DOE/EIS-0243-SA-02

Supplement Analysis for the Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada to Address the Increase in Activities Associated with the National Center for Combating Terrorism and Counterterrorism Training and Related Activities

November 2003

U.S. Department of Energy
National Nuclear Security Administration
Nevada Site Office

Prepared by Tetra Tech Inc.
Task Order #: DE-RP08-03NA99295

Table of Contents

Section Page

ACRONYMS AND ABBREVIATIONS AA-1
EXECUTIVE SUMMARY ES-1
CHAPTER 1.0 PURPOSE AND NEED FOR ACTION 1-1
1.1 Introduction 1-1

CHAPTER 2.0 DESCRIPTION OF NEW AND/OR MODIFIED ACTIONS AND INFORMATION 2-1
2.1 Background 2-1
2.2 Combating Terrorism Activities 2-1
2.2.1 Training and Exercises 2-1
2.2.2 Testing and Evaluation 2-2
2.2.3 Applied Technologies 2-2
2.3 Potential Improvements to Facilities and Infrastructure 2-2
CHAPTER 3.0 SCREENING REVIEW 3-1
3.1 Methodology 3-1
3.2 Areas not requiring detailed analysis 3-1
3.2.1 Cultural Resources 3-1
3.2.1.1 Identified Cultural Resources 3-1
3.2.1.2 American Indian Consultation 3-3
3.2.1.3 Changes in Legislation 3-3
3.2.1.4 Consequence Analysis 3-3
3.2.2 Biological Resources 3-4
3.2.2.1 Introduction 3-4
3.2.2.2 2002 SA Evaluation 3-4
3.2.2.3 2003 Proposed Projects 3-7

Table of Contents (continued)

Section — Page

3.2.11 Waste Management 3-17
3.2.12 Occupational and Public Health and Safety 3-20
CHAPTER 4.0 CONCLUSIONS 4-1
CHAPTER 5.0 REFERENCES 5-1

List of Tables

Table — Page

2.3-1 Potential Activities List. 3-5
3-1 Nevada land areas (square miles) and controlling authorities 3-8
3-2 NTS employment trends (1996 - 2002). 3-11
3-3 Comparison of Criteria Pollutant Emissions for Potential Construction Related Activities to Criteria Pollutant Emissions Reported in the 1996 NTS EIS. 3-17
3-4 Waste information from the 1996 NTS EIS and 2002 Supplement Analysis 3-19

List of Figures

Table — Page

1-1 NTS Location 1-2
1-2 NTS Areas and Key Facilities. 1-3
3-1 General analysis approach. 3-2
3-2 NTS and surrounding land use 3-9

ACRONYMS AND ABBREVIATIONS

AAR	After-Action Report
ARL	Army Research Lab
BEEF	Big Explosives Experiment Facility
BLM	Bureau of Land Management
CSA	Central Support Area
CBRNE	Chemical, Biological, Radiological, Nuclear Explosive
CGTO	Consolidated Group of Tribes and Organizations
CCDAS	Control Communications Data Acquisition System
CTT	Counter Terrorism Technologies
DAF	Device Assembly Facility
DHS	Department of Homeland Security
DoD	Department of Defense
DOE	U.S. Department of Energy
DTRA	Defense Threat Reduction Agency
EA	Environmental Assessment
ECM	Electronic Countermeasure
EIS	Environmental Impact Statement
EMAC	Environmental Monitoring and Compliance
EMAD	Engine Maintenance Assembly and Disassembly
EMC	Exercise Management Center
EMR	Electromagnetic Range
EOs	Executive Orders
EOC	Emergency Operations Center
ESA	Endangered Species Act
ETS	Engine Test Stand-1
FAA	Federal Aviation Administration
FWS	U.S. Fish and Wildlife Service
HE	High Explosive
HSC	HazMat Spill Center
HVAC	Heating, Ventilation and Air Conditioning
Inf	Infrastructure
LAN	Local Area Network
M&O	Management and Operating
MCL	Maximum Contaminant Level
MOUT	Military Operations on Urban Terrain
MX	Missile X
NAFR	Nellis Air Force Range
NCCT	National Center for Combating Terrorism
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NIMA	National Imagery and Mapping Agency
NNSA/NSO	National Nuclear Security Administration Nevada Site Office

EXECUTIVE SUMMARY

This Supplement Analysis (SA) for Combating Terrorism Activities was prepared in accordance with the U.S. Department of Energy's (DOE's) requirements for implementation of the National Environmental Policy Act (NEPA) [10 Code of Federal Regulations Part 1021.330(d)]. This Nevada Test Site (NTS) Environmental Impact Statement (EIS) SA collects and analyzes sufficient information for the National Nuclear Security Administration Nevada Site Office (NNSA/NSO) to determine whether: (1) The *Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada* (DOE/EIS-0243) issued in 1996 should be supplemented; (2) a new EIS should be prepared; or (3) no further NEPA documentation is required.

Based on the analysis in this SA, NNSA/NSO has determined that there are no substantial changes to the NTS EIS or Record of Decision or significant new circumstances or information relevant to environmental concerns, and that no supplemental EIS is needed.

