	1,068	1,088	745	784	795	807	830	853
	HE Facilities - M&O & JNPO Maintenance		Y			E	11,674			817	943	989	998	1,074	1,053	1,082	1,112	1,143	1,175	1,208
	APPF - M&O & JNPO Maintenance		Y			E	1,709			841	868							-	-	-
RTBF Facilities Maintenance Funded Total										[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RTBF Operations of Facilities Included in FYNSP																				
[redacted]	DAF - M&O & JNPO	[redacted]	Y	[redacted]		E	284,114		29,834	21,300	19,868	19,720	20,512	21,814	22,733	24,209	24,949	25,647	26,365	27,103
	U1a - M&O & JNPO		Y			E	169,667		15,951	11,639	12,795	13,143	13,511	13,800	13,710	14,094	14,488	14,894	15,311	15,740
	JASPER M&O & JNPO		Y			E	77,000		5,051	6,651	5,844	6,240	8,411	8,302	6,478	6,660	6,846	7,038	7,235	7,438
	HE Facilities - M&O & JNPO		Y			E	29,290		3,274	1,853	1,815	2,200	2,264	2,398	2,441	2,488	2,535	2,606	2,678	2,754
	HLV - M&O		Y			E	25,540		1,887	1,852	1,739	1,636	1,687	1,640	1,994	2,050	2,107	2,166	2,227	2,289
	CP - M&O		Y			E	37,412		2,180	2,234	2,224	2,208	2,630	2,704	2,779	2,857	2,937	3,019	3,104	3,191
	FB - JNPO		Y			E	8,204		673	673	683	711	731	752	773	794	816	839	863	887
	LO - M&O		Y			E	(580)		(580)											
	LAO - M&O		Y			E	(371)		(371)											
	APPF - M&O & JNPO		Y			E	9,144		2,778	1,375	1,787				2,204					
RTBF Facilities Operations Funded Total									[illegible]	46,277	46,844	46,416	47,[illegible]	49,[illegible]	53,117	53,[illegible]	54,[illegible]	56,[illegible]	57,794	[illegible]
Total RTBF Operations of Facilities								[redacted]												
RTBF Approved Funding Per CTI per AIP																				
Total RTBF Funding Allocation									[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FYNSP Target Constraints									[illegible]	[illegible]	67,778	[illegible]	75,171	[illegible]	79,562	TBD	TBD	TBD	TBD	TBD

Notes:
1. These projects are identified as Congressional Earmarks.
2. RTBF Conducted financial planning from FY07 – FY13; therefore RTBF Operations of Facilities FY14 – FY17 costs are escalated projections only from base FY13 costs.
3. Emergency Management Wedge Items (RBL) were not updated and cleared to zero.

Attachment A-4
NNSA Facilities and Infrastructure Recapitalization Program (FIRP) for Nevada Test Site
Facilities and Infrastructure Recapitalization Program (FIRP) Project Spreadsheet

FIRPR Priority (1)	Year	Project Name (2)	FIRPR Score (3)	Project Number (4)	Mission Dependency (5)	FIRPR Baseline Deferred Maintenance Reduction (6)	Capital Asset or Expendable? (7)	Funding Type (8)	Total Project Cost (TPC) ($K) (9)	Prior Years Funding ($)	FY 2007 ($) (10)	FY 2008 PRIDE ($K)	FY 2009 PRIDE ($K)	FY 2010 PRIDE ($K)	FY 2011 PRIDE ($K)	FY 2012 PRIDE ($K)	FY 2013 ($)
1	2005	NLV HAP Deferred Maintenance Activities FY2005	50	NV-DM-444	MD	OTHER	1,000	-	E	20	20						
2	2005	NTS New 500/Old Water Tank(s), Area 6	45	NV-DM-478	MD	RTBF	2,823	-	GPP	3,885	3,885						
3	2006	NTS Replace Old Fixed PIDs, Area 6	65	FM-06-500	MD	RTBF	4,700	-	GPP	2,524	1,702	822					
4	2006	NTS Replace Water System, Area 6	65	FM-06-501	MD	RTBF	1,438	-	GPP	1,144	950	351					
5	2006	NTS BLC Cable T30 Substation, Area 6	65	FM-06-504	MD	RTBF	1,130	-	GPP	758	543	212					
6	2006	NTS Replace/Install New Microwave System: CP-1B to Area 1 Subdock	55	FM-06-506	MD	RTBF	439	-	GPP	743	180	563					
7	2006	NTS BLC Substation Transmitter	55	FM-06-511	MD	RTBF	992	-	GPP	597	86	511					
8	2006	NTS Replace Cable Manually to Spotted Range	55	FM-06-512	MD	RTBF	501	-	GPP	404	62	342					
9	2006	NTS Replace Old Fixed Boiler, Building 23-154	55	FM-06-513	MD	RTBF	850	-	GPP	700	105	595					
10	2006	NTS Replace Old Fixed Boiler, Building 23-111	55	FM-06-514	MD	RTBF	850	-	GPP	656	270	386					
11	2006	NTS Roof Repairs Phase 2	45	FM-06-510	MD	RTBF	1,100	-	E	575	73	502					
12	2007	NTS BLC REEF Power Line	65	FM-07-507	MD	RTBF	1,810	-	E	3,585	1,749	1,054	782				
13	2007	NTS Replace Old-Based PIDs-A12 West	65	NTS-07-508	MD	RTBF	4,500	-	GPP	4,600	606	1,360	2,635				
14	2007	NTS Replace Old-Based PIDs-A12 West	55	NTS-07-509	MD	OTHER	4,650	-	GPP	3,451	300	150	2,851				
15	2007	NTS Replace Old Fixed Boiler, Building 23-128	55	NTS-07-510	MD	OTHER	4,500	-	GPP	785	50		735				
16	2007	NTS Roof Repairs Phase 3	45	NV-DM-442	MD	RTBF	4,500	-	GPP	4,600	3,575	664	631				
17	2007	NTS Roof Repairs Phase 3	45	FM-07-502	MD	OTHER	500	-	GPP								
18	2007	NLV LAN Switch Replacements	45	FM-07-508	MD	RTBF	4,300	-	GPP	4,950	314	2,540	1,960				
19	2005	NTS Replace Old-Based PIDs, A12 East & SW 2-Pair	65	NTS-05-119	MD	OTHER	3,600	-	GPP	3,682				3,682			
20	2006	NTS Replace Well 6/Army Well #1 (Camp Mercury)	55	FM-06-518	MD	RTBF	3,800	-	GPP	3,960				3,960			
21	2006	NTS Replace A-12 Water Tank, Controls and Distribution System	55	NV-DM-476	MD	RTBF	2,510	-	GPP	2,581				2,581			
22	2006	NTS BLC ABL Pittman #2	50	FM-06-505	MD	RTBF	1,800	-	E	1,843				1,843			
23	2006	NTS BLC Substation #12	65	NTS-07-043	MD	OTHER	1,200	-	GPP	1,276			1,276				
24	2009	NTS Replace Old Based PIDs Area 6 & 26	65	NTS-09-041	MD	RTBF	1,200	-	GPP	1,276			1,276				
25	2009	NTS Replace Old Based PIDs Area 11 (Gates 100 to End & Bypass #5)	65	NTS-09-042	MD	RTBF	4,000	-	GPP	4,253			4,253				
26	2009	NTS Replace/Install New Microwave System: Shoshone to Grapevine Pass	50	NV-DM-442	MD	RTBF	2,900	-	GPP	3,310			310				
27	2009	NTS Replace/Install New Microwave System: Shoshone to Grapevine Pass	50	NV-DM-443	MD	RTBF	894	-	GPP	938	11		927				
28	2009	NTS Reconstruct Mercury Hwy Sec. 11 (Bypass #1 Bypass to Begin Bypass #1)	50	NTS-09-052	MD	RTBF	1,058	-	GPP	1,105			1,105				
29	2009	NTS Replace/Install New Microwave System: CP-4 to Area 12 Base (Site 200)	45	NV-DM-445	MD	RTBF	500	-	GPP	953	20		933				
30	2000	NTS Upgrade Area 23, 4, 18kV System to 12.47kV System Lines 1-4	45	NTS-00-047	MD	RTBF	4,500	-	GPP	4,600			4,600				
31	2000	NTS Upgrade LAN Cable Installation to 23-1/80	40	NV-DM-430	MD	RTBF	900	-	GPP	1,046	104		942				
32	2009	NTS CP-40 Electrical Mechanical Replacements	35	NV-DM-HT84	MD	RTBF	2,300	-	E	2,980			2,980				
33	2010	NTS BLC-3* Tripolar	60	NTS-02-044	MD	RTBF	100	-	E	3,910				310			
34	2010	NTS Replace Old-Based PIDs - A12 North, A18, A19	50	NTS-02-123	MD	OTHER	4,500	-	GPP	4,810				4,810			
35	2010	NTS Restore Mercury Bypass	50	NTS-04-009	MD	RTBF	4,300	-	GPP	4,804				4,804			
36	2010	NTS Upgrade Area 23, 4, 18kV System to 12.47kV System Lines 5-8	45	NTS-03-046	MD	RTBF	4,500	-	GPP	4,819				4,819			
37	2010	NTS Reconstruct Mercury Hwy Sec. 1 (Bypass #1 to Begin Bypass #1)	45	NTS-03-048	MD	RTBF	3,000	-	GPP	3,132				3,132			
38	2010	NTS Reconstruct Rainier Mesa Rd (P-04 Rd to 12-01 Rd)	45	NTS-03-056	NMD	OTHER	2,905	-	E	3,109				3,109			
39	2010	NTS Replace Air Compressor System	45	NTS-03-058	MD	RTBF	4,500	-	GPP	4,687				4,687			
40	2010	NTS Replace Air Compressor System	45	NTS-03-059	MD	RTBF	3,795	-	GPP	4,139				4,139			
41	2010	NTS Replace Air Compressor System	45	NTS-03-060	MD	RTBF	3,795	-	GPP	4,139				4,139			
42	2010	NTS Replace Air Compressor System	45	NTS-03-061	MD	RTBF	3,795	-	GPP	4,139				4,139			
43	2010	NTS Replace Air Compressor System	45	NTS-03-062	MD	RTBF	3,795	-	GPP	4,139				4,139			
44	2010	NTS Replace Air Compressor System	45	NTS-03-063	MD	RTBF	3,795	-	GPP	4,139				4,139			
45	2010	NTS Replace Air Compressor System	45	NTS-03-064	MD	RTBF	3,795	-	GPP	4,139				4,139			
46	2010	NTS Replace Air Compressor System	45	NTS-03-065	MD	RTBF	3,795	-	GPP	4,139				4,139			
47	2010	NTS Replace Air Compressor System	45	NTS-03-066	MD	RTBF	3,795	-	GPP	4,139				4,139			
48	2010	NTS Replace Air Compressor System	45	NTS-03-067	MD	RTBF	3,795	-	GPP	4,139				4,139			
49	2010	NTS Replace Air Compressor System	45	NTS-03-068	MD	RTBF	3,795	-	GPP	4,139				4,139			
50	2010	NTS Replace Air Compressor System	45	NTS-03-069	MD	RTBF	3,795	-	GPP	4,139				4,139			
51	2010	NTS Replace Air Compressor System	45	NTS-03-070	MD	RTBF	3,795	-	GPP	4,139				4,139			
52	2010	NTS Replace Air Compressor System	45	NTS-03-071	MD	RTBF	3,795	-	GPP	4,139				4,139			
53	2010	NTS Replace Air Compressor System	45	NTS-03-072	MD	RTBF	3,795	-	GPP	4,139				4,139			
54	2010	NTS Replace Air Compressor System	45	NTS-03-073	MD	RTBF	3,795	-	GPP	4,139				4,139			
55	2010	NTS Replace Air Compressor System	45	NTS-03-074	MD	RTBF	3,795	-	GPP	4,139				4,139			
56	2010	NTS Replace Air Compressor System	45	NTS-03-075	MD	RTBF	3,795	-	GPP	4,139				4,139			
57	2010	NTS Replace Air Compressor System	45	NTS-03-076	MD	RTBF	3,795	-	GPP	4,139				4,139			
58	2010	NTS Replace Air Compressor System	45	NTS-03-077	MD	RTBF	3,795	-	GPP	4,139				4,139			
59	2010	NTS Replace Air Compressor System	45	NTS-03-078	MD	RTBF	3,795	-	GPP	4,139				4,139			
60	2010	NTS Replace Air Compressor System	45	NTS-03-079	MD	RTBF	3,795	-	GPP	4,139				4,139			
61	2010	NTS Replace Air Compressor System	45	NTS-03-080	MD	RTBF	3,795	-	GPP	4,139				4,139			
62	2010	NTS Replace Air Compressor System	45	NTS-03-081	MD	RTBF	3,795	-	GPP	4,139				4,139			
63	2010	NTS Replace Air Compressor System	45	NTS-03-082	MD	RTBF	3,795	-	GPP	4,139				4,139			
64	2010	NTS Replace Air Compressor System	45	NTS-03-083	MD	RTBF	3,795	-	GPP	4,139				4,139			
65	2010	NTS Replace Air Compressor System	45	NTS-03-084	MD	RTBF	3,795	-	GPP	4,139				4,139			
66	2010	NTS Replace Air Compressor System	45	NTS-03-085	MD	RTBF	3,795	-	GPP	4,139				4,139			
67	2010	NTS Replace Air Compressor System	45	NTS-03-086	MD	RTBF	3,795	-	GPP	4,139				4,139			
68	2010	NTS Replace Air Compressor System	45	NTS-03-087	MD	RTBF	3,795	-	GPP	4,139				4,139			
69	2010	NTS Replace Air Compressor System	45	NTS-03-088	MD	RTBF	3,795	-	GPP	4,139				4,139			
70	2010	NTS Replace Air Compressor System	45	NTS-03-089	MD	RTBF	3,795	-	GPP	4,139				4,139			
71	2010	NTS Replace Air Compressor System	45	NTS-03-090	MD	RTBF	3,795	-	GPP	4,139				4,139			
72	2010	NTS Replace Air Compressor System	45	NTS-03-091	MD	RTBF	3,795	-	GPP	4,139				4,139			
73	2010	NTS Replace Air Compressor System	45	NTS-03-092	MD	RTBF	3,795	-	GPP	4,139				4,139			
74	2010	NTS Replace Air Compressor System	45	NTS-03-093	MD	RTBF	3,795	-	GPP	4,139				4,139			
75	2010	NTS Replace Air Compressor System	45	NTS-03-094	MD	RTBF	3,795	-	GPP	4,139				4,139			
76	2010	NTS Replace Air Compressor System	45	NTS-03-095	MD	RTBF	3,795	-	GPP	4,139				4,139			
77	2010	NTS Replace Air Compressor System	45	NTS-03-096	MD	RTBF	3,795	-	GPP	4,139				4,139			
78	2010	NTS Replace Air Compressor System	45	NTS-03-097	MD	RTBF	3,795	-	GPP	4,139				4,139			
79	2010	NTS Replace Air Compressor System	45	NTS-03-098	MD	RTBF	3,795	-	GPP	4,139				4,139			
80	2010	NTS Replace Air Compressor System	45	NTS-03-099	MD	RTBF	3,795	-	GPP	4,139				4,139			
81	2010	NTS Replace Air Compressor System	45	NTS-03-100	MD	RTBF	3,795	-	GPP	4,139				4,139			
82	2010	NTS Replace Air Compressor System	45	NTS-03-101	MD	RTBF	3,795	-	GPP	4,139				4,139			
83	2010	NTS Replace Air Compressor System	45	NTS-03-102	MD	RTBF	3,795	-	GPP	4,139				4,139			
84	2010	NTS Replace Air Compressor System	45	NTS-03-103	MD	RTBF	3,795	-	GPP	4,139				4,139			
85	2010	NTS Replace Air Compressor System	45	NTS-03-104	MD	RTBF	3,795	-	GPP	4,139				4,139			
86	2010	NTS Replace Air Compressor System	45	NTS-03-105	MD	RTBF	3,795	-	GPP	4,139				4,139			
87	2010	NTS Replace Air Compressor System	45	NTS-03-106	MD	RTBF	3,795	-	GPP	4,139				4,139			
88	2010	NTS Replace Air Compressor System	45	NTS-03-107	MD	RTBF	3,795	-	GPP	4,139				4,139			
89	2010	NTS Replace Air Compressor System	45	NTS-03-108	MD	RTBF	3,795	-	GPP	4,139				4,139			
90	2010	NTS Replace Air Compressor System	45	NTS-03-109	MD	RTBF	3,795	-	GPP	4,139				4,139			
91	2010	NTS Replace Air Compressor System	45	NTS-03-110	MD	RTBF	3,795	-	GPP	4,139				4,139			
92	2010	NTS Replace Air Compressor System	45	NTS-03-111	MD	RTBF	3,795	-	GPP	4,139				4,139			
93	2010	NTS Replace Air Compressor System	45	NTS-03-112	MD	RTBF	3,795	-	GPP	4,139				4,139			
94	2010	NTS Replace Air Compressor System	45	NTS-03-113	MD	RTBF	3,795	-	GPP	4,139				4,139			
95	2010	NTS Replace Air Compressor System	45	NTS-03-114	MD	RTBF	3,795	-	GPP	4,139				4,139			
96	2010	NTS Replace Air Compressor System	45	NTS-03-115	MD	RTBF	3,795	-	GPP	4,139				4,139			
97	2010	NTS Replace Air Compressor System	45	NTS-03-116	MD	RTBF	3,795	-	GPP	4,139				4,139			
98	2010	NTS Replace Air Compressor System	45	NTS-03-117	MD	RTBF	3,795	-	GPP	4,139				4,139			
99	2010	NTS Replace Air Compressor System	45	NTS-03-118	MD	RTBF	3,795	-	GPP	4,139				4,139			
100	2010	NTS Replace Air Compressor System	45	NTS-03-119	MD	RTBF	3,795	-	GPP	4,139				4,139			
101	2010	NTS Replace Air Compressor System	45	NTS-03-120	MD	RTBF	3,795	-	GPP	4,139				4,139			
102	2010	NTS Replace Air Compressor System	45	NTS-03-121	MD	RTBF	3,795	-	GPP	4,139				4,139			
103	2010	NTS Replace Air Compressor System	45	NTS-03-122	MD	RTBF	3,795	-	GPP	4,139				4,139			
104	2010	NTS Replace Air Compressor System	45	NTS-03-123	MD	RTBF	3,795	-	GPP	4,139				4,139			
105	2010	NTS Replace Air Compressor System	45	NTS-03-124	MD	RTBF	3,795	-	GPP	4,139				4,139			