Purpose and Need

The NTS has been the site of many kinds of work relating to national security and combating terrorism as addressed in the NTS EIS and its Record of Decision (ROD). Training, exercises, testing, evaluation and development of technology for many customers have been conducted at the NTS under the auspices of the ROD, including military operational readiness and for response to weapons of mass destruction (WMD) environments and events. Although the NTS EIS addressed this broad range of potential activities at the NTS and the Remote Sensing Laboratory (RSL), the NNSA/NSO did not anticipate the increase in activities associated with combating terrorism.

In response to the terrorist attacks of September 11, 2001, there has been an increased need for DOE and other government agencies to develop, test and evaluate combating terrorism technology, equipment and systems, and to train our nation's emergency responders and military units to respond to weapons of mass destruction events. To respond to this increased need and to fulfill this part of its national security mission, NNSA/NSO needs to upgrade, enhance, and construct facilities, sites and infrastructure to support combating terrorism operational capabilities.

Description of New and/or Modified Actions and Information

In 2002, Congress established the National Center for Combating Terrorism (NCCT) to support national combating terrorism needs. The NCCT is two concepts: (1) a long-term vision for integrated use of NNSA/NSO combating terrorism assets and (2) a site improvement project to take steps to realize that vision. The long-term vision for the NCCT is to be a location where customers can obtain comprehensive, integrated combating terrorism services. To develop and achieve integrated use of NTS facilities and infrastructure for combating terrorism, NNSA/NSO is proposing to plan, design, upgrade and construct facilities, sites and infrastructure to improve NNSA/NSO assets at the NTS and the RSL to better meet operational requirements. In addition, many Work For Others (WFO) Program customers also require and fund facility and infrastructure modifications to ensure that their specific project requirements can be met.

Combating terrorism activities supported by NNSA/NSO fall into three major types: training and exercises, testing and evaluation, and applied technologies. Improvements to facilities and infrastructure ensure that these activities can be effectively undertaken to meet customer requirements.

This SA provides information that is additional to, and more specific than, the information provided in the 1996 NTS EIS and the 2002 Supplement Analysis relating to:

- Combating terrorism activities

- Potential improvements to Facilities and Infrastructure

Combating Terrorism Activities

Under the proposed action, additional activities could be performed and are dependent upon customer requirements and funding. This is an increase over the activities that were evaluated in the NTS EIS. These additional activities fall under the following categories:

- **Training and Exercises** - activities relate to response to WMD environments and events and to operational readiness for military units
- **Testing and Evaluation** - activities provide technology; data and communications technologies; and diagnostics systems development and operation.

Potential Improvements to Facilities and Infrastructure

The increase in combating terrorism activities would require improvements to existing facilities and infrastructure and, in some cases, construction of new facilities. Representative potential improvements to facilities, sites and infrastructure to support an increase in combating terrorism activities could include:

- Upgrade Existing Transportation Incident Exercise Site (Area 1, T1, Building 1-101, 102 and 121). Provide upgrades and

for training, exercises, testing, evaluation and technology development

- Renovate existing and construct new housing and personnel support facilities
- Purchase and install training props and equipment
- Purchase and install equipment, technology and instrumentation
- Purchase and erect permanent and mobile testing and communications platforms
- Augment and repair existing utility systems such as power, water, sewage; provide utility service to selected locations presently without working utilities
- Augment existing communications systems such as telephone (land line and cellular), video, conferencing, radio, microwave, fiber optics, integrated data networks, etc; provide communication service to selected locations presently without communications links
- Upgrade existing and construct new transportation systems (roads, landing strips, helicopter pads) at selected training and testing locations
- Undertake operating and maintenance activities for facilities and infrastructure (such as roof repairs, HVAC upgrades, painting, road repairs, sewage system cleaning, general cleanup, etc.)

Analytical Approach

A three-step review and analysis approach was used in developing this SA. These steps are summarized as follows:

1. Perform initial screening analyses of new or modified projects or proposals, changed circumstances, and new regulations. This screening analysis determined, without further detailed analysis, which specific impact areas clearly remain within the limits of environmental consequences established in the 1996 NTS EIS (i.e., that adverse impacts are not more adverse than or beneficial impacts are not more beneficial than those discussed in the 1996 document).
2. Perform more detailed analyses of impact areas that did not pass the screening criteria (Step 1) to determine whether the combined impacts remain within the envelope of consequences established in the 1996 NTS EIS.
3. For those impacts that were outside the envelope of consequences established in the 1996 NTS EIS, determine whether the incremental change in environmental consequences is significant, as defined in NEPA regulations.

As a result of the screening review, NNSA/NSO determined that for each technical discipline area, the 1996 NTS EIS remains an adequate description of potential NTS sitewide impacts including the proposed activities addressed in this SA and no supplementation of the 1996 NTS EIS is needed.