Attachment A-1
NNSA Facilities and Infrastructure Cost Project Spreadsheet
Facilities and Infrastructure Recapitalization Program (FIRP) for Nevada Test Site

FIRP Priority (1)	Year Identified (2)	Project Name (3)	FIRS Facility No. (4)	Project Number (5)	Deferred Maintenance Number (6a)	Mission Dependency (7)	Mission Dependency Program (6a)	FY03 Baseline Deferred Maintenance Reduction ($K) (8)	DOE Project or Construction ($K) (9)	Funding Type (10)	Total ($K) (11)	Prior Years Funding ($K) (12)	FY 2007 ($K) (13)	FY 2008 ($K) (14)	FY 2009 FYNSP ($K) (15)	FY 2010 FYNSP ($K) (16)	FY 2011 FYNSP ($K) (17)	FY 2012 FYNSP ($K) (18)	FY 2013 ($K) (19)
67	2013	BLV ME Adv Mechanical & Electrical Replacements	40	NV-DM-HLV2	NV-DM-HLV2	MD	RTBF	2,750	-	GPP	3,819								3,819
68	2013	NTS CP-1 Electrical/Mechanical Improvements	40	NV-DM-HTS3	NV-DM-HTS3	MD	RTBF	1,327	-	E	3,334								3,334
70	2013	NTS Area 6 Facility Repairs	40	NV-DM-HTS2	NV-DM-HTS2	MD	RTBF	2,200	-	E	4,900								4,900
71	2013	NTS Area 6 CP Facility Repairs	40	NV-DM-HTS3	NV-DM-HTS3	NWD	OTHER	2,500	-	E	4,900								4,900
72	2013	NTS Area 23 Miscellaneous External Repairs	36	NV-DM-HTS4	NV-DM-HTS4	MD	RTBF	3,000	-	E	4,900								4,900
73	2013	NTS Square Road 11-03/Airport Rd (Pahute Mesa Rd to Blackbeard Mesa Rd)	35	NTS-03-060	NTS-03-060	MD	RTBF	700	-	GPP	1,756								1,756
74	2013	NTS Replace Copper Cabling Lathrop Wells to Gate 510, Area 25	35	NTS-02-111	NTS-02-111	MD	RTBF	700	-	GPP	1,756								1,756
75	2013	NTS Area 23 Shelter Fifth Net	35	NV-DM-HTS5	NV-DM-HTS5	MD	RTBF	2,752	-	E	4,200								4,200
										Total FIRP $K									
										Total FIRP $K		13,283	8,231	5,112	3,119	3,222	12,617	24,871
										Total FIRP $K		485	745	3,776	3,525	3,222	12,617	24,871
										Total TEC		14,843	10,177	9,488	14,738	16,442	26,707	26,135	23,871
										Construction Project Subtotal			9,971	9,488	14,738	16,442	26,707	26,135	23,871
										Planning Funding Subtotal			1,150	1,624	3,388	3,348	4,674	4,273	4,476
										D&D Funding Subtotal			1,150	1,624	3,388	3,348	4,674	4,273	4,476
										Line Item PRO			1,300	74	78	7,300	8,000		
										TOTAL						7,300	8,000		
										TOTAL						36,046	36,451	30,943	28,606
										FYNSP			12,000	9,343	26,469	26,600	33,800	32,800	33,000

Attachment A-4
Other Facilities and Infrastructure Cost Projection Spreadsheet
For Nevada Test Site
($M/y)

Project Number (1)	Project Name (2)	Project Number (3)	Mission Dependency (4)	Mission Supportability Needs (5)	Deferred Maintenance Reduction ($)	GSF Added or Eliminated (6)	Funding Type (7)	Prior Years' Funding (8)	FY 2007 ($M)	FY 2007 (11)	FY 2008 PYMAP (13)	FY 2009 PYMAP (14)	FY 2010 PYMAP (15)	FY 2011 (16)	FY 2012 (17)	FY 2013 (18)	FY 2014 (19)	FY 2015 (20)	FY 2016 (21)	FY 2017 (22)
NTSA Facilities and Infrastructure Unfunded Projects																				
1	NTS Radiographic Equipment Warehouse 6-01-100	NTS-05-058	MD	RTBF			TBD	1,214												
2	NTS Upgrade SCADA System - Substations 1-18	NTS-05-067	MD	RTBF			TBD	4,675												
3	NTS Construct 3 Water Storage Tanks - Areas 5 and 6	NTS-05-068	MD	RTBF			TBD	4,560												
4	NTS Relocate Operations Center Consolidation (NOC)	NTS-05-035	NWD	OTHER			TBD	4,771												
5	NTS Construct Fire Training Facility	NTS-05-101	NWD	OTHER			TBD	4,000												
6	NTS LAN Cabling Upgrades at Area 25	NTS-05-070	MD	RTBF			TBD	4,504												
7	NTS Upgrade SCADA System - Substations 8-12	NTS-05-036	NWD	OTHER			TBD	1,600												
8	NTS Repair Pahute Mesa Rd (Mercury Hwy to Topopah Hwy)	NTS-05-066	NWD	OTHER	500		TBD	500												
9	NTS Restore Jackass Flats Rd (Mercury Hwy-Area 27-01)	NTS-05-060	NWD	OTHER	700		TBD	700												
10	NTS Reconstruct Pahute Mesa Rd (20-04 to Buckboard Mesa Rd)	NTS-05-063	NWD	OTHER	3,500		TBD	3,500												
11	NTS Reconstruct Pahute Mesa Rd (Road 18-03 to Pahute Mesa Rd N)	NTS-05-064	NWD	OTHER	3,000		TBD	3,000												
12	NTS Relocate Buckboard Mesa Rd (Road 18-03 to Pahute Mesa Rd N)	NTS-05-065	NWD	OTHER	265		TBD	265												
13	NTS Reroute Water Distribution System, A-25	NTS-00-014	MD	RTBF	3,000		TBD	740												
14	NTS Resurface Pahute Mesa Airstrip	NTS-98-061	MD	RTBF	1,900		TBD	1,900												
15	NTS Replace Copper Cabling RLCM to Gate 510, Area 25	NTS-05-107	MD	RTBF	700		TBD	700												
16	NTS Replace Copper Cabling from Area 12 to Pahute Airport	NTS-05-112	NWD	OTHER	2,391		TBD	2,200												
17	NTS Repair Stockade Wash Rd (Rainier Mesa Rd. - Holmes Rd.)	NTS-05-085	NWD	OTHER	388		TBD	388												
18	NTS Reconstruct Stockade Wash Rd (Holmes Rd. - Pahute Mesa Rd.)	NTS-05-086	NWD	OTHER	7,400		TBD	4,900												
19	NTS Renovate Water Storage Tank North (Area 12)	NTS-04-021	MD	RTBF	600		TBD	600												
20	NTS NAH Services at Area 6	NTS-02-018	MD	RTBF			GPP	4,550		4,550										
21	NTS LAN Switch Upgrades at Mercury	NTS-05-053	MD	RTBF			GPP	1,675		4,675										
22	NTS Relocate DAF Water Storage Tank	NTS-05-001	MD	RTBF			GPP	185		185										
23	NTS Upgrade SCADA System - Substations 1 through 4	NTS-05-125	MD	RTBF			GPP	3,500			3,500									
24	NTS LAN Cabling Upgrades at Area 6	NTS-03-051	MD	RTBF			GPP	1,250			1,200									
25	NTS Replace SCADA System - Substations 3-5	NTS-05-127	MD	RTBF			GPP	3,500				3,500								
26	NTS Backflow Prevention Devices Fire System 20-03	NTS-05-045	MD	RTBF			GPP	3,000					3,000							
27	NTS LAN Cabling Upgrades at Mercury	NLV-05-050	MD	RTBF			GPP	4,444					4,444							
28	NTS Resurface DAF Access Rd (Mercury Hwy)	NTS-05-054	MD	RTBF			GPP	880					880							
29	NTS Construct Water Storage Tanks in Mercury	NTS-05-070	MD	RTBF			GPP	2,944						2,688						
30	NTS Building 650 Modifications	NTS-94-096	MD	RTBF			GPP	160						160						
31	NTS Upgrade CP Tanks Road	NTS-02-035	MD	RTBF			GPP	4,745						4,745						
32	NTS Area 6 Potable Water Fill Stand	NTS-00-106	MD	RTBF			GPP	2,000							2,000					
33	NTS Seismic Upgrade Mercury Cafeteria	NTS-02-024	MD	RTBF			GPP	1,214							1,214					
34	NLV HAN System	NLV-05-004	MD	RTBF			GPP	4,761							4,761					
35	NTS Construct Water Distribution, Area 6	NTS-01-125	MD	RTBF			GPP	741								3,600				
36	DAF Replace Roads	NTS-02-007	MD	RTBF			GPP	950									741			
37	DAF Electrical Switchgear Rebuild	NTS-05-008	MD	RTBF			GPP	570									950			
38	DAF Add Control Room, Bldg. 600	NTS-05-008	MD	RTBF			GPP	1,650									570			
39	NTS Warehouse 1 Cabinet	NTS-96-060	MD	RTBF			GPP	160									1,650			
40	NTS ME Area 6 Facility Repairs	NV-03A-NTS3	MD	RTBF	675		E	1,264									160			
41	NTS ME Area 6 Facility Repairs	NV-03A-NTS3	MD	RTBF	1,227		E	2,564									1,200			
42	NTS CP-1 Electrical/Mechanical Repairs	NV-03A-NTS7	MD	RTBF	892		E	1,394									2,564			
43	NTS Area 23/27 Facility Repairs	NV-03A-NTS7	MD	RTBF	1,275		E	4,688									1,394			
44	NLV A-01 Mechanical & Electrical Replacements	NTS-05-005	MD	RTBF			GPP	1,475									4,688			
45	Area 5 Nakedoor-Critical Projects	N/A					TBD	2,800									1,475			
46	NTS Upgrade Onsite Landscaping	NTS-98-006	NWD	NWR			TBD										2,800			
47	RSL Upgrade Omega Landscaping	RSL-98-006	NWD	NWR			TBD	450												
48	RSL Covered Parking Structure (Andrews)	RSL-03-005	MD	NWR			GPP	1,800									400			
49	RSL Install Waterline	RSL-03-005	MD	NWR				2,060									2,060			
50	RSL ME Interior Repairs	NV-04-NTS1	MD	NWR	1,545		E													
51	RSL Replace UPS & Converter, Bldg. 35-2211	RSL-04-001	MD	NWR			GPP	665	850											
52	RSL Classified Four Water Tanks	RSL-03-003	MD	NWR	314		GPP	310	310											
53	RSL Slurry Seal Roads and Parking Lot Repairs	RSL-99-008	NWD	NWR			GPP	150	150											
54	RSL Fire Alarm System Renovation 7 Buildings	RSL-04-004	MD	NWR			GPP	1,000	1,000											
55	RSL Freon Monitor	RSL-05-002	MD	NWR			GPP	600	600											
56	RSL Replace Fuel Pumps	RSL-04-005	MD	NWR			GPP	100		100										
57	RSL Foam Suppression Tank Relocation (Merged Fire System Tanks)	RSL-05-001	MD	NWR			GPP	750			750									
58	RSL Hazardous Hangar Floor	RSL-04-002	MD	NWR			E	175			175									
59	RSL Facilities Improvements	RSL-00-008	MD	NWR			GPP	850			850									
60	RSL Technical Support Building Expansion	RSL-00-006	NWD	NWR			GPP	3,900				3,900								
61	RSL Operations Support Facility	RSL-02-001	MD	NWR			GPP	2,500					2,500							
62	RSL Upgrade Electrical Distribution System	RSL-02-004	MD	NWR			GPP	600						500						
63	RSL Main Building Second Story Addition	RSL-03-003	NWD	NWR			GPP	4,000							4,000					
64	RSL Construct Operations Support Annex	RSL-03-002	MD	NWR			GPP	2,500								2,500				
NTSA Facilities and Infrastructure Work for Others (14)																				
1	Yucca Lake Power System Feeder	000-XX-XXX	N/A	DoD			GPP	1,752	1,752											
2	Yucca Lake Airfield Lighting	000-XX-XXX	N/A	DoD			GPP	1,864	1,864											
3	Chip Seal Access Road	000-XX-XXX	N/A	DoD			GPP	548		548										
4	Muddy Runway Drainage	000-XX-XXX	N/A	DoD			GPP	1,348		1,348										
5	Install Fiber Optic Cable to CP-40	000-XX-XXX	N/A	DoD			GPP	188		188										

Attachment A-8(a) - FY 2007 – FY 2009
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 Dependency (4)	Mission Dependency Program (5)	Estimated Total Project Cost (6)	Planned Funding Source				DST Related? Y or N
						Line Item A-2	RTBF A-3	PBP A-4	Other A-5	
	List FY 07 Projects									
1	DAF Roof Hardening	TBD	MC	S&S	818				X	Y
2	WSI CP-50 Renovation for SRT	TBD	MD	S&S	400				X	N
3	WSI Motomesh Wireless Data Network (DAF)	TBD	MD	S&S	1,411				X	N
4	WSI Live Fire Shoot Tower	NTS-03-028	MC	S&S	500				X	Y
TOTAL					3,129					

Attachment A-6(b) - FY08 and FY09 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 Dependency (4)	Mission Dependency Program (4a)	Total ($)	Proposed for either FY08 or FY09 funding	D&T Related? Y or N
1	60	WSI Construct Vehicle Barrier System (DAF)	NTS-05-039	MC	S&S	4,900	FY08	Y
2	60	WSI DAF Aircraft Denial System	NTS-05-042	MC	S&S	4,000	FY08	Y
3	60	OUO Exemption 2	NTS-07-016	MD	S&S	500	FY08	Y
4	60	WSI New DAF Access Security Station	NTS-05-027	MD	S&S	2,900	FY08	Y
5	50	OUO Exemption 2	NTS-07-017	MD	S&S	1,500	FY08	Y
6	50	WSI Establish Live Fire Obstacle Course	NTS-03-081	MD	S&S	500	FY08	N
7	60	WSI DAF Tower Pre-detonation Screen	NTS-07-042	MC	S&S	900	FY09	Y
8	60	WSI Replace DAF PIDAS Sensor System	NTS-07-002	MC	S&S	1,500	FY09	N
9	50	WSI Establish Guard Station on 200 Hill	NTS-07-018	MD	S&S	637	FY09	N
10	40	WSI Renovate CP-41	NTS-07-019	MD	S&S	400	FY09	TBD
11	40	WSI Connect Power to Live Fire Shoothouse and Shooting Tower	NTS-07-020	NMD	S&S	250	FY09	N
12	40	WSI Relocate DAF Secondary Alarm Station to CP43	NTS-07-021	NMD	S&S	300	FY09	N
13	40	WSI Upgrade Guard Station 800	NTS-07-022	MC	S&S	125	FY09	N
TOTAL						18,312		

Attachment B
Site's Asset Utilization Index

(FIMS 093) Page 2 of 3
1/31/2007

U. S. Department of Energy
Facilities Information Management System
Asset Utilization Index by FRPC Categories

Program Office: NNSA
Site: Las Vegas

Site Wide AUI: 69.01% **

Measures	AUI	FRPC Guidelines	OECM Guidelines	Operating Gross Sqft*	Operating No of Bldgs*
Office	54.65%	70 - 95%	85%	368,373	8
Laboratory	79.73%	60 - 85%	90%	265,941	4
Warehouse	87.46%	50 - 85%	89%	46,495	5
All Other Categories	85.82%	N/A	N/A	64,776	15
			Las Vegas Site Totals*	745,585	32

* These numbers do not reflect the total gross square footage and number of buildings. They represent operating buildings only.

** Site Wide AUI includes all DOE Owned Building assets

Attachment B
Site's Asset Utilization Index

(FIMS 093)

U. S. Department of Energy
Facilities Information Management System
Asset Utilization Index by FRPC Categories

Page 1 of 3
1/31/2007

Program Office: NNSA
Site: Andrews Afb

Site Wide AUI: 100.00% **

Measures	AUI	FRPC Guidelines	OECM Guidelines	Operating Gross Sqft*	Operating No of Bldgs*
Office	100.00%	70 - 95%	95%	23,600	1
Andrews Afb Site Totals*				23,600	1

Attachment B
Site's Asset Utilization Index

(FIMS 093)

U. S. Department of Energy
Facilities Information Management System
Asset Utilization Index by FRPC Categories

Page 3 of 3
1/31/2007

Program Office: NNSA
Site: Nevada Test Site

Site Wide AUI: 94.29% **

Measures	AUI	FRPC Guidelines	OECM Guidelines	Operating Gross Sqft*	Operating No of Bldgs*
Office	91.27%	70 - 95%	95%	360,711	59
Laboratory	87.37%	60 - 85%	90%	92,912	24
Warehouse	97.35%	60 - 85%	89%	354,529	93
Housing	98.67%	85 - 100%	99%	202,589	39
Medical	100.00%	70 - 95%	90%	30,243	1
All Other Categories	93.66%	N/A	N/A	850,185	167
			Nevada Test Site Site Totals*	1,891,169	383
			NNSA Program Totals*	2,660,354	416

* These numbers do not reflect the total gross square footage and number of buildings. They represent operating buildings only.

** Site Wide AUI includes all DOE Owned Building assets

Attachment E-1
Facilities Disposition Plan

Funding Source (3)	Facility Identification Number (FIMS) (2)	Facility Name (1)	Mission Dependency Program (4)	Priority Score (5)	Priority Rank (6)	Gross Square Footage (SF) (7)	FIMS Excess Indicator (8)	Surveillance Year (9)	Planned Disposition Year (10)	TSCs to Disposition (SF000s) (11)	FY2003 (baseline) Deferred Maintenance Reduction (for FRP Demolition Only) (1000s) (12)	Yearly S&M Costs (1000s) (13)	Candidate for Transfer (14)	Contaminated (Yes or No) (15)	Notes (16)
FY 2002 Facilities Disposition Sub-total						960		2002	2002	-	-	-		NO	
FRP	01-201864	DRILLING SUPPORT SHOP				63		2002	2002					NO	
FRP	01-354	BUILDING R&D				4,000		2002	2002					NO	
FRP	01-401	COAL TAR FACILITY				8,000		2002	2002					NO	
FRP	01-500	STORAGE AREA				1,600		2002	2002					NO	
FRP	02-202568	FIELD METROLOGY				13,419		2002	2002					NO	
FRP	02-2C-22	ELECTRICAL ANNEX				800		2002	2002					NO	
FRP	03-034	WX-4 TEST SUPPORT				2,650		2002	2002					NO	
FRP	03-056	STEM MATT STORAGE				1,600		2002	2002					NO	
FRP	03-201897	AREA 3 MUD PLANT				2,002		2002	2002					NO	
FRP	03-3C-21	REFRIGERATION REPAIR SHOP				2,200		2002	2002					NO	
FRP	03-3C-27	CORE BUILDING				1,152		2002	2002					NO	
FRP	03-3C-42	CARPENTER SHOP				540		2002	2002					NO	
FRP	03-3C-44	DISPATCH OFFICE				240		2002	2002					NO	
FRP	03-3C-48	FIRE PUMP HOUSE				2,000		2002	2002					NO	
FRP	03-3C-55	DOWNHOLE HARDWARE STORAGE				2,449		2002	2002					NO	
FRP	03-3C-62	ELECTRICIANS SHOP				224		2002	2002					NO	
FRP	05-370	BUILDING R&D				1,200		2002	2002					NO	
FRP	05-94	SANDS TEST RANGE BUILDING				900		2002	2002					NO	
FRP	05-96	RADSAFE STORAGE				519		2002	2002					NO	
FRP	05-993415	BOOSTER STATION 1 5-C				519		2002	2002					NO	
FRP	05-993416	BOOSTER STATION 2 5-C				519		2002	2002					NO	
FRP	05-993417	BOOSTER STATION 3 5-C				519		2002	2002					NO	
FRP	05-993418	BOOSTER STATION 4 5-C				519		2002	2002					NO	
FRP	06-202534	WAREMEN'S SHOP				850		2002	2002					NO	
FRP	06-348	CEMENTING STORAGE				3,971		2002	2002					NO	
FRP	06-408480	PAINTER STORAGE				132		2002	2002					NO	
FRP	06-910	STEAM CLEANING FACILITY				288		2002	2002					NO	
FRP	06-910291	STORAGE				480		2002	2002					NO	
FRP	06-CP-029	WSNO ELECTRONICS STORAGE				520		2002	2002					NO	
FRP	06-CP-14	COMPUTER RECORDING				5,198		2002	2002					NO	
FRP	06-CP-150A	STORAGE BUILDING				96		2002	2002					NO	
FRP	06-CP-18	GUARD STATION				42		2002	2002					NO	
FRP	06-CP-55	INSTRUMENT STATION				192		2002	2002					NO	
FRP	06-CP-8	PUMP HOUSE				630		2002	2002					NO	
FRP	06-CP-804	CAP & FUSE STORAGE BUNKER				15		2002	2002					NO	
FRP	06-CP-99	CONTROL POINT 99				1,000		2002	2002					NO	
FRP	06-T-616	LABORERS SHOP & OFFICE				960		2002	2002					NO	
FRP	06-T-617	TEAMSTERS FACILITY				1,390		2002	2002					NO	
FRP	12-02	MINERS CHANGE HOUSE				1,786		2002	2002					NO	
FRP	12-13	CRAFT SHOP				880		2002	2002					NO	
FRP	12-15	HEALTH CLUB				1,820		2002	2002					NO	
FRP	12-16	MOTOR POOL SERVICE				21,188		2002	2002					NO	
FRP	12-201820	TOOL & MATERIAL STORAGE				334		2002	2002					NO	
FRP	12-201943	CONSTRUCTION STORAGE				144		2002	2002					NO	
FRP	12-202108	STORAGE BUILDING				1,000		2002	2002					NO	
FRP	12-202469	CABLE ROLL-UP SHOP				336		2002	2002					NO	
FRP	12-202623	ELECTRICAL STORAGE				852		2002	2002					NO	
FRP	12-2A	LABORER'S OFFICE				144		2002	2002					NO	
FRP	12-3	THEATER				4,400		2002	2002					NO	

Attachment E-1
Facilities Disposition Plan

Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Mission Dependency Program (4)	Priority Score (5)	Priority Rank (6)	Gross Square Footage (SF) (7)	FIMS Excess Indicator (8)	Excess Year (9)	Planned Disposition Year (10)	TRD to Disposition ($000s) (11)	FY2003 (baseline) Deferred Maintenance Reduction (for FIRP Demolition Only) ($000s) (12)	Yearly S&M Costs ($000s) (13)	Candidate for Transfer (14)	Contaminated (Y/N, Rn)	Notes (15)
FIRP	12-300	DIAGNOSTIC B-TUNNEL			N/A	2,520		2002	2002		-	-	-	NO	
FIRP	12-355	SIGNAL TIMER STATION			N/A	168		2002	2002		-	-	-	NO	
FIRP	12-44	STORAGE			N/A	672		2002	2002		-	-	-	NO	
FIRP	12-8	SHEET MTL / CARPENTERS			N/A	8,440		2002	2002		-	-	-	NO	
FIRP	12-9	LABOR /OPERATORS OFFICE			N/A	600		2002	2002		-	-	-	NO	
FIRP	12-998581	POWER/COMM LINE SHOP			N/A	4,002		2002	2002		-	-	-	NO	
FIRP	15-202621	MECHANIC SHOP			N/A	456		2002	2002		-	-	-	NO	
FIRP	22-1113	ARMY WELL SOFTENER STATION			N/A	525		2002	2002		-	-	-	NO	
FIRP	23-101	PROPERTY MANAGEMENT			N/A	6,861		2002	2002		-	-	-	NO	
FIRP	23-102	SAFETY & HEALTH			N/A	6,330		2002	2002		-	-	-	NO	
FIRP	23-110	CONTACT ADMIN ENG			N/A	6,470		2002	2002		-	-	-	NO	
FIRP	23-501	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-502	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-503	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-504	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-505	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-506	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-507	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-508	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-513	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-514	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-515	DORMITORY			N/A	3,300		2002	2002		-	-	-	NO	
FIRP	23-516	SWIMMING POOL BLDG.			N/A	1,132		2002	2002		-	-	-	NO	
FIRP	23-W12	WAREHOUSE			N/A	4,000		2002	2002		-	-	-	NO	
FIRP	25-3107	SERVICE STATION			N/A	180		2002	2002		-	-	-	NO	
FIRP	25-3109	DISTRIBUTION BLDG. TCA			N/A	760		2002	2002		-	-	-	NO	
FIRP	25-3115	COMPRESSOR BLDG.			N/A	420		2002	2002		-	-	-	NO	
FIRP	25-3115A	CONTROL BLDG.			N/A	192		2002	2002		-	-	-	NO	
FIRP	25-3116	TEST CELL A PUMP HOUSE			N/A	912		2002	2002		-	-	-	NO	
FIRP	25-3117	PRESSURE STATION			N/A	400		2002	2002		-	-	-	NO	
FIRP	25-3125	USGS SHOP R-MAD COMPOUND			N/A	1,000		2002	2002		-	-	-	NO	
FIRP	25-3140	R-MAD POINT TEST & STR			N/A	3,346		2002	2002		-	-	-	NO	
FIRP	25-3230A	RESTROOM			N/A	270		2002	2002		-	-	-	NO	
FIRP	25-408536	J-12 MIDWAY BOOSTER			N/A	192		2002	2002		-	-	-	NO	
FIRP	25-4839	POWER LINEMEN SHOP			N/A	665		2002	2002		-	-	-	NO	
FY 2002 Facility Disposition Subtotal						116,704					-	-			
FY 2003 Facilities															
FIRP	06-610853	PAINT STORAGE			N/A	800		2003	2003		-	-	-	NO	
FIRP	06-CP-2	RADSAFE			N/A	10,927		2003	2003		-	-	-	NO	
FIRP	06-202683	TOOL STORAGE, BIGHOLE			N/A	1,344		2003	2003		-	-	-	NO	
FIRP	06-2203A	DYNA-DRILL REPAIR PART8			N/A	1,107		2003	2003		-	-	-	NO	
FIRP	06-606	DYNA-DRILL REPAIR SHOP			N/A	1,092		2003	2003		-	-	-	NO	
FIRP	06-CP-400	CAMERA STATION			N/A	1,800		2003	2003		-	-	-	NO	
FIRP	06-CP-90	CONTROL POINT 90			N/A	5,494		2003	2003		-	-	-	NO	
FIRP	12-10	DRY STORAGE (C)			N/A	4,800		2003	2003		-	-	Yes	NO	
FIRP	12-11	AMBULANCE GARAGE			N/A	810		2003	2003		-	-	Yes	NO	
FIRP	12-12	MEDICAL AID STATION			N/A	875		2003	2003		-	-	Yes	NO	
FIRP	12-18	DRY STORAGE (C)			N/A	1,000		2003	2003		-	-	Yes	NO	
FIRP	12-201802	FITTER SHOP (T)			N/A	4,840		2003	2003		-	-	-	NO	
FIRP	12-201804	MECHANIC SHOP (E)			N/A	1,220		2003	2003		-	-	-	NO	

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Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Mission Dependency Program (4)	Priority Score (5)	Priority Rank (6)	Gross Square Footage (gsf) (7)	FIMS Excess Indicator (8)	Excess Year (9)	Planned Disposition Year (10)	TEC to Disposition (FY04$) (11)	FY2003 (baseline) Deferred Maintenance Reduction (for FIDP Demolition Only) ($000s) (12)	Yearly S&M Costs ($000s) (13)	Candidate for Transfer (14)	Contaminated (Yes or No) (15)	Notes (16)
FIRP	12-201805	MULTIPURPOSE (E)			N/A	4,000		2003	2003	-	-	-		NO	
FIRP	12-201885	SPUCE HOUSE			N/A	1,600		2003	2003	-	-	-		NO	
FIRP	12-201911	WALKER SHACK (T)			N/A	588		2003	2003	-	-	-		NO	
FIRP	12-201912	STORAGE (E)			N/A	432		2003	2003	-	-	-		NO	
FIRP	12-201940	STORAGE			N/A	576		2003	2003	-	-	-		NO	
FIRP	12-202027	STORAGE (C)			N/A	500		2003	2003	-	-	-	Yes	NO	
FIRP	12-202028	STORAGE (C)			N/A	500		2003	2003	-	-	-	Yes	NO	
FIRP	12-202113	WALKER SHACK (N)			N/A	1,011		2003	2003	-	-	-		NO	
FIRP	12-202115	N-TUNNEL OFFICE (N)			N/A	2,070		2003	2003	-	-	-		NO	
FIRP	12-202138	MONITOR BUILDING (T)			N/A	222		2003	2003	-	-	-		NO	
FIRP	12-21	TSC-2 FACILITY (C)			N/A	3,000		2003	2003	-	-	-		NO	
FIRP	12-22	TSC-1 FACILITY (C)			N/A	3,000		2003	2003	-	-	-		NO	
FIRP	12-25	TSC 3 TEST COMPOUND (C)			N/A	3,000		2003	2003	-	-	-		NO	
FIRP	12-29	DRY STORAGE/CABLE TESTING			N/A	1,260		2003	2003	-	-	-	Yes	NO	
FIRP	12-301	CONCRETE BUNKER (E)			N/A	2,000		2003	2003	-	-	-		NO	
FIRP	12-354	E-TUNNEL SUPP BLDG (E)			N/A	144		2003	2003	-	-	-		NO	
FIRP	12-42	RACK STORAGE			N/A	2,000		2003	2003	-	-	-	Yes	NO	
FIRP	12-43	MINERS CHANGE HOUSE (C)			N/A	1,520		2003	2003	-	-	-	Yes	NO	
FIRP	12-855	PIPE FITTERS SHOP (N)			N/A	2,520		2003	2003	-	-	-		NO	
FIRP	12-879	PORTAL RECORD BLDG (N)			N/A	1,200		2003	2003	-	-	-		NO	
FIRP	12-885	MINER STORAGE (N)			N/A	1,260		2003	2003	-	-	-		NO	
FIRP	12-887	MECHANICS SHOP (T)			N/A	1,200		2003	2003	-	-	-		NO	
FIRP	12-891	N-TUNNEL OFFICE (N)			N/A	2,501		2003	2003	-	-	-		NO	
FIRP	12-892	STORAGE FACILITY (N)			N/A	1,260		2003	2003	-	-	-		NO	
FIRP	12-893	RCMC (N)			N/A	200		2003	2003	-	-	-		NO	
FIRP	12-897	TEST EQUIPMENT BLDG. (T)			N/A	1,200		2003	2003	-	-	-		NO	
FIRP	12-898	T- TUNNEL OFFICE (T)			N/A	1,248		2003	2003	-	-	-		NO	
FIRP	12-899	RUPP'S REPAIR FACILITY (T)			N/A	1,220		2003	2003	-	-	-		NO	
FIRP	12-900	RUPP'S STORAGE (N)			N/A	1,260		2003	2003	-	-	-		NO	
FIRP	12-902-T	SANDIA ASSEMBLY BLDG. (T)			N/A	1,320		2003	2003	-	-	-		NO	
FIRP	12-903	DRY STORAGE (T)			N/A	1,220		2003	2003	-	-	-		NO	
FIRP	12-905-N	SANDIA ASSEMBLY BLDG. (N)			N/A	1,320		2003	2003	-	-	-		NO	
FIRP	12-906	MECHANICS SHOP/STORAGE (N)			N/A	1,260		2003	2003	-	-	-		NO	
FIRP	12-907	DRY STORAGE (N)			N/A	2,050		2003	2003	-	-	-		NO	
FIRP	12-917	LOCKHEED MISSILE WHSE (C)			N/A	2,000		2003	2003	-	-	-	Yes	NO	
FIRP	12-921	TUNNEL SUPPORT (N)			N/A	1,200		2003	2003	-	-	-		NO	
FIRP	12-923	RECORDING STATION			N/A	1,254		2003	2003	-	-	-	Yes	NO	
FIRP	12-932	PORTAL ACCESS BLDG. (N)			N/A	2,100		2003	2003	-	-	-		NO	
FIRP	12-988588	MULTIPURPOSE ASSEMBLY			N/A	6,080		2003	2003	-	-	-		NO	
FIRP	23-100	SHERIFF OFFICE			N/A	1,368		2003	2003	-	-	-		NO	
FIRP	23-115	STEAM PLANT			N/A	4,197		2003	2003	-	-	-		NO	
FIRP	23-125	MERCURY AUDITORIUM			N/A	4,052		2003	2003	-	-	-		NO	
FIRP	23-760A	GREENHOUSE			N/A	1,228		2003	2003	-	-	-	Yes	NO	
FY 2003 Facility Disposition Sub-total										-	-	-			