This page intentionally left blank

CHAPTER 1.0
PURPOSE AND NEED FOR ACTION

1.1 Introduction

The U.S. Department of Energy (DOE), National Nuclear Security Administration Nevada Site Office (NNSA/NSO), proposes to increase its support of combating terrorism activities thereby requiring facility and infrastructure improvements at the Nevada Test Site (NTS) in Nye County, Nevada and in technical operational capabilities at offsite locations such as the Remote Sensing Laboratory (RSL) at Nellis Air Force Base, Nevada.

1.2 Background

The NTS occupies approximately 1,375 square miles (approximately 880,000 acres) in southern Nevada (Figure 1-1), making it one of the largest restricted-access areas in the United States. This remote site is surrounded by more than 3 million additional acres of land withdrawn from the public domain for use as a military gunnery range (Nevada Test and Training Range [NTTR], formerly known as Nellis Air Force Range [NAFR]) and as a protected wildlife range (Desert National Wildlife Range). The NTS is approximately 65 miles northwest of the city of Las Vegas. Numerous offices, laboratories, and support buildings are spread across the NTS. NTS Areas and key facilities are shown on Figure 1-2.

As the Federal agency charged with operating and managing the NTS, NNSA in October 1996 prepared a Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada (NTS EIS). The Record of Decision (ROD) for the NTS EIS stated: "The DOE Nevada Operations Office Work for Others Program will continue to be an important aspect of Nevada Test Site related activities. These ongoing activities primarily involve the Department of Defense, the Defense Threat Reduction Agency (DTRA), and other federal agencies. The primary focus of these activities is centered around treaty verification, nonproliferation, counterproliferation, demilitarization, and defense related research and development." The ROD also states: "Other defense related research and development activities include tests and training exercises employing weaponry, such as small arms, artillery, guns, aircraft, armored vehicles, demolitions, rockets, bazookas, and air-dropped armaments, as well as a variety of electronic imagery and sensory technologies, including, but not limited to, infrared lasers and radar. It is expected that these types of experiments and tests would take place in appropriately zoned areas of the Nevada Test Site and would be compatible with surrounding land use."

1.3 Purpose and Need

The NTS has been the site of many kinds of work relating to national security and combating terrorism as addressed in the NTS EIS and its Record of Decision (ROD). Training, exercises, testing, evaluation and development of technology for many customers have been conducted at the NTS under the auspices of the ROD, including military operational readiness and for response to weapons of mass destruction (WMD) environments and events. Although the NTS EIS addressed this broad range of potential activities at the NTS and RSL, the NNSA/NSO did not anticipate the increase in activities associated with combating terrorism.

In response to the terrorist attacks of September 11, 2001, there has been an increased need for DOE and other government agencies to develop, test and evaluate combating terrorism technology, equipment and systems, and to train our nation's emergency responders and military units to respond to weapons of mass destruction events. To respond to this increased need and to fulfill this part of its national security mission, NNSA/NSO needs to upgrade, enhance, and construct facilities, sites and infrastructure to support combating terrorism operational capabilities.

Figure 1-1. NTS Location.

Figure 1-2 NTS Areas and Key Facilities.

The United States requires the capability to act decisively, and in a coordinated manner, at all levels of government to respond to the threat of terrorism and its consequences. The NTS provides a large, secure and remote location, ideal for classified operations and exercises; has a long history of safely conducting high-hazard work of all kinds; has realistic environments and test beds for training, exercises, and experimentation; has applied technology laboratories that develop counter-terrorism technologies for the field; and has strong relationships with key agencies involved in combating terrorism.

CHAPTER 2.0
DESCRIPTION OF NEW AND/OR MODIFIED ACTIONS AND INFORMATION

2.1 Background

In 2002, Congress established the National Center for Combating Terrorism (NCCT) to support national needs for combating terrorism. The NCCT is two concepts: (1) a long-term vision for integrated use of NNSA/NSO assets for combating terrorism and (2) a site improvement project to take steps to realize that vision. The long-term vision for the NCCT is to be a location where customers can obtain comprehensive, integrated services for combating terrorism. To develop and achieve integrated use of NTS facilities and infrastructure for combating terrorism, NNSA/NSO is proposing to plan, design, upgrade and construct facilities, sites and infrastructure to improve NNSA/NSO assets at the NTS and the RSL to better meet operational requirements. In addition, some Work For Others (WFO) Program customers also require and fund facility and infrastructure modifications to ensure that their specific project requirements can be met.

Combating terrorism activities supported by NNSA/NSO fall into three major types: (1) training and exercises, (2) testing and evaluation, and (3) applied technologies. Improvements to facilities and infrastructure ensure that these activities can be effectively undertaken to meet customer requirements.

The following sections provide information that is additional to, and more specific than, the information provided in the 1996 NTS EIS and the 2002 Supplement Analysis relating to:

- Combating terrorism activities
- Potential improvements to Facilities and Infrastructure

2.2 Combating Terrorism Activities

This section describes activities to support combating terrorism. These activities are presented in general in the 1996 NTS EIS, Appendix A, Sections A.1, A.4 and A.5, and in the 2002 Supplement Analysis in Chapter 3, Section 3.1. Under the proposed action, additional activities could be performed and are dependent upon customer requirements and funding. This is an increase over the activities that were evaluated in the NTS EIS.