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Funding Source (1)	Facility Identification Number (FIMS) (2)	Facility Name (3)	Mission Dependency Program (4)	Priority Score (5)	Priority Rank (6)	Gross Square Footage (GSF) (7)	FIMS Excess Indicator (8)	Excess Year (9)	Planned Disposition Year (10)	TEC to Disposition ($000s) (11)	FY2003 (baseline) Deferred Maintenance Reduction (for FIRP Demolition Only) ($000s) (12)	Yearly S&M Costs ($000s) (13)	Candidate for Transfer (14)	Contaminated (Yes or No) (15)	Notes (16)
FY 2004 Facilities															
FIRP	01-074471	SHAKER PLANT TOWER			N/A	288		2004	2004	-	-	-		NO	
FIRP	01-408159	SAND BAG HSE SHAKER PLNT			N/A	500		2004	2004	-	-	-		NO	
FIRP	02-201909	VERTICAL PULL TEST			N/A	1,600		2004	2004	-	-	-		NO	
FIRP	06-607	DECONTAMINATION LAUNDRY			N/A	2,504		2004	2004	-	-	-		NO	
FIRP	06-CP-315	CONTROL POINT 315			N/A	780		2004	2004	-	-	-		NO	
FIRP	11-1A	TWEEZER R&D			N/A	800		2004	2004	-	-	-		NO	
FIRP	11-2	TWEEZER EQUIP BLDG			N/A	1,488		2004	2004	-	-	-		NO	
FIRP	11-4	TOOL STORAGE			N/A	540		2004	2004	-	-	-		NO	
FIRP	23-106	DORMITORY (FY 2003 Funds)			N/A	3,693		2004	2004	-	-	-		NO	
FIRP	23-107	DORMITORY (FY 2003 Funds)			N/A	3,693		2004	2004	-	-	-		NO	
FIRP	23-300A	WALK-IN FREEZER			N/A	600		2004	2004	-	-	-		NO	
FIRP	23-A	DORMITORY (FY 2003 Funds)			N/A	3,428		2004	2004	-	-	-		NO	
FIRP	23-Q-21	ROCK SHOP			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-22	GEOLOGY SHOP			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-23	STORAGE QUONSET			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-26	RECREATION			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-27	Q-27 STAGING AREA			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-28	QUONSET HUT			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-29	ADMINISTRATION			N/A	960		2004	2004	-	-	-		NO	
FIRP	23-Q-30	ADMINISTRATION			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-31	QUONSET 31 (FY 2003 Funds)			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-32	QUONSET 32 (FY 2003 Funds)			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-33	HEALTH CLUB (FY 2003 Funds)			N/A	1,927		2004	2004	-	-	-		NO	
FIRP	23-Q-34	LAB			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-35	CHRISTIAN FELLOWSHIP			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-Q-36	STORAGE (FY 2003 Funds)			N/A	940		2004	2004	-	-	-		NO	
FIRP	23-S	DORMITORY (FY 2003 Funds)			N/A	3,300		2004	2004	-	-	-		NO	
FIRP	23-T	DORMITORY (FY 2003 Funds)			N/A	3,300		2004	2004	-	-	-		NO	
FIRP	23-U	DORMITORY (FY 2003 Funds)			N/A	3,300		2004	2004	-	-	-		NO	
FIRP	24-B-01	ADMINISTRATION			N/A	64,085		2004	2004	-	-	-		NO	
FIRP	24-B-02	EXECUTIVE			N/A	14,288		2004	2004	-	-	-		NO	
FIRP	25-3108	WAREHOUSE			N/A	2,038		2004	2004	-	-	-		NO	
FIRP	25-3133	MOTOR DRIVE BLDG			N/A	90		2004	2004	-	-	-		NO	
FIRP	25-3152	RAD-SAFE FACILITY			N/A	2,000		2004	2004	-	-	-		NO	
FIRP	25-4001	MINERS CHANGE HOUSE			N/A	2,040		2004	2004	-	-	-		NO	
FIRP	25-408541	CONTROL HOUSE J-11			N/A	286		2004	2004	-	-	-		NO	
FIRP	25-4224	STORAGE FACILITY			N/A	432		2004	2004	-	-	-		NO	
FIRP	25-4224A	PAINT SHOP			N/A	630		2004	2004	-	-	-		NO	
FIRP	25-4517	ECO SYSTEM ENVIRO STR			N/A	1,344		2004	2004	-	-	-		NO	
FIRP	25-202106	STACK MONITORING SYS			N/A	120		2004	2004	-	-	-		NO	
FIRP	25-202107	STACK MONITORING SYS			N/A	120		2004	2004	-	-	-		NO	
FIRP	25-3102	POWER HOUSE			N/A	1,428		2004	2004	-	-	-		NO	
FIRP	25-3119	ETS-1 MACHINE SHOP			N/A	3,200		2004	2004	-	-	-		NO	
FIRP	25-3205	AIR INTAKE BLDG.			N/A	612		2004	2004	-	-	-		NO	
FIRP	25-3214	BLDG. CONC. R &D 13X17			N/A	272		2004	2004	-	-	-		NO	
FIRP	25-408539	J-13 HI-LINE BOOSTER			N/A	441		2004	2004	-	-	-		NO	
FIRP	25-408560	CONTROL HOUSE J-11			N/A	210		2004	2004	-	-	-		NO	
FIRP	26-2208	RB/FF SUPPORT			N/A	120		2004	2004	-	-	-		NO	
FIRP	27-5120	RADIOGRAPHIC FACILITY			N/A	1,560		2004	2004	-	-	-		NO	

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FIRP	27-5130	A-27 COMMUNICATIONS SHOP			N/A	1,920		2004	2004	-	-	-		NO	
FIRP	27-5140	STORAGE/OFFICE			N/A	2,448		2004	2004	-	-	-		NO	
FIRP	27-5170	MAINT STORAGE FACILITY			N/A	1,008		2004	2004	-	-	-		NO	
FIRP	27-5210	AREA 27 FEEDING FACILITY			N/A	2,387		2004	2004	-	-	-		NO	
FIRP	27-5322	MECHANICAL BUILDING			N/A	36		2004	2004	-	-	-		NO	
FIRP	27-910752	LABORERS SHOP			N/A	192		2004	2004	-	-	-		NO	
FIRP	27-910753	CARPENTER SHOP			N/A	450		2004	2004	-	-	-		NO	
FIRP	27-T00027	ELECTRIC SHOP			N/A	240		2004	2004	-	-	-		NO	
FY 2004 Facility Disposition Sub-total						147,977				-	-	-			
FY 2005 Facilities															
FIRP	06-350	CEMENT STORAGE BUILDING			N/A	4,950		2005	2005	-	349	-		NO	
FIRP	06-CP-311	MONASTERY			N/A	5,973		2005	2005	-	316	-		NO	
FIRP	12-23	TUNNEL SUPPORT BUILDING			N/A	4,800		2005	2005	-	199	-		NO	
FIRP	12-26	SERVICE STATION			N/A	48		2005	2005	-	0	-		NO	
FIRP	12-27	ADMINISTRATION BUILDING			N/A	4,800		2005	2005	-	12	-		NO	
FIRP	12-998830	ICE HOUSE			N/A	325		2005	2005	-	34	-		NO	
FIRP	23-790	CETO/BECAMP LAB			N/A	8,135		2005	2005	-	364	-		NO	
FIRP	25-3110A	R-MAD FACILITY			N/A	20,000		2005	2005	-	-	-		NO	
FIRP	25-3130	SERVICE BUILDING			N/A	1,044		2005	2005	-	-	-		NO	
FIRP	25-3229	TC-C OFFICE BUILDING			N/A	5,484		2005	2005	-	-	-		NO	
FIRP	25-408282	CAMERA STATION			N/A	320		2005	2005	-	-	-		NO	
FIRP	25-4215	HYD. RESEARCH			N/A	16,779		2005	2005	-	498	-		NO	
FIRP	25-4226	METAL BUILDING			N/A	1,520		2005	2005	-	-	-		NO	
FIRP	25-4226A	TOOL STORAGE			N/A	960		2005	2005	-	-	-		NO	
FIRP	25-4522	ENVIRO SUPPORT FACILITY LMF			N/A	2,600		2005	2005	-	186	-		NO	
FY 2005 Facility Disposition Sub-total						77,748				-	1,960				
FY 2006 Facilities															
FIRP	06-352	SUPPLY WAREHOUSE			N/A	1,108	DOE	2007	2006	50	154	-		NO	
FIRP	23-517A	GARBAGE ROOM			N/A	64	DOE	2006	2006	50	0	-		NO	
FIRP	23-W1	WAREHOUSE			N/A	3,881	DOE	2007	2006	95	99	-		NO	
FIRP	23-W2	WAREHOUSE			N/A	4,218	DOE	2007	2006	103	147	-		NO	
FIRP	23-W3	WAREHOUSE			N/A	3,889	DOE	2007	2006	95	90	-		NO	
FIRP	23-W3A	WAREHOUSE			N/A	4,975	DOE	2006	2006	122	100	-		NO	
FIRP	23-W4	WAREHOUSE			N/A	3,940	DOE	2006	2006	97	2	-		NO	
FIRP	23-W4A	WAREHOUSE			N/A	4,975	DOE	2007	2006	122	183	-		NO	
FIRP	23-W5	WAREHOUSE			N/A	3,880	DOE	2007	2006	95	167	-		NO	
FIRP	23-W5A	WAREHOUSE			N/A	4,975	DOE	2007	2006	122	130	-		NO	
FIRP	23-W8	WAREHOUSE			N/A	3,880	DOE	2007	2006	95	116	-		NO	
FIRP	26-2101	PG FREE CLINIC			N/A	8,080	DOE	2005	2007	150	9	-		NO	
FIRP	27-5430	SUPER KUKLA CONT.			N/A	2,080	DOE	2004	2007	50	26	-		NO	
FY 2006 Facility Disposition Sub-total						47,945				1,256	1,223	-			
FY 2007 Facilities															
FIRP	26-992041	HOT & CRITICAL		60	1	3,700	DOE	2005	2007	86	1	-		NO	
FIRP	03-3C-02	POST SHOT SHOP		60	2	1,600	DOE	2005	2007	28	163	-		NO	
FY 2007 Facility Disposition Sub-total						5,300				94	164	-			

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FY 2008 Facilities															
FIRP	25-4314	YMP CONTRUCTION MANAGEMENT	Other	50	3	2,240	NONE	2008	2008	22	102	-		NO	
FIRP	27-5410	SUPER KUKLA MECHICAL BUILDING	Other	50	4	970	NONE	2008	2008	1	1	-		NO	
FY 2008 Facility Disposition Sub-total						3,210				23	103	-			
FY 2010 Facilities															
FIRP	01-300	UNDERGROUND INSTRUMENT HOUSE	RTBF	TBD	5	1,920	TBD	TBD	2010	207	211			YES	
FIRP	02-300	BUNKER	RTBF	TBD	6	1,920	TBD	TBD	2010	207	78			YES	
FIRP	06-CP-20	MONITORING/PLAYBACK	RTBF	TBD	7	1,199	TBD	TBD	2010	29	48			YES	
FIRP	06-CP-50	TECHNICAL SERVICES BUILDING	RTBF	TBD	8	9,368	TBD	TBD	2010	212	375			YES	
FIRP	06-CP-70	FIRE STATION NO. 1	RTBF	55	9	5,022	NONE	2009	2010	TBD	4,301			NO	
FIRP	07-300	BUNKER	RTBF	TBD	10	1,250	TBD	TBD	2010	135	138			YES	
FIRP	09-300	UNDERGROUND DETECTION	RTBF	TBD	11	990	TBD	TBD	2010	107	109			YES	
FIRP	12-025014	TEAMSTERS OFFICE	RTBF	TBD	12	TBD	TBD	TBD	2010	TBD	12			YES	
FIRP	15-202510	WINCH AND CONTROL ROOM	RTBF	TBD	13	432	TBD	TBD	2010	TBD	0			YES	
FIRP	15-202538	HOIST HOUSE	RTBF	TBD	14	2,440	TBD	TBD	2010	TBD	0			YES	
FIRP	15-910841	WALKER SHACK	RTBF	TBD	15	96	TBD	TBD	2010	TBD	10			YES	
FIRP	25-3231	PUMP SHOP	RTBF	TBD	16	816	TBD	TBD	2010	TBD	TBD			YES	
FIRP	25-3902	SECURITY GUARD POST	S&S	TBD	17	80	TBD	TBD	2010	TBD	9			YES	
FIRP	26-185129	AREA 26 EMERGENCY OPERATIONS CENTER	RTBF	TBD	18	TBD	TBD	TBD	2010	TBD	31			YES	
FY 2010 Facility Disposition Sub-total						25,533				897	5,321	-			
					Total	625,279				2,271	5,773	-			

Note:
Projects that have a "0" in the FY 2003 Deferred Maintenance column represent a project less than 500K.

Attachment E-2
New Construction Footprint Added

Funding Source (1)	Project Number (2)	Facility Name (3)	Mission Dependency Program (4)	Funding Type (LI, GPP, IGPP) (5)	Project Area (GSF) (6)	Year Occupied (7)	Notes (8)
FIRP	F&I-03-422	NTS Buildings for Fire Station 1	RTBF	GPP	3,520	2004	Temporary Facilities
FIRP	F&I-03-422	NTS Buildings for Fire Station 2	RTBF	GPP	2,240	2004	Temporary Facilities
Programmatic	NTS-02-078	Air Building Replacement U1a	RTBF	E	7,200	2004	Completed in FY 2003
Programmatic	XXX-XX-XXX	Hoist Building for U1h Shaft	RTBF	E	1,274	2004	Completed in FY 2004
RTBF	XXX-XX-XXX	NTS-NCCT Student Training Facilities - Area 23	RTBF	GPP	10,000	2004	Completed in FY 2004
WFO/DHS	XXX-XX-XXX	CTOS Training Office - Area 19	DHS	GPP	1,680	2004	Department of Homeland Security
WFO/DHS	XXX-XX-XXX	Common Infrastructure Facilities	DHS	LI	16,000	2005	Department of Homeland Security
Programmatic	XXX-XX-XXX	Trailer B101619 in Area 1	RTBF	E	2,940	2005	Completed in FY 2005
Programmatic	XXX-XX-XXX	Trailer B101620 in Area 6	DSW	E	1,658	2005	Completed in FY 2005
WFO/DHS	XXX-XX-XXX	High Speed Road and Environmental Test Facility	DHS	LI	13,073	2006	Department of Homeland Security
RTBF	NV-DM-482	SCADA System Building Addition	RTBF	GPP	1,440	2006	Expansion of Building 23-1010
WFO/DHS	XXX-XX-XXX	Training Facility and Airport/Inspections Facility	DHS	LI	19,393	2007	Department of Homeland Security
OGA/DOD	N/A	Yucca Lake Hanger Complex	DoD	LI	29,130	2007	Department of Defense
		Radiological/Nuclear Countermeasure Complex	DHS	LI	33,000	2007	Test & Evaluation Complex
RTBF	NTS-00-020	Fire Station 2 - Area 23	RTBF	LI	18,500	2008	N/A
RTBF	NTS-00-011	Fire Station 1 - Area 6	RTBF	LI	12,480	2008	Existing Facility Will Be Demolished
FIRP	NTS-03-068	NTS Radiographic Equipment Warehouse	DSW	GPP	10,000	2009	N/A
				Total	183,804		

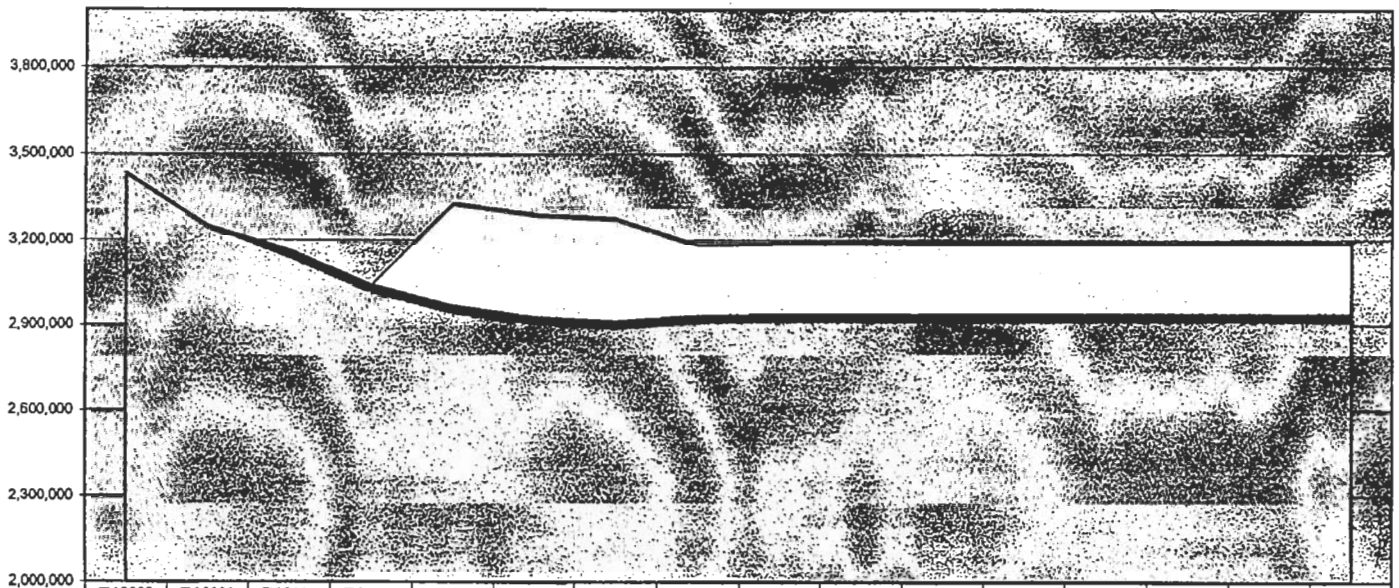
Attachment E-3
Grandfathered Footprint Added

Funding Source (1)	Project Number (2)	Facility Name (3)	Mission Dependency Program (4)	Funding Type (LI, GPP, IGPF) (5)	Project Area (GSF) (6)	Year of Beneficial Occupancy (7)	Notes (8)
RTBF	01-D-107	Atlas Pulsed Power Facility	RTBF	LI	22,407	2003	
RTBF	XXX-X-XXX	Atlas Site	RTBF	LI	875	2003	
Total							