2.2.1 Training and Exercises

Training and exercise activities relate to response to WMD environments and events and to operational readiness for military units.

For WMD training and exercises, the NTS is a charter member of the National Domestic Preparedness Consortium, and is designated as the National Center for Exercise Excellence by the Department of Justice, Office for Domestic Preparedness [now under Department of Homeland Security (DHS)]. As such, NNSA/NSO works with the DHS to implement the national WMD response training program. Training and exercise services provide classes and field drills to identify, respond to, avoid, enter into, decontaminate, mitigate, collect samples, and advise on a WMD event. Hands-on drills/exercises occur in existing radioactive contaminated areas and areas simulating WMD materials. This type of training is provided to federal, state and local agencies and emergency response groups. Recently, other federal agencies that respond to, or need to be aware of WMD situations, have been provided training and exercise services, such as the U.S. Customs Service, the Federal Bureau of Investigation, the National Guard Weapons of Mass Destruction Civil Support Teams, the U.S. Marine Corps Chemical and Biological Incident Response Force, and emergency medical teams. Courses are developed and executed to fit specific requirements for training.

For the Department of Defense (DoD), the NTS provides a secure, remote environment that emulates real world conditions. NNSA/NSO

supports the DoD in its air and ground based defense readiness exercises. In addition to providing the land and air space, NNSA/NSO provides logistical and operations support and exercise development/execution for live fire and force-on-force military field and command post exercises for DoD and other military-related government agencies.

2.2.2 Testing and Evaluation

Testing and evaluation activities provide consistent and reliable independent test and evaluation services that support research, development, laboratory and field testing and evaluation, and use of both emerging and commercially available equipment and technologies. Testing and evaluation projects are conducted for DOE, NNSA, DoD, DHS, other federal and state agencies, and private companies. Types of testing and evaluation activities that can occur are:

- WMD Test and Evaluation: Test and evaluation of equipment, technology and integrated systems; logistical and operations support for tests and evaluations in laboratory and field conditions.

- Defense Systems Testing, Evaluation and Training: The NTS is a member of the DoD Western Range Commanders Council and works to support DoD in its development, demonstration, and evaluation of procedures, equipment, technology and weapons systems for such technical areas as: demilitarization and unexploded ordnance support; contained burn/contained detonation experiments; explosives experimentation; advanced weapons simulation and diagnostics; operational and live fire tests; evaluation and effects assessments; hardened and deeply buried target detection and defeat; instrumented targets and ordnance platforms; and battle damage assessments.

- Hazardous Materials Spills, Testing, and Training: controlled releases of hazardous chemicals for the purpose of equipment, technology and hazardous materials research, development, testing, and training.

- Hard/Buried/Critical Target Detection, Defeat, and Defeat Assessment: research, testing and evaluation of methods, equipment, technologies and weapons systems to detect, defeat, and neutralize hard/buried/critical targets.

- Intelligence and Counter Terrorism Technologies Testing: development of sensors and detection systems, pre-field operational testing; confirmation of techniques, tactics and procedures; explosives diagnostics and render safe methods; investigative forensics technology; and proof of concept demonstrations for security and monitoring systems.

2.2.3 Applied Technologies

NNSA/NSO laboratories develop and apply technical solutions to national security and combating terrorism requirements. Specialties include such technical areas as: nuclear materials sciences, surveillance, and technology development; remote sensing science and technology; counter terrorism sciences and technology; data and communications technologies; and diagnostics systems development and operation.

2.3 Potential Improvements to Facilities and Infrastructure

The increase in combating terrorism activities would require improvements to existing facilities and infrastructure and, in some cases, construction of new facilities. Improvements selected for execution would be dependent upon user requirements and funding. It is important to note that the operational capabilities and venues created by such improvements could potentially be used by multiple customers. These venues may be used for more than one combating terrorism purpose, such as training as well as testing.

Representative potential improvements to facilities, sites and infrastructure to support

increase in combating terrorism activities could include:

- Upgrade Existing Transportation Incident Exercise Site (Area 1, T1, Building 1-101, 102 and 121). Provided upgrades and enhancements to existing facility/complex to expand training and testing capabilities. Major activities may include:
  - Install training props and equipment to simulate a multi-accident site. Props would simulate transportation accidents for airplane, helicopter, train, automobile, and heavy truck/vehicle.
  - Upgrade gravel roads to serve as training lanes within the previously disturbed radioactive-contaminated area, and install shade structure and bleachers
  - Upgrade HazMat Spill Center (Area 5). Provide operating improvements and an explosive test capability. Major activities may include:
  - Purchase and install a modular chemical storage building
  - Construct an approximately 4800 ft^2 pre-engineered building for materials and equipment assembly
  - Provide weather stations and a small tower for antennas
  - Construct a concrete testing pad for explosive tests on vessels that may be found in terrorist WMD production plants
- Create Mobile Instrumentation Platform. Provide equipment, technology and communications system links for a mobile diagnostics laboratory for identification and characterization of hazardous materials and explosives and testing and evaluation of sensing/detection systems
- Create Simulated Border Crossing Security Facility. Create simulated environment for training and testing relating to border crossings. Major activities may include:
  - Install border crossing infrastructure (road, gates, security systems, guard house, lighting, etc) for automobile and truck traffic
  - Install sensing and detection systems to enable monitoring of vehicles to detect transport of radioactive and hazardous materials
  - Provide space for storage of equipment and training/testing materials
- Upgrade and Expand Remote Sensing Laboratory on Nellis Air Force Base, Las Vegas, Nevada: potential improvements to the facility could include:
  - Construct second story to the Technical Support Building (TSB)
  - Expand assembly and testing laboratory within existing TSB
  - Purchase and install airborne-based truth and referee instrumentation platform
  - Upgrade communication systems to include: network operations centers, communications operations centers and databases.

Additional improvements to accommodate training, exercises, tests, evaluations, and technology development could be made at various existing and proposed facilities and locations. Table 2.3-1 provides a list of potential projects and representative types of improvements and categories of activity for each proposed action. This list is not exhaustive, but is intended to provide the types of potential activities and areas that could be performed under the proposed action.

Improvements that may be performed are similar to activities addressed in the NTS EIS in Appendix A.6, *Site Support Activities at the NTS*. In general, the following types of facility

and infrastructure improvements and construction may be performed to support combating terrorism activities:

- Modify/renovate/expand existing and construct new facilities, test beds and sites for training, exercises, testing, evaluation and technology development
- Renovate existing and construct new housing and personnel support facilities
- Purchase and install training props and equipment
- Purchase and install equipment, technology and instrumentation
- Purchase and erect permanent and mobile testing and communications platforms
- Augment and repair existing utility systems such as power, water, sewage; provide utility service to selected locations presently without working utilities
- Augment existing communications systems such as telephone (land line and cellular), video, conferencing, radio, microwave, fiber optics, integrated data networks, etc; provide communication service to selected locations presently without communications links
- Upgrade existing and construct new transportation systems (roads, landing strips, helicopter pads) at selected training and testing locations
- Undertake operating and maintenance activities for facilities and infrastructure (such as roof repairs, HVAC upgrades, painting, road repairs, sewage system cleaning, general cleanup, etc.)

s List.

Description	Potential NTS Area(s)	% Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
lti-accident/incident site with plane, helicopter, train, k (civilian and military) crashes for training including ng area, trailer, leach field. Subdock area in Area 1 ee buildings used and future addition of office trailers rage containers; Install toilet facilities near Building	1	100	700	2.00	4.00	160
test bed at BEEF to perform large explosions of to determine critical components.	4	100	1,000	1.00	0.40	40
heavy breeching area at BEEF with vault doors and e objects.	4	100	1,000	1.00	0.40	40
lti-accident/incident site with plane, train, auto, truck r training at T4.	4	100	700	2.00	4.00	160
experimental assembly building with leach field and test pad.	5	100	2,109	1.00	0.40	160
nd place transportainer type lab at the HSC test area to emical/mechanical facility.	5	100	5	0.01	0.00	0.00
existing power on the 225 line at HSC to provide 20v power directly.	5	100	0	0.03	0.00	3.00
requirements and develop a scope and cost estimate ct an optical sensor calibration range to testing and of optical prototype systems. Range will consist of but d to emissivity/thermal targets, Resolution wheel, es, water baths and solid target with temperature round sensor mobility infrastructure, instrumentation frastructure, and reflective target pads.	5	0	0	0.00	0.00	0.00

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Potential NTS Area(s)	% Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
HSC Control Communications Data Acquisition System (CCDAS) Building	Remodel existing CCDAS building. Includes additional Control Room Console, relocation of the existing CCDAS equipment rack to the center of the building, procurement of two additional racks, and the addition of new audio/visual rack to the control room.	5	0	0	0.00	0.00	0.00
New HSC Administrative Building	Build new admin. building – size 55' x 90'. Use existing septic system if sufficient capacity or build new leach field. Building will include vault type room for data processing.	5	70	2,109	0.89	0.40	160.00
Complete improvements for optical and radiometric calibration range at HSC (air and space borne)	Implement the results of training and exercise #12 (Radiometric/Optical calibration laboratory) to create an optical and radiometric range at HSC.	5	90	4,000	0.30	1.00	80.00
Waterline to HSC release pad	Install ~ 12" water line and service to the testbed in the locale of the release stacks. Estimated distance to existing service is ~ 100 ft.	5	100	10	0.05	0.05	8.00
Downwind Photo Ionization Detectors (PIDs)	Purchase and install PIDs (100 total) at HSC.	5	0	0	0.00	0.00	0.00
HSC Conference Facility	Construct ~ 55' x 90' building with theatre seating, audio system, stage, offices , test planning rooms, video wall and phones, water, power, and sewer.	5	70	2,695	0.89	0.40	160.00
Urban Training (Search and Rescue) facility	Construct a site or multiple sites to provide for heavy lifting, shoring, drilling & cutting, and rescue in a collapsed building venue.	5	60	1,584	0.70	0.40	40.00
Burma Road upgrades	Upgrade Burma Road for training and exercises.	5	70	1,000	1.00	1.50	100.00
Highway Mock-up & UAV Airstrip	If Highway mock-up and UAV airstrip in Area 5 rather than 25/26 then:	5	25	8,000	0.18	4.50	360.00
Area 6 Runway	Add a fuel depot to the UAV Runway in Area 6.	6	50	16000	1.4	0.4	270.00