Attachment E-4(a)
FOOTPRINT TRACKING SUMMARY SPREADSHEET
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 Characterization (gsf) (5)	Footprint "Banked" (gsf) (6)	Waiver Transfer (gsf) (7)	"Grandfathered" Footprint Added (gsf) (8)	"Grandfathered" Footprint Added Cumulative (gsf) (8)	NNSA Site Total Footprint (gsf) (9)	NNSA Leased Space (10)
FY 2002 Actual	3,435,035	-185,224	0	3,249,811	-185,224		-	0	3,249,811	
FY 2003 Actual	3,249,811	-109,250	0	3,140,561	-294,474		-	0	3,140,561	
FY 2004 Actual	3,140,561	-147,977	24,234	3,016,818	-418,217	200,000	23,282	23,282	3,040,100	
FY 2005 Actual	3,016,818	-77,748	4,566	2,943,666	-491,369		-	23,282	2,968,948	
FY 2006 Actual	2,943,666	-39,662	0	2,904,004	-531,031		-	23,282	2,927,286	362,615
FY 2007	2,904,004	-14,260	0	2,889,744	-545,291		-	23,282	2,913,026	362,615
FY 2008	2,889,744	0	19,940	2,909,684	-525,351		-	23,282	2,932,966	362,615
FY 2009	2,909,684	-5,022	10,000	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2010	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2011	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2012	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2013	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2014	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2015	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2016	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236
FY 2017	2,914,662	0	0	2,914,662	-520,373		-	23,282	2,937,944	249,236

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



	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
NNSA Leased Space (10)					362,615	362,615	362,615	249,236	249,236	249,236	249,236	249,236	249,238	249,236	249,238	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	23,282
Beginning Site Footprint (gsf) (2)	3,435,035	3,249,811	3,140,581	3,016,818	2,943,686	2,904,004	2,889,744	2,909,684	2,914,662	2,914,662	2,914,662	2,914,662	2,914,662	2,914,662	2,914,662	2,914,662

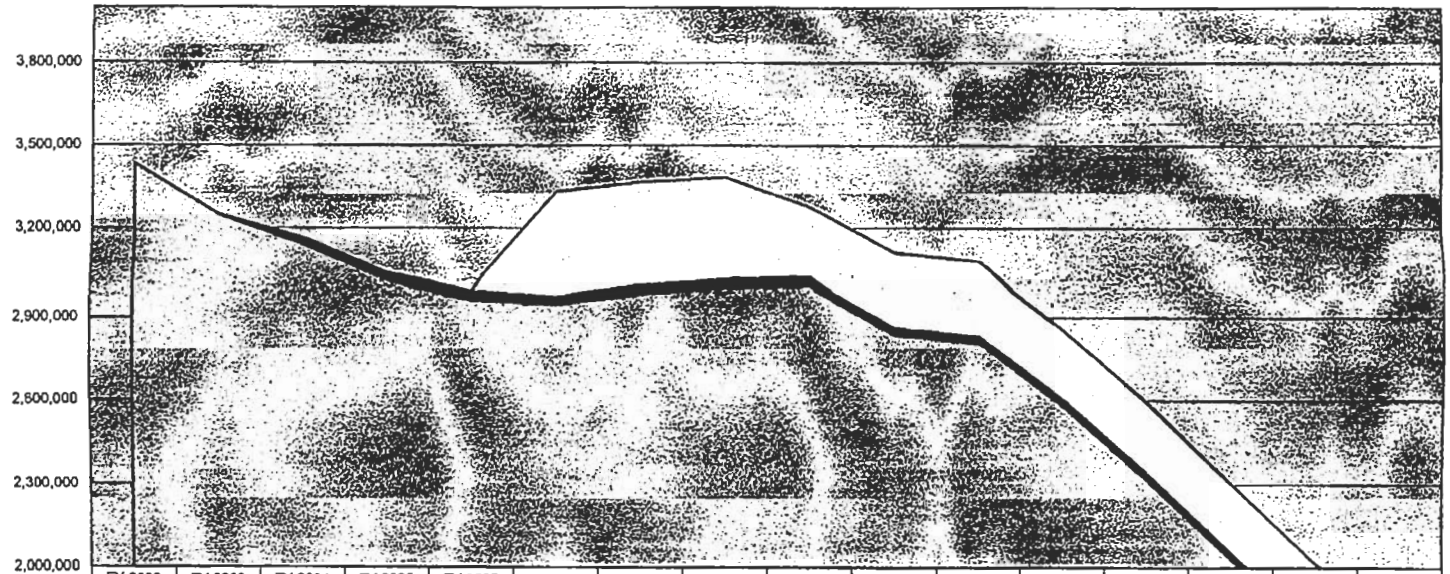
Attachment E-4 (b)

FOOTPRINT SUMMARY SPREADSHEET

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)	Footprint Reduction by FY (5)	Footprint "Banked" (gsf) (6)	Waiver/Transfer (gsf) (7)	"Grandfathered" Footprint Added (gsf) (8)	"Grandfathered" Cumulative Footprint Added (gsf) (10)	Site Total Footprint (Multi-Program) (gsf) (9)	Leased Space (10)
	3,435,035	-185,224	0	3,249,811	-185,224		0	0	3,249,811	
	3,249,811	-109,250	0	3,140,561	-294,474		0	0	3,140,561	
	3,140,561	-147,977	29,914	3,018,498	-416,537	200,000	23282	23,282	3,041,780	
	3,018,498	-77,746	20,596	2,961,348	-473,689		0	23,282	2,984,628	
	2,961,346	-39,862	25,883	2,947,377	-487,658		0	23,282	2,970,659	
	2,947,377	-14,260	48,523	2,981,640	-453,395		0	23,282	3,004,922	382,615
	2,981,840	0	18,500	3,000,140	-434,895		0	23,282	3,023,422	382,615
	3,000,140	-5,022	11,500	3,006,618	-428,417		0	23,282	3,029,900	382,615
	3,006,618	-168,239	0	2,838,379	-596,656		0	23,282	2,861,661	249,235
	2,838,379	-29,836	0	2,808,543	-626,492		0	23,282	2,831,825	249,235
	2,808,543	-225,509	0	2,583,034	-852,001		0	23,282	2,606,316	249,235
	2,583,034	-262,523	0	2,320,511	-1,114,524		0	23,282	2,343,793	249,235
	2,320,511	-288,529	0	2,031,982	-1,403,053		0	23,282	2,055,264	249,235
	2,031,982	-288,529	0	1,743,453	-1,691,582		0	23,282	1,768,735	249,235
	1,743,453	-225,000	0	1,518,453	-1,916,582		0	23,282	1,541,735	249,235
	1,518,453	-225,000	0	1,293,453	-2,141,582		0	23,282	1,316,735	249,235

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



	FY 2002 Actual	FY 2003 Actual	FY 2004 Actual	FY 2005 Actual	FY 2006 Actual	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY2014	FY2015	FY 2016	FY 2017
Leased Space (10)						362,615	362,615	362,615	249,236	249,236	249,236	249,236	249,236	249,236	249,236	249,238
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	23,282
Beginning Site Footprint (gsf) (2)	3,435,035	3,249,811	3,140,561	3,018,498	2,961,348	2,947,377	2,981,640	3,000,140	3,006,618	2,838,379	2,808,543	2,583,034	2,320,511	2,031,982	1,743,453	1,518,453

Attachment E-5
Waiver/Transfer Log (Space Added or Eliminated)

Site or Program Donor (1)	Site or Program Receiver (2)	Waiver Banked (gsf) (3)	Transfer Banked (gsf) (4)	Request Submitted (Yes/No) (5)	Request Approved (Yes/No) (6)	Comments (7)
NTS	SNL	200,000		Yes	No	NSO/SSO memorandum submitted February 5, 2004

Attachment E-6
FY 2007 Leased Space
Nevada Test Site

#	FIMS # (2)	Property Name (3)	Mission Dependency Program (4)	Mission Dependency (5)	# Occupants (6)	Gross Square Feet (7)	Rental Rate per Rentable s.f. (8)	Annual Cost (9)	Lease Type (10)	Lease Term - yrs. (11)	Exp. Month / Year. (12)	Renewal Options (13)
1	33551	Cheyenne Facilities Buildings 4 & 6	NNSA	MD	520	113,379	$17	$1,933,210		5 Years	Mar-13	Y
2	33551	Cheyenne Facilities Building 3[1]	NNSA	MD	150		$7	$738,046				
3	182	East Gate Industrial LAO	NNSA	MC	84	50,492	$20	$1,002,108		5 Years	Mar-08	Y
4	30064	Livermore, CA	NNSA	MD	90	35,687	$0			12 Years	Jan-11	Y
5	EAC	400 Shadow Lane, Suite 200 Las Vegas	NNSA	MD	1	1,778	$25	$44,843		10 Years	Oct-10	N
6	00001792A	Building 490-1794 Andrews Air Force Base Hanger	NNSA	MC	6	4,939	$0	-	Military/DOE Permit	25 Years	Apr-05	Y
7	L026020	T2230 RSL-N Trailer	NNSA	MD	10	1,440	$42	$60,420		3 Years	Jun-06	N
8	L026020	T2231 RSL-N Trailer	NNSA	MD	10	1,440	$42	$60,420		3 Years	Jun-06	N
9	L026020	T2232 RSL-N Trailer	NNSA	MD	10	1,440	$42	$60,420		3 Years	Jun-06	N
10	L026020	Botello Main Building 820 Frances Botello Road Santa Barbara	NNSA	MC	10	2,260	$57	$128,460		5 Years	Jul-08	Y
11	L026020	Ekwill 2 Buildings Santa Barbara	NNSA	MC	35	36,381	$32	$1,171,897		5 Years	Jan-07	Y

Note:
1. Square footage for Cheyenne Building 3 is included in line 1.

Attachment F-1
FIRP FY 2003 Legacy Deferred Maintenance Baseline and Projected Deferred Maintenance Reduction from Baseline
NNSA
($000s)

Category of Maintenance	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007	FY 2008 (Estimate)	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
1. FIRP DEFERRED MAINTENANCE (DM) BASELINE (Excludes Programmatic Real Property or Equipment)	329,684	309,186	283,243	258,167	257,262	242,749	228,143	204,482	184,699	161,018	143,513	143,513	143,513	143,513	143,513
2. DEFERRED MAINTENANCE BASELINE (DM) REDUCTION TOTAL	16,571	33,669	38,585	25,706	13,458	23,325	23,714	23,661	19,783	23,681	17,505	-	-	-	-
A. Reduction in DM Baseline (total due to FIRP ONLY) for all F&I	7,851	20,478	25,943	15,076	10,905	22,825	23,214	23,661	19,783	23,681	17,505				
i. Reduction in DM for Mission-Critical F&I (due to FIRP ONLY)				-	-	-	-	-	-	-	-				
ii. Reduction in DM for Mission Dependent, Not Critical F&I (due to FIRP ONLY)				13,011	5,482	17,302	14,606	15,856	7,101	10,215	14,916				
iii. Reduction in DM for Not Mission Dependent F&I (due to FIRP ONLY)[1]				2,065	5,423	5,523	-	7,805	12,682	13,466	2,589				
3. REPLACEMENT PLANT VALUE (RPV) FOR NNSA FACILITIES & INFRASTRUCTURE	2,422,125														

Note:
1. The Not Mission Dependent FIRP includes D&D Deferred Maintenance Buydown.

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

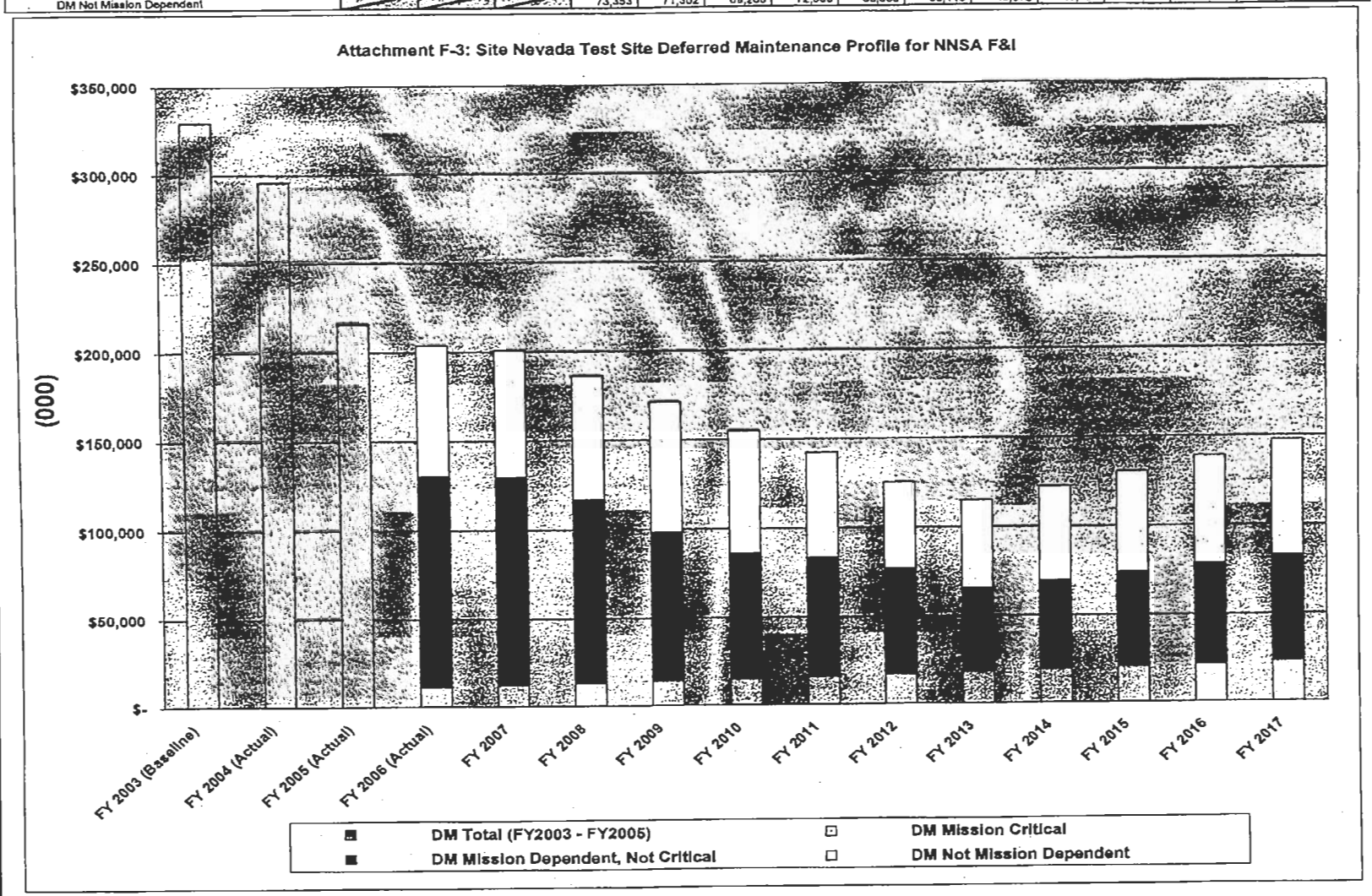
Category of Maintenance	FY 2005 (Baseline)	FY 2006 (Planned)	FY 2006 (Revised)	FY 2006 (Actual)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012[1]	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
1. NNSA ANNUAL REQUIRED MAINTENANCE	48,443	48,484	56,410	60,890	56,874	58,182	59,520	60,889	62,290	63,722	65,188	66,687	68,221	69,790	71,395
1A. NNSA ANNUAL REQUIRED REPLACEMENT-IN-KIND	-	3,982	11,700	8,978	22,662	9,508	6,510	3,580	-	-	-	-	-	-	-
2. NNSA ANNUAL PLANNED MAINTENANCE TOTAL	33,123	33,582	56,620	59,667	56,166	57,821	70,725	72,392	73,981	75,365	77,166	78,890	80,666	82,796	84,767
a. Direct[1]	10,035	9,620	13,428	16,960	17,603	18,354	20,120	20,823	21,021	21,187	21,731	22,291	22,866	23,458	24,066
b. Indirect	23,088	23,962	43,192	42,727	48,355	49,467	50,605	51,769	52,960	54,178	55,424	56,699	58,002	59,337	60,701
2A. NNSA ANNUAL PLANNED REPLACEMENT-IN-KIND	-	-	-	2,557	6,710	2,297	2,532	1,932	-	-	-	-	-	-	-
3. NNSA DEFERRED MAINTENANCE (DM) TOTAL (Excludes Programmatic Real Property or Equipment) = Inflation Prior Year DM Total + DM New - Prior Year DM Reduction	329,654	295,995	215,988	203,757	200,884	186,407	171,329	164,934	142,360	129,557	116,978	122,618	130,667	138,894	147,550
i. Backlog Inflation Rate (%)		2.3%	2.8%	3.7%	2.2%	2.3%	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	7,994	4,483	4,621	4,287	3,941	3,643	3,274	2,888	2,844	2,820	3,004	3,198
iii. DM NEW		-	-	5,481	5,602	5,738	5,882	5,997	6,136	6,276	6,420	6,568	6,718	6,874	7,032
A. DM, Mission-Critical F&I ONLY				11,248	12,112	13,023	13,970	14,953	15,974	17,034	18,134	19,276	20,461	21,690	22,965
B. DM, Mission-Dependent, Not Critical F&I ONLY				119,158	117,480	104,176	84,454	71,402	67,273	59,852	47,404	50,348	53,421	56,836	59,994
C. DM, Not Mission-Dependent F&I ONLY				73,353	71,302	69,208	72,905	68,580	59,113	48,872	40,438	52,997	56,705	60,568	64,591
4. DEFERRED MAINTENANCE (DM) REDUCTION TOTAL for NNSA Facilities and Infrastructure (F&I)[3]	16,671	33,669	38,585	25,706	12,948	24,637	25,228	26,332	22,273	26,552	19,689	1,670	1,670	1,670	1,670
i. Reduction Total attributed to FIRP ONLY	6,945	18,486	19,537	15,076	10,906	14,513	14,806	23,861	18,783	23,861	17,605				
A. Reduction in DM for Mission-Critical F&I				1,501	-	-	-	-	-	-	-	-	-	-	-
1. Reduction attributed to FIRP ONLY				-	-	-	-	-	-	-	-				
B. Reduction in DM for Mission-Dependent, Not Critical F&I				13,011	6,828	18,117	24,149	17,244	8,287	11,473	18,282	1,023	1,023	1,023	1,023
1. Reduction attributed to FIRP ONLY				13,011	5,482	8,910	14,806	15,856	7,101	10,215	14,916				
C. Reduction in DM for Not Mission-Dependent F&I				6,021	6,044	6,162	512	8,496	13,485	14,287	3,180	512	512	512	512
1. Reduction attributed to FIRP ONLY[2]				2,065	5,423	5,603	-	7,805	12,882	13,486	2,589				
5. REPLACEMENT PLANT VALUE (RPV) for NNSA Facilities and Infrastructure (F&I) = Inflation of PY RPV + Increase or Decrease due to other causes	2,437,567	2,447,665	2,867,604	2,843,708	2,908,270	2,973,114	3,041,495	3,111,450	3,183,013	3,256,222	3,331,116	3,407,731	3,486,108	3,566,290	3,648,314
A. RPV for NNSA Mission-Critical F&I ONLY				473,832	484,256	495,384	506,788	518,444	530,369	542,567	555,048	567,812	580,872	594,232	607,899
B. RPV for NNSA Mission-Dependent, Not Critical F&I				1,183,855	1,209,900	1,237,728	1,266,195	1,295,318	1,325,110	1,355,588	1,386,768	1,418,662	1,451,291	1,484,671	1,518,818
C. RPV for NNSA Not Mission-Dependent F&I				1,186,021	1,212,113	1,239,992	1,268,512	1,297,688	1,327,534	1,358,068	1,389,303	1,421,257	1,453,946	1,487,387	1,521,597
D. RPV increase from prior year attributed to inflation				107,914	82,562	88,944	68,382	69,954	71,563	73,209	74,894	76,616	78,378	80,181	82,026
E. RPV increase / decrease attributed to causes other than inflation (provide separate supporting narrative behind F-2 exhibit)				(131,810)	-	-	-	-	-	-	-	-	-	-	-

FCI Analysis	FY 2005 (Baseline)	FY 2006 (Planned)	FY 2006 (Revised)	FY 2006 (Actual)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
FCI TOTAL	13.5%	13.5%	7.5%	7.2%	6.9%	6.3%	5.6%	4.9%	4.5%	3.9%	3.4%	3.4%	3.7%	3.9%	4.0%
FCI Mission Critical				2.4%	2.6%	2.8%	2.8%	3.0%	3.1%	3.3%	3.5%	3.5%	3.7%	3.8%	3.9%
FCI Mission Dependent, Not Critical				10.1%	9.4%	7.2%	5.0%	4.2%	3.8%	3.2%	3.7%	3.8%	3.8%	4.0%	4.1%
FCI Not Mission Dependent				8.5%	6.8%	5.1%	4.3%	4.2%	4.1%	3.9%	3.5%	3.9%	4.5%	4.5%	4.6%

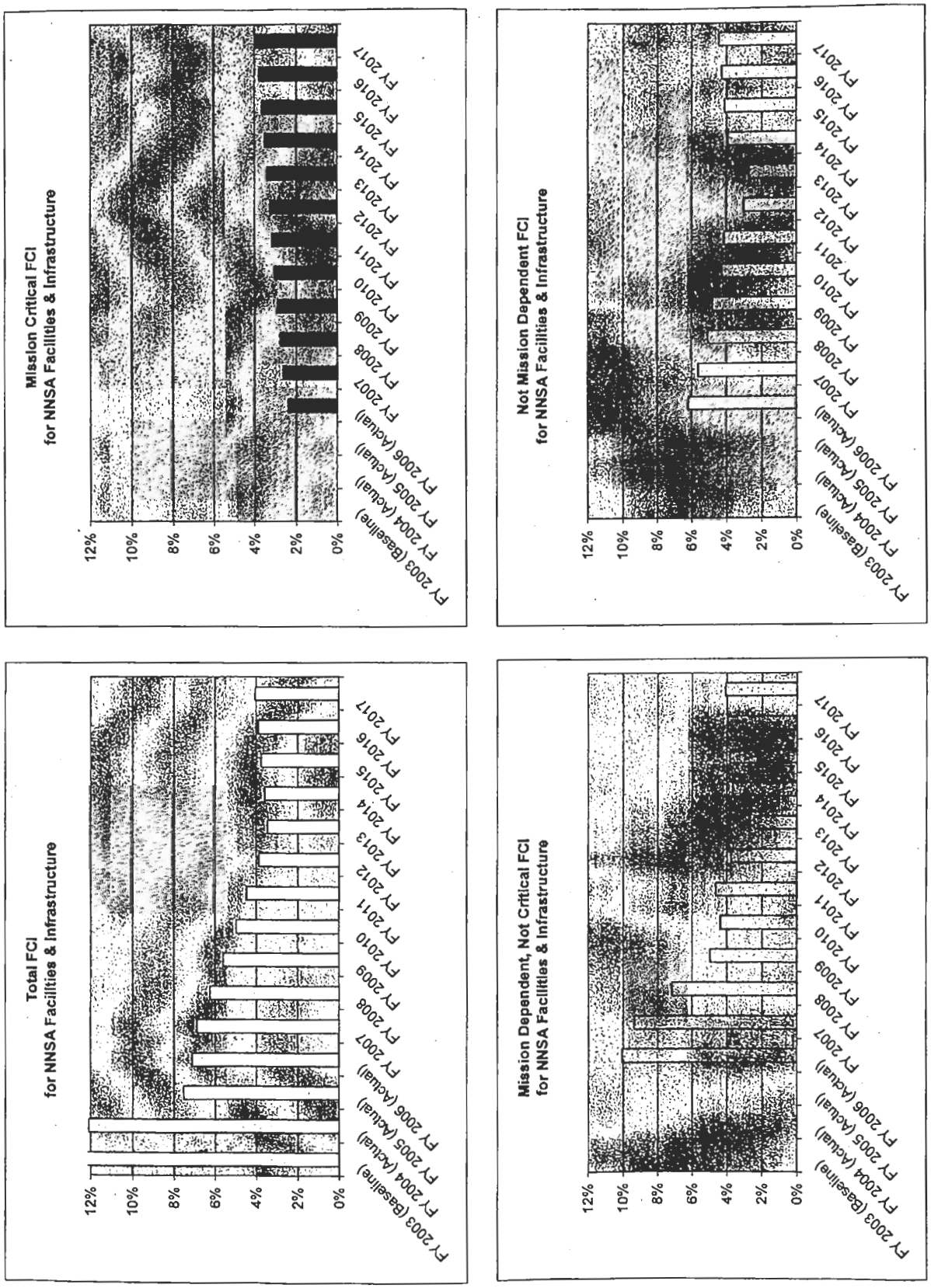
Note:
1. Due to last minute changes in the RTBF budget. The Direct Maintenance costs does not match the existing IFI Crosscut report, but will match the next Quarterly IFI Crosscut report.
2. The Not Mission Dependent FIRP includes D&D Deferred Maintenance Buydown.
3. FY 2008 Deferred Maintenance Reduction Total includes $5,173 in additional Deferred Maintenance adjustments.

ATTACHMENT F-3
INPUT SHEET FOR CHART
($000)

Category of Maintenance	FY 2003 (Baseline)	FY 2004 (Actual)	FY 2005 (Actual)	FY 2006 (Actual)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
DM Total (FY2003 - FY2005)	329,864	295,995	215,988												
DM Mission Critical				11,248	12,112	13,023	13,969	14,953	15,974	17,034	18,134	19,276	20,461	21,690	22,965
DM Mission Dependent, Not Critical				119,158	117,480	104,176	84,454	71,402	67,273	59,852	47,404	50,346	53,421	58,636	59,994
DM Not Mission Dependent				73,353	71,302	69,208	72,905	68,580	59,113	48,672	49,438	52,997	58,705	80,568	64,591



ATTACHMENT F-4: Nevada Test Site's Facility Condition Index (FCI) for NNSA F&I



Attachment F-5
Replacement-in-Kind Projects Over $500K

Optimum Year for Purchase (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 Replacement (7)	Identified in FY 2003 Baseline (Y or N) (8)	Within Current FYNSP Constraints (Y or N) (9)	Projected Cost ($K) (10)
2006	NLV Roof Replacement 2006	N/A	MC	N/A	N/A	2006	N	N	584
2006	NTS Roof Replacement 2006	N/A	MC	N/A	N/A	2006	N	N	2,703
2006	NTS Replace Oil-Based PIDSs-A5	06P-S-1 06P-S-9 05P-S-15 06P-S-4160	MC	Replaces 4-34.5kV O-PIDs & 16-4.16kV O-PIDs in Area 6 substations	FIRP	2006	Y	Y	4,700
2006	NTS Replace Oil-Fired Boiler, Bldg. 23-111	Bldg. 23-111	MC	Replace 25 year old oil fired boiler installed in 1979	FIRP	2006	Y	Y	850
2006	NTS Surface Laid Cable Gate 700 Substation	------	MC		FIRP	2006	Y	Y	1,408
2006	NTS Replace Oil-Fired Boiler, Building 23-156	Bldg. 23-156	MD	Replace 44 year old oil fired boiler installed in 1960	FIRP	2006	Y	Y	526
2006	NTS Surface Laid Cable Shoshone Transmitter	29C-AT-SHO 29C-TR-SHO 29C-MS-SHO 29C-PS-SHO	MC		FIRP	2006	Y	Y	992
2006	NTS Replace Copper Comm. Cable, Mercury to Spotted Range	90C-CC-NTSC	MC	Site-wide copper cabling network	FIRP	2006	Y	Y	500
2007	NTS Roof Replacement 2007	N/A	MC		N/A	2007	N	N	6,710
2007	NTS Replace Castle Rock Substation	19P-S-CR	MC	Replace Castle Rock Substation	FIRP	2007	Y	Y	4,500
2007	NTS Replace Oil-Based PIDs- A12 North, A18, A19	12P-S-RA 18P-S-SW 19P-S-PM	MC	Replace O-PIDs in the Rainier Mesa, Pahute Mesa and stockade Wash substations	FIRP	2007	Y	Y	4,500
2007	NTS Replace LAN Connection to 23-160	23C-LE-160 23-C-LANC	MC	Replace the copper comm. cable and end LAN equipment in 23-160 and in 23-117, the point of origin	FIRP	2007	Y	Y	900
2007	NTS Replace Oil-Based PIDs-A12 West	12P-S-4160	MD	Replace 33 O-PIDs in 4.16kV substations in Area 12	FIRP	2007	Y	Y	4,650
2007	NTS Replace Well 5c/NTS Replace Army Well No.1	56W-WW-5c 2223W-WW-A	MC	Well 5c in Area 5/Army Well#1	FIRP	2007	Y	Y	3,600
2007	NLV LAN Switch Replacements	24C-LD-A1 24C-LD-C1 24C-LE-A1 24C-LE-C1	MC	Replace the LAN data centers and end equipment in NLV bldgs A-1 & C-1	FIRP	2007	Y	Y	4,304
2007	NTS Replace/Install New Microwave System, CP-18 to Echo Peak	06C-MS-CP18 19C-MS-ECHO	MC	Area 6 CP-18 microwave and Area 19 Echo Peak microwave systems	FIRP	2007	Y	Y	508
2008	NTS Replace Oil-Fired Boiler, Mercury Café (Bldg. 23-754)	Bldg.23-754	MC	Replace Mercury Cafeteria oil fired hot water and steam boilers	FIRP	2008	Y	Y	2,800
2008	NTS Roof Replacement 2008	N/A	MC		N/A	2008	N	N	2,297
2008	NTS Surface Laid Cable ARL Primary	25-202495	NMD		FIRP	2008	Y	Y	1,900
2008	NTS Surface Laid Cable Substation 5-12	------	MD		FIRP	2008	Y	Y	1,208
2008	NTS Replace Oil-Based PIDs. A12 East & SW X-Fmr	12P-S-4160 18P-S-SW	MD	Repl oil based transformer in Canyon Substation (Area 18) and 16 O-PIDs on the 12-11 substation circuits	FIRP	2008	Y	Y	3,600
2009	NTS Replace A-27 Water Tank, Controls and Distribution System	27W-ST-1 27W-BS-2 27W-DPL	MC	Replace Area 27 steel water storage tank, fill booster pump stastion & controls, and the water distribution pipes	FIRP	2009	Y	Y	2,510
2009	NLV Roof Replacement 2009	N/A	MC		N/A	2009	N	N	616
2009	NTS Roof Replacement 2009	N/A	MC		N/A	2009	N	N	1,916
2009	NTS Replace Oil Based PIDs Areas 6 & 25	06P-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
List of NSTec's Mission Critical Facilities and Infrastructure

Program Office: NNSA

Site: Las Vegas

Property ID	Property Name	Mission Dependency	Building RPV	Deferred Maintenance	Summary Condition*	MD Pgm Ofc	Gross Square Ft	Util %
2298027	B-10	Mission Critical	$61,063	$478	Excellent	DNS	94	100%
2327215	2221	Mission Critical	$2,339,024	$9,189	Excellent	NWIR	16,230	100%
2357069	C-04	Mission Critical	$93,543	$1,205	Excellent	DNS	144	100%
2371256	2216	Mission Critical	$264,728	$0	Excellent	NWIR	1,015	100%
6126692	A-10	Mission Critical	$16,890	$0	Excellent	DNS	26	100%
6104430	A-01	Mission Critical	$40,653,261	$6,286,152	Fair	RTBF	121,128	59%
2189851	A-07	Mission Critical	$249,447	$5,699	Good	DNS	384	100%
2297662	2211	Mission Critical	$43,087,570	$1,133,457	Good	NWIR	128,379	100%
2313782	C-03	Mission Critical	$5,018,643	$184,145	Good	RTBF	14,953	98%
		Mission Critical Totals:	$91,784,169	$7,620,325			282,351	

*Summary Condition: Excellent (DM <2% of RPV); Good (DM is 2 - <5% of RPV); Adequate (DM is 5 - <10% of RPV); Fair (DM is 10 - < 25%); Poor (DM is 25 - <60% of RPV); Fail (DM is > 59% of RPV); Not Applicable (Bldg falls into one of the following Status Categories: Shutdown Pending Transfer, Shutdown Pending D and D, D and D in Progress, Shutdown Pending Disposal, Deactivation)

Attachment G
List of NSTec's Mission Critical Facilities and Infrastructure

Program Office: NNSA

Site: Nevada Test Site

Property ID	Property Name	Mission Dependency	Building RPV	Deferred Maintenance	Summary Condition*	MID Pgm Ofc	Gross Square Ft	Util %
202268	06-CP-41	Mission Critical	$2,356,168	$186,377	Adequate	DNS	5,149	70%
202281	27-GS-560	Mission Critical	$114,560	$9,463	Adequate	DNS	81	100%
995662	27-5310	Mission Critical	$3,351,877	$213,647	Adequate	RTBF	4,587	100%
997016	23-1000	Mission Critical	$3,179,101	$186,213	Adequate	DNS	13,071	100%
997018	23-1002	Mission Critical	$878,317	$72,432	Adequate	DNS	3,593	100%
202278	27-5180	Mission Critical	$1,751,584	$25,214	Excellent	RTBF	1,031	100%
202280	27-5327	Mission Critical	$2,065,883	$34,936	Excellent	DNS	1,216	100%
202482	23-1103	Mission Critical	$1,498,247	$27,467	Excellent	DNS	6,129	100%
202491	06-CP-111	Mission Critical	$52,462	$1,042	Excellent	RTBF	348	100%
202532	01-202532	Mission Critical	$13,314,565	$48,768	Excellent	RTBF	1,274	100%
202650	06-DAF	Mission Critical	$268,500,647	$1,286,029	Excellent	RTBF	156,865	100%
202793	06-904	Mission Critical	$8,971,651	$13,219	Excellent	RTBF	19,667	100%
2028136	04-35	Mission Critical	$503,686	$6,981	Excellent	RTBF	1,000	100%
T00106	04-480	Mission Critical	$358,556	$3,549	Excellent	RTBF	285	100%
T90014	01-T90014	Mission Critical	$13,314,565	$0	Excellent	RTBF	3,100	100%
T90018	01-T90018	Mission Critical	$153,878	$0	Excellent	DNS	1,680	100%
202228	27-5180A	Mission Critical	$64,552	$62,132	Fail	RTBF	96	100%
202739	23-1104	Mission Critical	$662,458	$107,520	Fair	DNS	3,535	100%
997017	23-1001	Mission Critical	$941,141	$98,846	Fair	DNS	3,850	100%
998682	12-830	Mission Critical	$1,080,727	$113,573	Fair	RTBF	3,872	100%
999289	06-GS-270	Mission Critical	$80,008	$15,934	Fair	DNS	70	100%
999433	27-5325	Mission Critical	$679,483	$122,551	Fair	RTBF	1,200	100%
999947	27-5319	Mission Critical	$294,179	$40,324	Fair	RTBF	208	100%
201833	23-1101	Mission Critical	$952,004	$45,877	Good	DNS	864	100%
202277	27-5191	Mission Critical	$492,625	$24,110	Good	RTBF	870	100%
202283	27-GS-250	Mission Critical	$114,560	$4,112	Good	DNS	81	100%
996478	27-5100	Mission Critical	$7,252,678	$241,973	Good	RTBF	4,283	100%
997109	23-GS100	Mission Critical	$59,500	$1,310	Good	DNS	54	100%

*Summary Condition: Excellent (DM <2% of RPV); Good (DM is 2 - <5% of RPV); Adequate (DM is 5 - <10% of RPV); Fair (DM is 10 - < 25%); Poor (DM is 25 - <50% of RPV); Fail (DM is > 59% of RPV); Not Applicable (Bldg falls into one of the following Status Categories: Shutdown Pending Transfer, Shutdown Pending D and D, D and D in Progress, Shutdown Pending Disposal, Deactivation)