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Construction					
					Land Disturbed		
		Potential NTS Area(s)	% Pre-disturbed	Gravel Needed (yards^3)	Acres	Equiv. Miles of Road	Water Used (1000 Gal)
Training and Exercise Center at Yucca Lake	Build a training and exercise center for activities on Yucca Lake.	6	70	2,109	1.00	2.00	160
TaDD/Tweezer Facilities	Usage of TaDD/Tweezer facilities for future activities; facilities would need renovations and new leachfields.	11	90	200	0.30	0.10	16
12 Camp Expansion	Expand 12 Camp with additional buildings including Fuel Depot, Health Club, Training Management Center, and Exercise Support buildings.	12	90	2,000	2.00	1.00	240
Close-Quarters-Battle Facility	Provide a shooting house.	12	100	1,806	0.23	0.40	20
Underground Subway Facility	Modify another existing tunnel with modifications to shore the invert for training and exercise. Provide infrastructure to support training and exercise.	12	100	200	1.00	1.00	60
Tunnel Complex	Potential new DTRA tunnel (granite tunnel complex) to be used for training and exercise.	15	5	10,000	1.40	4.50	1640
Camp	Build isolated camp resembling Camp 12 in Area 17.	17	5	22,880	25.60	4.00	900
Pahute Mesa Airstrip Improvements	Pahute Mesa Airstrip Improvements to support C17 A/C - Airstrip, Taxi/ramp/parking, Hangers, and Utilities (power, water, comm, sewer).	18	80	10,960	15.95	4.00	1800
Well Site	Drill new well/piping for water (well 8) at Pahute Mesa airstrip, and add fuel depot.	18	25	16,000	1.40	2.90	450
Close-Quarters-Battle Facility	Construct a shooting house.	19	100	1,806	0.23	0.40	20
Desert Rock Airstrip	Construct new building (office or other), construct roads, extend runway, add fuel depot.	22	25	28,960	24.45	1.40	2160
Range	Add small arms range.	22	20	4,500	9.18	0.50	120
Housing	Build 150 new rooms in Mercury.	23	100	7,254	3.36	1.20	360
Integrated Communications & Data Network	Fiber optic connections to Mercury EMC and A25/26 plus a cell site covering A25/26.	23	100	0	0.02	0.38	20
Mock CBRNE Labs	Renovate 10 mock labs in Bldg 790 and place props around building.	23	100	50	0.07	0.00	1.00

(continued).

Description	Potential NTS Area(s)	% Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
al design and needs statement for the NCCT rol, data analysis and fusion, EOC and AAR	23	0	0	0.00	0.00	0.00
00 Person Auditorium and NCCT NTS Site	23	100	1,806	0.23	0.40	80
NCCT command and control and exercise ng.	23	100	1,806	0.23	0.40	80
upgrades, fitness center, bowling center, etc.	23	100	100	0.10	0.10	16
ding east of Mercury.	23	70	4,362	1.72	0.40	240
perform data analysis and fusion on collected se data and provide integrated analysis of ses.	23	100	4,362	1.72	0.40	240
23-751 for training and staging.	23	100	100	0.20	0.10	20
y of an RDD site at Rad-contaminated Test	25	0	0	0.00	0.00	0.00
tions to the remaining mercury and A25 ings, to DoD from RSL, to other NCCT nd site cameras.	25	0	0	0.02	2.25	120
at Rad-contaminated Test Cell A.	25	100	50	0.10	0.10	4
t, most complex industrial site on NTS to em/bio industrial plant.	25	100	100	0.30	0.10	16
X facilities - racetrack and tubes (looking at tions, upgrades, etc.).	25	80	100	0.30	0.10	16
xisting customer, upgrade the town for NCCT nter, training and exercise and training ve infrastructure, add comm. Construct new ge facilities. Extend the existing pond with d a small stream capability.	25	90	3,000	2.00	1.00	100