Attachment G
List of NSTec's Mission Critical Facilities and Infrastructure

Program Office: NNSA

Site: Nevada Test Site

Property ID	Property Name	Mission Dependency	Building RPV	Deferred Maintenance	Summary Condition*	MD Pgm Off	Gross Square Ft	Util %
998651	04-300	Mission Critical	$901,569	$20,065	Good	RTBF	1,387	100%
999948	27-5318	Mission Critical	$588,358	$28,514	Good	RTBF	416	100%
996840	23-701	Mission Critical	$1,692,609	$576,469	Poor	DNS	6,382	100%
		Mission Critical Totals:	$334,222,196	$3,626,647			246,244	

*Summary Condition: Excellent (DM <2% of RPV); Good (DM is 2 - <5% of RPV); Adequate (DM is 5 - <10% of RPV); Fair (DM is 10 - < 25%); Poor (DM is 25 - <60% of RPV); Fail (DM is > 59% of RPV); Not Applicable (Bldg falls into one of the following Status Categories: Shutdown Pending Transfer, Shutdown Pending D and D, D and D in Progress, Shutdown Pending Disposal, Deactivation)

Attachment G
List of NSTec's Mission Critical Facilities and Infrastructure

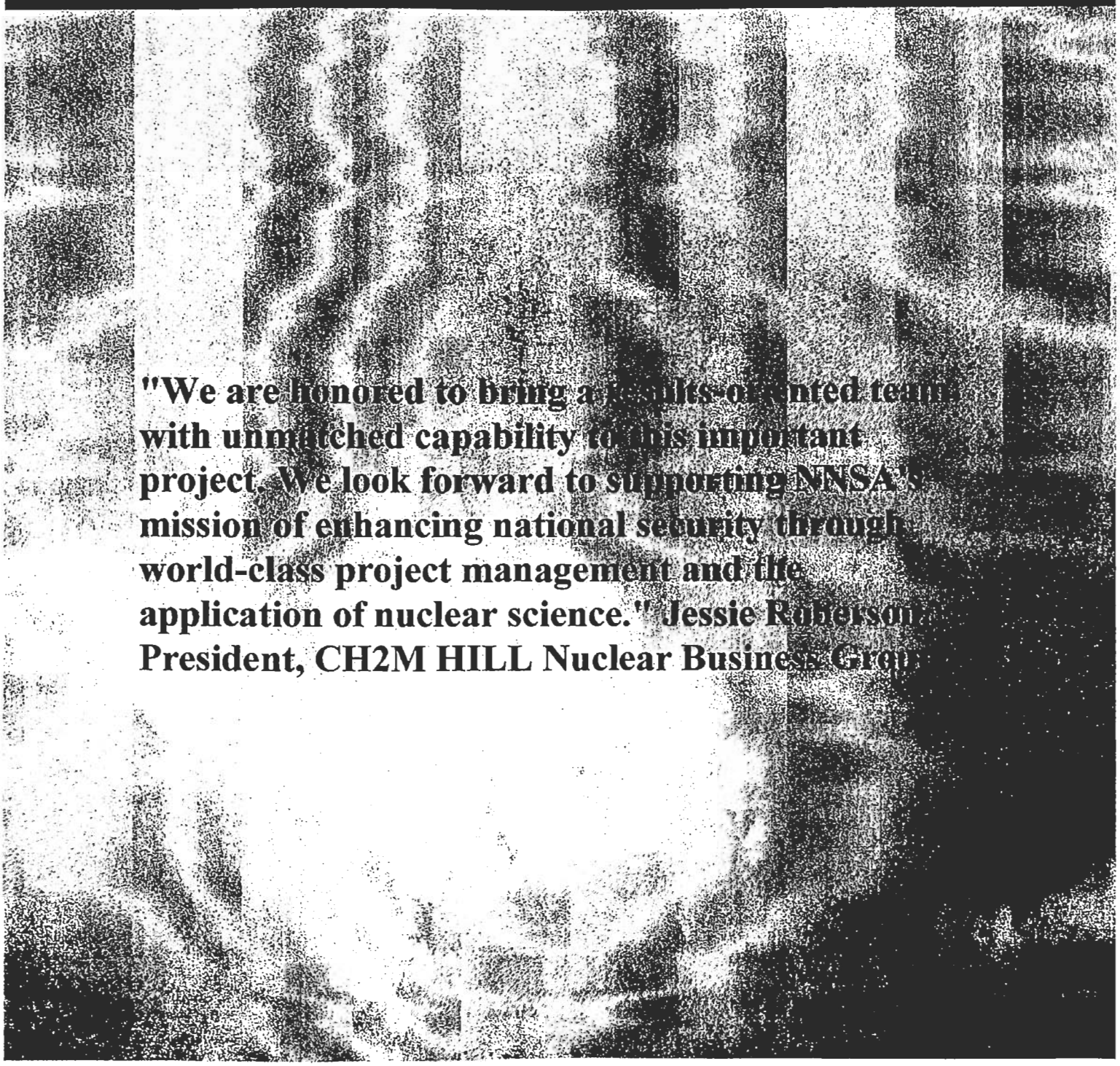
Other Structures and Facilities

PROP_SITE_NUMBER	PROP_AREA_NUMBER	PROP_NAME	PROP_NAME_ALT	PROP_PROPERTY_ID	PROP_MISSION_CRITICAL
09003	001	01-U1A	U1A COMPLEX	T00034	1
09003	001	01-U1H	U1H COMPLEX	T00035	1
09003	001	01-U1G	U1G COMPLEX	T00036	1

Appendix B

A Joshua tree in Mid[illegible]

FY 2008 NNSA/NSO
Ten-Year Site Plan



"We are honored to bring a results-oriented team with unmatched capability to this important project. We look forward to supporting NNSA's mission of enhancing national security through world-class project management and the application of nuclear science." Jessie Roberson, President, CH2M HILL Nuclear Business Group

Appendix B: Facility and Infrastructure Assessments

The Facility and Infrastructure Assessment process established a condition-reporting system in which facilities and infrastructure elements, i.e., power, water, roads, communication and sewer, were evaluated, categorized, and reported. It involved the coordination of Site and Infrastructure Planning Personnel, Condition Assessment Survey Personnel, and Subject Matter Experts conducting assessments of facility/infrastructure systems. Incorporating new condition assessment data and Facility Manager/ Facility Owner surveys into one procedure results in development of a versatile management tool that provides an overall indicator of facility and infrastructure disposition and assessment issues for strategic reinvestment. An overall summary of this process and its results are discussed in the following sections.

Facility/Infrastructure Assessment Process and Results

The Facility and Infrastructure Assessments involve the combined use of a condition assessment program, the completion of a survey and the use of an internal prioritization process. The results are reported annually in a Facility and Infrastructure Assessment Report. A detailed owchart of this process is illustrated in ***Figure B-1.***

Condition Assessment Program

The Facility and Infrastructure Assessment program uses two unique methods to evaluate facilities and infrastructure. The facility assessments use the established U.S. Department of Energy Condition Assessment Survey program which uses surveys conducted by International Code Council Inspectors. This process provides a current physical condition of a facility based on de ciencies and their associated deferred maintenance costs. An assessor is assigned to each discipline, e.g., architectural, mechanical, and electrical, where they are tasked to record the de ciency found on the date of the assessment. These data are then recorded into the Condition Assessment Information System database. Once entered, these de ciencies are compared to a Condition Assessment Information System model type which helps to determine the percent of de ciencies to the replacement plant value, which in turn, generates an overall condition. ***Table B-1*** presents the Condition Assessment Information System condition de nitions and the Facility and Infrastructure Assessments color codes for facilities.

Table B-1: Condition Assessment Information System definitions and color codes for facilities

CAC	CONDITION CODES: A & B
Excellent: only minimal routine maintenance required at cost <2% of replacement value **Good:** routine maintenance or minor repair required at cost <5% of replacement value	
CAC	CONDITION CODE: C
Adequate: some corrective repair and/or preventiive maintenance required at cost <10% of replacement value	
CAC	CONDITION CODE: D
Fair: extensive corrective maintenace and repair required at cost <25% of replacement value	
CAC	CONDITION CODES: E & F
Poor: major corrective repair or overhaul required at cost 60% of replacement value **Fail:** replacement required because repair cost is >60% of replacement cost	

Due to the absence of Condition Assessment Information System model types for infrastructure elements in the DOE Condition Assessment Survey program, specialized Subject Matter Experts developed an assessment method to evaluate the current condition of infrastructure

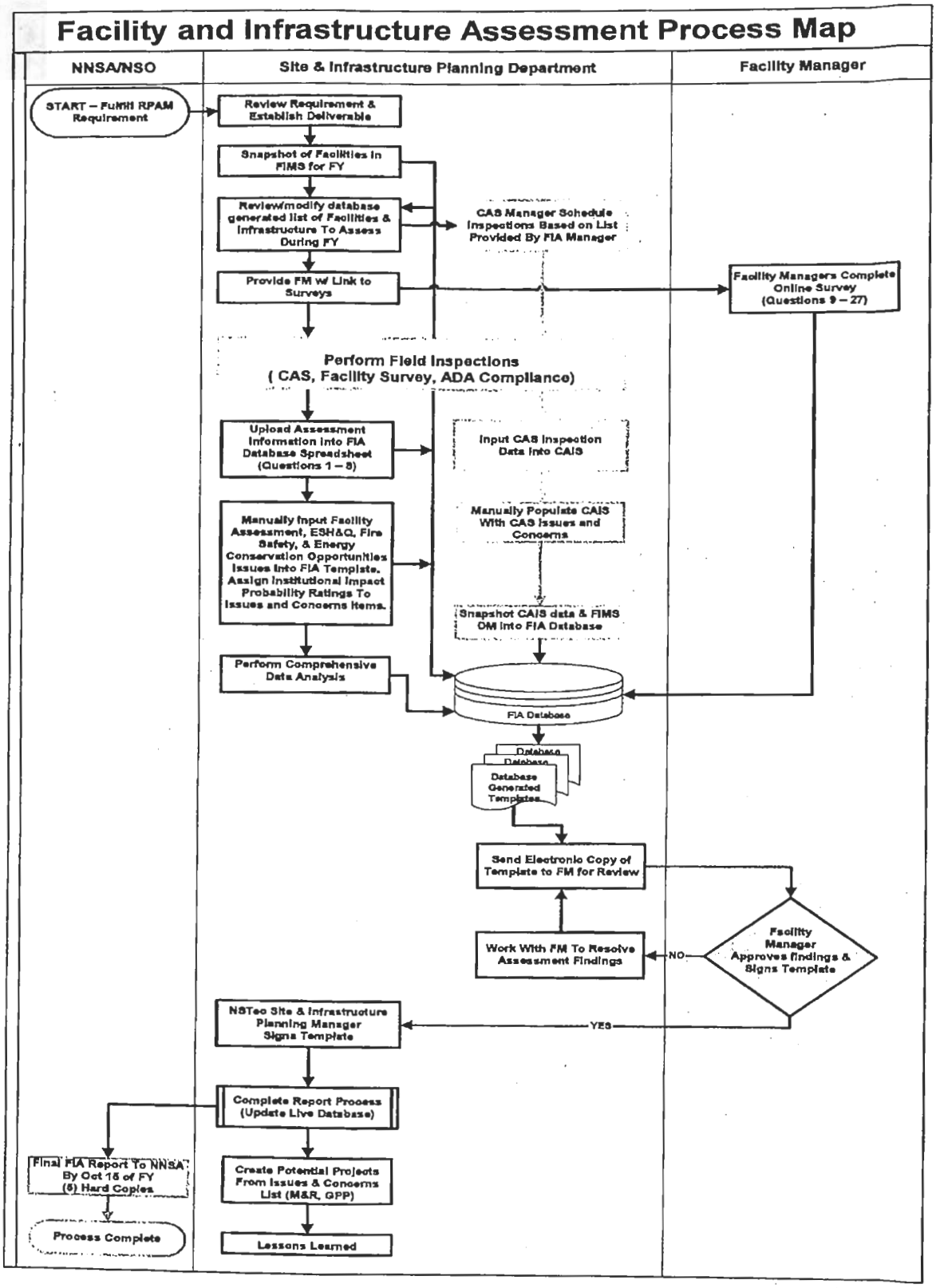


Figure B-1: Facility and Infrastructure Assessment Process Map

elements. A comprehensive list of existing infrastructure elements 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 de nitions for each infrastructure element and then rated the condition of the infrastructure element based on the de ciencies found and/or the age of the element. This rating was directly reported as the condition of the infrastructure element in the Facility and Infrastructure Assessments Report.

Table B-2 lists one example of the translations used for the infrastructure condition de nitions and their color codes.

Table B-2: Facility and Infrastructure Assessments color codes for Communication

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 function, 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 B-3*** through ***B-5***. Infrastructure assessments were completed in FY 2003 and a reassessment of the water systems was completed in FY 2005 and the communication system in FY 2006. Power systems will be reassessed in FY 2007, solid waste in FY 2008, and roads in FY 2009. Results shown re ect the last assessment data reported.

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 speci c 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 B-6*** lists the facility and infrastructure color codes, status ratings, and associated de nitions.

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 speci cations. 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 identi ed through the use of the survey. ***Figures B-2*** and ***B-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 B-4.***

Table B-3: Facility Condition by Area

Location	No. of Facilities	Total GSF	Excellent	Good	Adequate	Fair	Poor	Fail
Area 1	25	32,225	7,077 (4)	11,535 (4)	10,729 (8)	480 (1)	760 (3)	1,644 (5)
Area 3	2	1,901	0	0	484 (1)	1,417 (1)	0	0
Area 4	3	2,672	1,387 (1)	285 (1)	1,000 (1)	0	0	0
Area 5	30	49,943	4,936 (3)	10,752 (5)	630 (1)	7,512 (5)	23,949 (9)	2,164 (7)
Area 6	86	618,168	316,823 (23)	66,044 (13)	93,775 (14)	87,042 (19)	35,129 (6)	19,355 (11)
Area 7	1	72	0	0	72 (1)	0	0	0
Area 11	3	6,267	0	0	1,474 (1)	4,793 (2)	0	0
Area 12	19	112,722	72,610 (10)	11,931 (2)	4,428 (1)	22,895 (4)	858 (2)	0
Area 18	2	888	0	0	0	0	576 (1)	312 (1)
Area 22	3	3,169	0	0	0	2,069 (2)	0	1,100 (1)
Area 23	133	785,617	91,414 (17)	186,539 (15)	112,245 (27)	305,388 (46)	65,864 (19)	24,167 (9)
Area 25	37	236,141	83,893 (4)	12,720 (2)	56,419 (5)	50,427 (11)	32,626 (14)	56 (1)
Area 27	33	34,990	5,223 (7)	2,075 (4)	11,436 (9)	14,948 (9)	1,020 (2)	288 (2)
RSL- Nellis	6	161,528	33,149 (5)	128,379 (1)	0	0	0	0
RSL- Andrews	2	29,939	29,939 (2)	0	0	0	0	0
NLV	29	589,876	140,252(15)	28,396 (5)	106,047 (1)	188,693 (4)	126,488 (4)	0
Los Alamos	1	50,492	50,492 (1)					
Total	415	2,716,610	837,195 SF	458,656 SF	398,739 SF	685,664 SF	287,270 SF	49,086 SF

Table B-4: Infrastructure Condition by System

Power		**Poor:** System/equipment is becoming obsolete; age of equipment a major factor in replacement of parts; consistent substandard performance; requires greater than normal amounts of attention; No signi cant failures expected less than 3 years
Water		**Poor:** Equipment/material has reached the end of expected life and is nearing failure
Roads		**Accelerated Maintenance:** Base and surface repair
Communications		**Poor:** Equipment/material has reached the end of expected life and is nearing failure; failures are disruptive and costly
Solid Waste		**Fair:** Equipment/material is less than adequate, but functional

Table B-5: Facility and Infrastructure Condition by Area *(gray area denotes that this area does not contain Facility and Infrastructure or the area is inactive and was not accessed)*

Area 26						
Area 27	C	3		2	4	2
Area 29		3			3	
Area 52					4	
NLV					4	
LV-Sum					4	
RSL- Andrews	A				4	
RSL- Nellis	A				4	
Cheyenne					4	
LAO	A				3	
LO					3	
STL					4	
Pac Ops					4	
85-Site Wide					2	

Table B-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

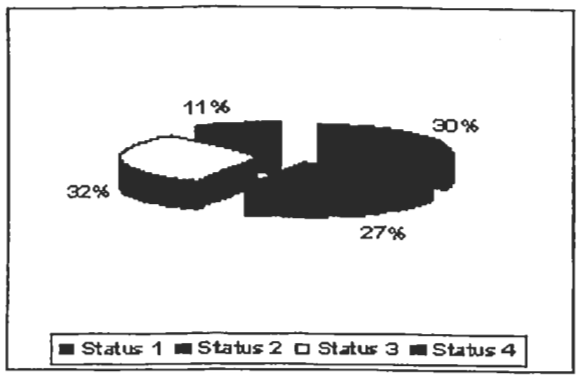


Figure B-2: Facility Survey Ratings

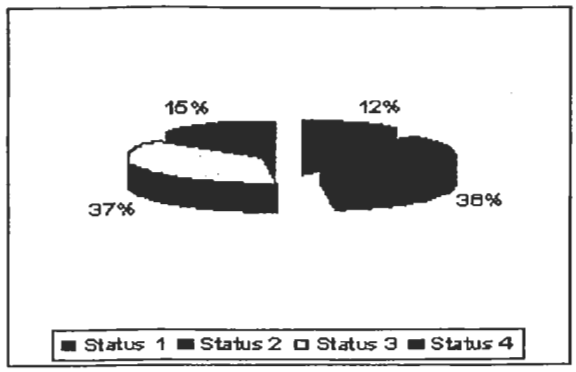


Figure B-3: Infrastructure Survey Ratings

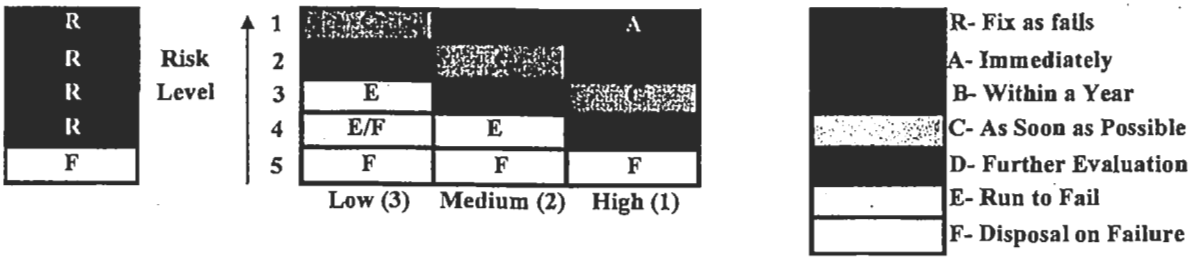


Figure B-4: Prioritization Matrix

Independently, the Facility Manager/Facility Owner knowledgeable of the mission drivers and impact potential, rank the facility and infrastructure elements according to a mission consequence or "risk level" as identi ed in ***Table B-7***. Based on the type of issue and its impact to the program, an "impact probability" rating is determined as shown in ***Table B-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 identi ed 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 nal TYSP Project List.