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Construction					
					Land Disturbed		
		Potential NTS Area(s)	% Pre-disturbed	Gravel Needed (yards^3)	Acres	Equiv. Miles of Road	Water Used (1000 Gal)
EMAD upgrades	Upgrade EMAD complex (e.g., props, power, desert shade, camera hookup, and other utilities/infrastructure).	25	100	300	1.00	0.40	80
ETS-1 upgrades	Upgrade ETS-1 complex (e.g., props, power, desert shade, camera hookup, and other utilities/infra).	25	100	300	1.00	0.40	80
RBIFF upgrade	Upgrade RBIFF complex (e.g., props, power, desert shade, camera hookup, and other utilities/infrastructure).	25	100	300	1.00	0.40	80
RCP upgrade	If abandoned by existing customer, upgrade the complex for NCCT use as a support center, training and exercise and training operations. Improve infrastructure, add comm. Construct new buildings, and storage facilities. Refurbish cafeteria.	25	90	3,000	2.00	1.00	100
RMAD upgrade	Upgrade RMAD complex (e.g., props, power, desert shade, camera hookup, and other utilities/infrastructure).	25	100	300	1.00	0.40	80
Test Cell C - CBRNE Complex upgrades	Perform an Engineering Survey to provide basis for cost estimate to place 100A electrical power inside compound at Test Cell C at multiple places subject to results of engineering survey. Provide desert shade structures, bleachers, beaches, portable power, props, and a trailer and leach field for training up to 200 students.	25	100	10	0.25	0.00	12
Define alternate Sensor Background Venues at NTS	Provide precision controlled temperature backgrounds for placement in test environments. Research alternate background venues at NTS (like Test Cell C) to increase the number of sensor test venues for the Portable Plume Generator.	25	0	0	0.00	0.00	0.00
Improvements to Sensor Background Venues at Test Cell "C"	Engineering Survey to provide basis for cost estimate to place electrical power inside compound at Test Cell C. Less than 100 Amps total required. Locations subject to results of engineering survey.	25	0	0	0.00	0.00	0.00
Immune Building Upgrade	Upgrade the Immune Building with additional instrumentation. Make the Immune Building into a compound including B 4117 &4001 with fencing, guard gate, and security system.	25	90	500	1.00	0.50	50

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Construction					
					Land Disturbed		
		Potential NTS Area(s)	% Pre-disturbed	Gravel Needed (yards^3)	Acres	Equiv. Miles of Road	Water Used (1000 Gal)
Central Support Area	Building 4014 warehouse, build another at the east edge of the CSA.	25	50	2,418	1.12	0.40	120
Urban Training (Search and Rescue) facility	Construct a site or multiple sites to provide for heavy lifting, shoring, drilling & cutting, and rescue in a collapsed building venue.	25	100	0	1.40	0.00	20
ARL	Construction/modifications of training and exercise-owned ARL facilities.	25	80	100	0.30	0.10	16
Integrated Communications & Data Network	If cell at Port Gaston.	26	100	0	0.02	0.00	4
Urban Training (Search and Rescue) facility	Construct a site or multiple sites to provide for heavy lifting, shoring, drilling & cutting, and rescue in a collapsed building venue.	26	100	0	0.70	0.00	10
Lower Phoenix building upgrades	Upgrade lower (south) Phoenix pump building.	26	100	100	0.20	0.10	20
Phoenix C&C/Decon Ctr	Upgrade Phoenix for a Command and Control Center with cameras and a permanent decon center.	26	100	300	0.30	0.10	40
Port Gaston upgrades	Upgrade Port Gaston complex (e.g., props, power, desert shade, camera hookup, and other utilities/infrastructure).	26	100	300	1.00	0.40	80
Upgrade Shipping & Port Facilities with Containers	Upgrade facilities to replicate a port, rail or trucking terminal/transfer facility. Concept includes active interrogation of shipping containers, container handling facilities/equipment and full instrumentation. Construct new building and new leach field.	26	60	2,500	1.00	0.90	80
Border Security Facility; Facility Gate/Border Crossing Mockup	Modify the complex at Port Gaston to provide a border town with a real border crossing for auto and truck traffic. Provide a test track for sources to cross portals for evaluation. Provide space for equipment, storage of sources, etc. Construct new roads and pave some old roads. Construct leach fields.	26	80	8,000	4.73	2.67	160

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Construction					
					Land Disturbed		
		Potential NTS Area(s)	% Pre-disturbed	Gravel Needed (yards^3)	Acres	Equiv. Miles of Road	Water Used (1000 Gal)
Shipping & Port Facilities with Containers	Provide facilities to replicate a port, rail or trucking terminal/transfer at Port Gaston. Concept includes active interrogation of shipping containers, container handling facilities/equipment and full instrumentation. Provide real, working gantry and transportainers. Provide trailers and leach field.	26	90	4,132	1.00	0.90	120
NIMA Area	Small disturbance to extend NIMA area calibration features.	29	10	50	0.20	0.20	8
Multipurpose Exercise Area upgrades	Further improvements to Area 30 (Cat Canyon), including target improvements, new assembly area, and industrial features (rail, buildings, tanks).	30	80	2,000	2.00	1.00	100
NTS Electromagnetic Radiation Field Test Facility	Design and Build a NTS EMR test range – Urban & Rural Electronic Countermeasure (ECM) Technologies – Characterize, Assess, and Develop TTP for Real World events for RCIED.	12 or 25	90	1,000	0.20	0.40	8
Underground Subway Facility	Upgrade an existing tunnel with modifications to shore the invert, platform, subway cars, rail, and other props. Provide power, data. (Both Areas 12 and 25).	12, 25	100	200	1.00	1.00	60
Upgrade 20 Camp	Buildup old 20 Camp. Assumed same impacts as Area 12 upgrade.	19, 20	90	2,000	2.00	1.00	180
Multipurpose Training Area upgrades	Further improvements to Areas 19 & 20 training areas, including target improvements.	19, 20	90	2,000	2.00	2.00	160
Integrated Communications & Data Network	Fiber optic connections to the remaining mercury and A25 sites, to Indian Springs, To DoD from RSL, to other NCCT sites as possible, site cameras.	23 & RSL	0	200	0.06	5.00	240
Anti/Counter Cyber Terrorism Center	Design and build facilities to provide venue for anti-cyber terrorism testing and evaluation.	23 or 25	90	1,806	0.23	0.40	80
Integrated Communications & Data Network	Fiber optic connections to Mercury EMC and A25/26 plus a cell site covering A25/26.	25 & 26	50	0	0.02	1.75	84