FY 2002-2006 Facility and Infrastructure Assessments Reports

Assessments following the new Facility and Infrastructure Assessment Program began in FY 2002. The rst complete cycle of operational facilities/infrastructure assessments was 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 2006 assessment consisted of a reassessment of FY 2003 facilities and facilities that changed operating status. This assessment also included the reassessment of the communications infrastructure elements. Assessments for FY 2007 include 109 facilities and power 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 B-9***. In general, the

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

Rating Number	Category	Criteria
1	Mission Shutdown	Impact of deferral or failure will shut down a mission function or 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 or may result in serous sponsor, community, or employee reaction, or serious ES&H/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/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/community satisfaction. May be deferred within current mission requirements. Typically only requires 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 don't repair.

Table B-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 B-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	[redacted]	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 (3)	D
Electrical Components Replacement (Life Cycle), 23-650 (1)	C

COMMENTS

Site & Infrastructure Planning 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.

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

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

Table B-9: Facility and Infrastructure Assessment Report Template (cont.)

29. 23-650 OCCUPATIONAL MEDICINE			YEAR BUILT: 1964 GSQFT: 30243
SYSTEMS	**CAC**	**CAIS DM**	**ISSUES AND CONCERNS**
Foundations			
Basement Construction			
Superstructure			
Exterior Closure		173	**Paint Metal Doors**
Roofing		1,019,000	**Roof Repair Project, NTS-03-038**
Interior Construction			
Interior Stairs			
Interior Finishes		50,818	**Ceiling Tile, Carpet, Paint, Linoleum, Baseboards**
Conveying Systems			
Mechanical - Plumbing		71,787	**Design Life of Plumbing Components**
Mechanical - HVAC		202,393	**Design Life of HVAC Components**
Mechanical – Fire Protection			
Electrical Systems		646,104	**Design Life of Electrical Components**
Specialty Systems			
Selective Building Demo			
Site Work Preparation			
Site Work Improvements			
Site Work Mechanical Util.			
Site Work Electrical Util.			
Site Work Other			
CAS Inspector Comments:			

Original Signed By Michael J. Fox — *June 8, 2004*
Facility Manager/Facility Owner — Date

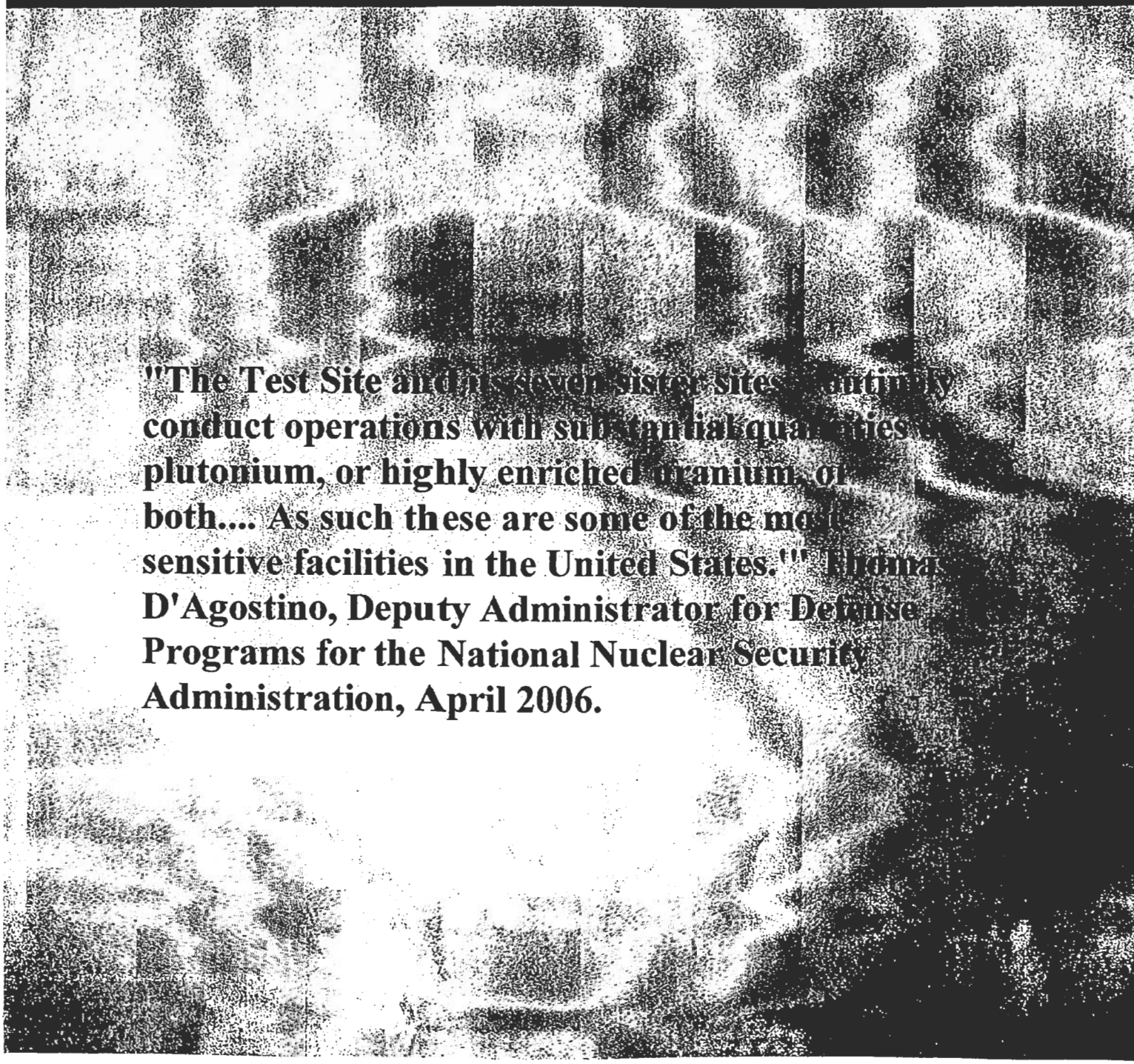
Original Signed By D. Michael Jones — *June 8, 2004*
Site and Infrastructure Planning Manager — Date

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.
- 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, ef cient and up-to-date facilities and infrastructure condition information
- Prioritizing the refurbishment of mission-critical 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 identi ed 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 identi ed in the TYSP.

FY 2008 NNSA/NSO Ten-Year Site Plan



"The Test Site and its seven sister sites routinely conduct operations with substantial quantities of plutonium, or highly enriched uranium, or both.... As such these are some of the most sensitive facilities in the United States." Thomas D'Agostino, Deputy Administrator for Defense Programs for the National Nuclear Security Administration, April 2006.

Appendix C

Scenic view in fall near Rem

Appendix C: 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 Pro les for Future-Years Nuclear Security Program Constrained Site Funding Pro les for Readiness in Technical Base Facilities/Operations of Facilities and Facilities and Infrastructure Recapitalization Program.

Program Decision memorandum (PDM) FY 2006 - 2012
Integrated Construction Program Plan (ICPP) for NA-10, NA-50, and NA-70

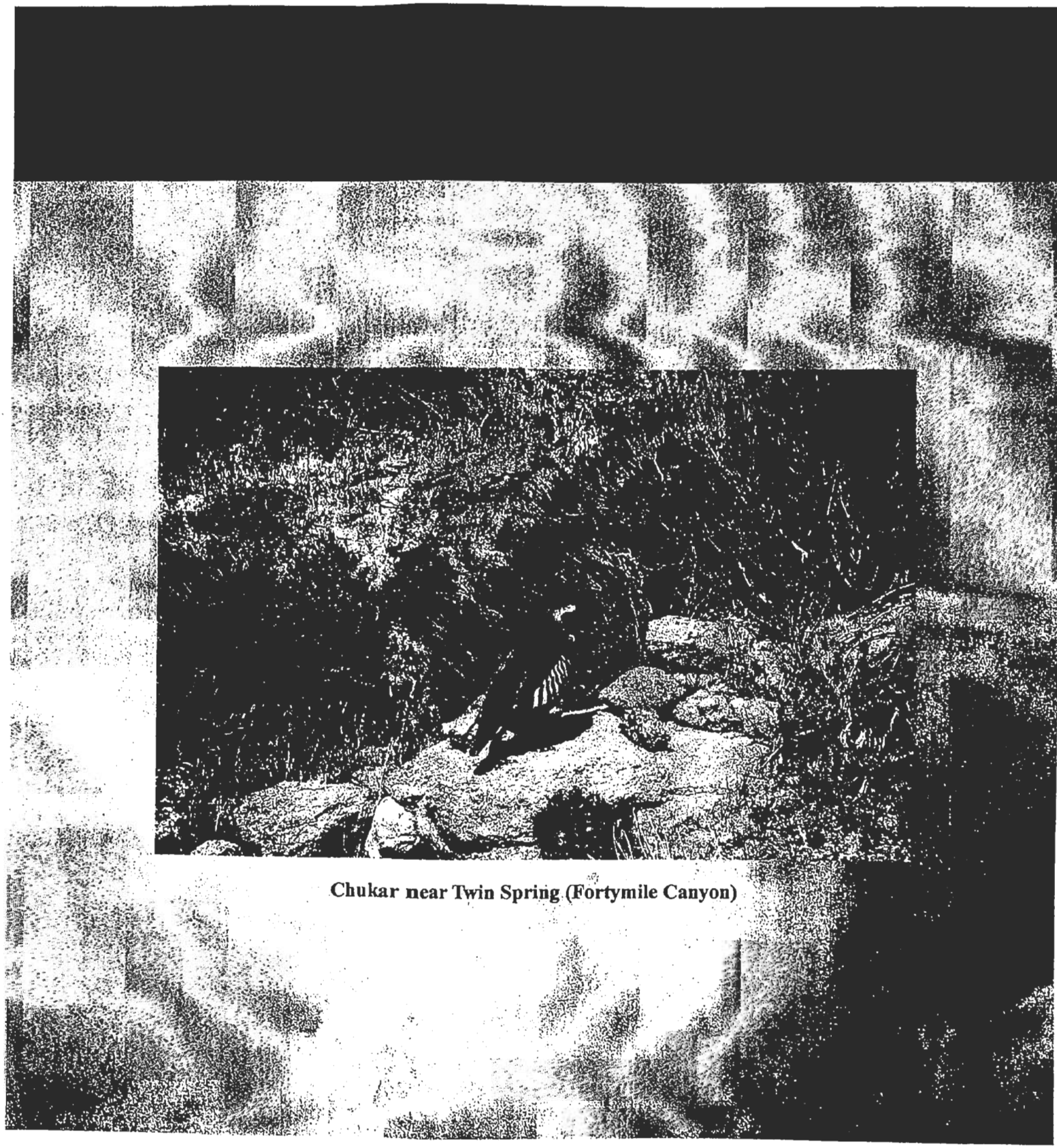
RTBF Line Item Construction			Funding	Prior Years	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Out Years	Prior Years
Building B-3 Remediation, Restoration, & Upgrade	LI	06-D-404	16,000		15,840										
	PED														
	OPC		3,351	500			2,848								
	TPC		19,351	500	15,840		2,848								
NTS Replace Fire Stations No. 1 and No. 2 Area 6 and Area 23 (previously separate projects)	LI	06-D-407	[illegible]		8,201	13,919	6,719								
	PED	04-D-103	2,343	2,343											
	OPC		705	705											
	TPC		31,387	3,048	8,201	13,919	6,719								
Total Program (FY 2006 - FY 2012)			47,527		24,041	13,919	9,567								
RTBF TEC Subtotal (FY 2006 - FY 2012)			44,679		24,041	13,919	6,719								
NV TEC Subtotal (FY 2006 - FY 2012)			60,479		24,041	13,919	14,519								

FIRP Line Item Construction			Funding	Prior Years	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Out Years	Prior Years
Replace Mercury Road	LI		15,800				7,800	8,000							
	PED		0												
	OPC		450		300	150									
	TPC		16,250		300	150	7,800								
Total Program (FY 2006 - FY 2012)			16,700		300	300	7,800	8,000							
FIRP Total (FY 2006 - FY 2012)															
FIRP TEC Subtotal (FY 2006 - FY 2012)			15,800				7,800	8,000							
S&S Candidates															
Total Program (FY 2006 - FY 2012)			0		0	0	0	0	0	0	0	0		0	0
S&S Total			0		0	0	0	0	0	0	0	0		0	0
S&S TEC Subtotal (FY 2006 - FY 2012)			0		0	0	0	0	0	0	0	0		0	0

[1] PED funding for NTS Replacement Fire Station 1 was funded in the enacted FY 2004 Appropriation, accelerated from FY 2006 thereby eliminating the requirement for FY 2006 PE funding. However, NTS has proposed to defer use of the Fire Station 1 PED funding due to schedule requiremenets. Therefore, Headquarters is evaluating alternatives to satisfy this request.

NOTE: OPC amounts are estimates, provided as information only.

Future-Years Nuclear Security Program (FYNSP) Constrained Site Funding Profiles for Readiness in Technical Base Facilities (RTBF) /Safety and Security (S&S)/Operations of Facilities and Facilities and Infrastructure Recapitalization Program (FIRP) ($000s)								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	Total
FIRP			7,800	8,000				15,800
S&S								0
RTBF	24,041	13,919	6,719					44,679



Chukar near Twin Spring (Fortymile Canyon)

(1) Excellent		(2) Good		(3) Adequate		(4) Fair		(5) Poor		(6) Failing	
FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCBP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP
11.3%	7.7%	0.6%	1.0%	5.0%	2.9%	4.2%	4.2%	10.2%	10.2%	2.9%	2.9%
3.4%	8.8%	0.4%	1.5%	5.1%	1.3%	4.4%	4.0%	5.0%	4.8%	3.3%	2.9%
13.2%	7.3%	2.3%	2.1%	1.2%	3.1%	2.3%	2.3%	9.5%	6.1%	1.5%	1.9%
2.6%	4.6%	5.8%	1.5%	5.2%	0.4%	1.3%	1.3%	0.0%	0.2%	0.2%	0.2%
4.1%	6.0%	3.1%	1.0%	2.0%	2.1%	4.0%	4.0%	0.2%	1.5%	0.8%	0.2%
4.1%	10.0%	1.3%	2.1%	1.7%	3.5%	5.4%	5.5%	1.4%	0.4%	0.6%	1.5%
28.7%	40.4%	13.5%	9.2%	20.2%	13.3%	21.6%	21.3%	17.3%	10.2%	3.2%	1.5%

Projected Sitewide Facility Condition Index (FCI) = 0.09

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

(1) Excellent		(2) Good		(3) Adequate		(4) Fair		(5) Poor		(6) Failing	
FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCBP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP	FY 2006 TYCSP	FY 2007 TYSP
0.6%	0.6%	1.1%	1.1%	2.9%	2.9%	4.9%	4.2%	9.9%	9.9%	2.9%	2.9%
0.4%	0.4%	1.5%	1.5%	1.3%	1.3%	5.0%	4.0%	4.8%	4.8%	2.9%	2.9%
2.2%	2.2%	2.1%	2.1%	3.2%	3.2%	1.2%	2.3%	0.5%	1.9%	1.9%	1.9%
35.6%	35.6%	1.5%	1.5%	0.4%	0.4%	6.1%	1.3%	0.0%	0.2%	0.2%	0.2%
3.0%	3.0%	1.1%	1.1%	2.1%	2.1%	2.0%	4.0%	0.2%	1.5%	0.3%	1.5%
1.3%	1.3%	2.1%	2.1%	3.6%	3.6%	19.8%	5.5%	1.4%	0.2%	0.1%	0.2%
13.1%	13.1%	9.4%	9.4%	13.5%	13.5%	19.8%	21.3%	16.9%	16.6%	2.1%	6.6%

Projected Sitewide Facility Condition Index (FCI) = 0.09

Service Buildings DO NOT include service structures that provide support function that is close to the point of

Sundown looking south over Yucca Flat from Oak Spring Butte