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Potential NTS Area(s)	% Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
Urban Training (w/ live-fire & live breech/ no restrictions)	Building additional structures at an existing site to provide a working town for training and testing. Provide roads, power, water, comm.	25 & 26	50	22,880	25.60	4.00	1,032
Highway Mock-up & UAV Airstrip	Construct a high-speed highway that would be highly instrumented with detectors and include elements of a smart highway system. Provide sensor net. Provide trailer and storage. Provide power, data, and comm.	25 & 26	10	17,795	0.40	4.50	360
NTS Field Test Facility	Identify, upgrade, modify, or build a Security Sensor / Security System Field Test Bed at NTS in Area 25 or at RBIFF in Area 26.	25 or 26	90	1,000	0.20	0.40	8.00
Integrated Communications & Data Network	If cell at Area 25 or 26.	25 or 26	0	0	0.04	3.25	240
Sensor test bed for training and exercise and training/exercise	New ground-based truth and referee instrumentation test bed with diagnostic equipment, power, water, data and comm infrastructure. Processing and analytical systems. Trailers for equipment, storage, admin functions, command & control.	5 & 25	70	2,109	2.00	3.00	200
Urban Training (MOUT w/ live-fire & live breech/ no restrictions)	Build additional structures at an existing site to provide a working town site for training and testing. Provide infrastructure.	5 or 12 or 30	50	22,880	25.60	4.00	516
Chem / Bio Laboratory	Build new or renovate existing laboratory equipment and field equipment to support biological agent characterization and chemical analyses.	5 or 23	100	1,806	0.23	0.40	80
UAV	Build runway (50 ft wide by 3,000 ft long) with hanger and office complex for UAV.	5, 25	30	28,960	7.91	1.00	2,160
DHS Training and Exercise Center	Construct new DHS Training and Exercise Center (if funding provided).	5, 6, 23, 25 (maybe)	0	6,000	1.72	1.00	240
Driving skid pad	Pave asphalt area approximately 500 by 500 feet, usually in the vicinity of a track or roadway.	5,18, 22,25	50.00	12,500	14.33	1.25	20
Portable Plume Generator	Build two generators for training purposes.	All	N/A	0	0.00	0.00	0.00

List (continued).

Description	Potential NTS Area(s)	Construction: % Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
ical analysis capability/instrumentation to the form.	All	0	0	0.00	0.00	0.00
xplosives environmental case and Thermal imaging nt capability to the Mobile Platform.	All	0	0	0.00	0.00	0.00
wer capability to the mobile trailer(s). Anticipate ely 10 - 20 KW required for support of multiple	All	0	0	0.00	0.00	0.00
of SNM to multi sites security study.	N/A	0	0	0.00	0.00	0.00
oximately 10 scenarios/curricula plus props at ilities.	N/A	0	0	0.00	0.00	0.00
nstrumentation upgrades for the RSL Anechoic or extended capability.	RSL-N	0	0	0.00	0.00	0.00
story expansion to the existing TSB facility.	RSL-N	100	2,473	0.64	0.40	360
ernal areas in TSB for assembly and test, small ge.	RSL-N	100	10	0.10	0.00	8
w Airborne-based truth and referee instrumentation ing RSL equipment, Processing and analytical	RSL-N	0	0	0.00	0.00	0.00
mmercial sensor inventory, Laboratory Space, equipment.	RSL-N	0	0	0.00	0.00	0.00
twork Operations Centers, Communications , Centers, Infrastructure databases.	RSL-N	0	0	0.00	0.00	0.00
proved RF testing facility, Capacity to perform ntal testing on range of assets.	RSL-N	0	0	0.00	0.00	0.00
nt evaluation and certification of commercial and t detectors (UL Labs).	RSL-N	0	0	0.00	0.00	0.00

	Construction		
	Land Disturbed		
vel led ls^3)	Acres	Equiv. Miles of Road	Water Used (1000 Gal)
	0.00	0.00	0.00
)0	5.00	0.00	160
0	0.00	0.00	0.00
)9	10.00	0.00	240
0	0.25	0.00	16
0	1.00	0.00	32
)0	0.25	0.00	0.00
)	0.00	0.00	0.00

Table 2.3-1. Potential Activities List (continued).

Project Title	Description	Potential NTS Area(s)	% Pre-disturbed	Construction: Gravel Needed (yards^3)	Construction: Land Disturbed: Acres	Construction: Land Disturbed: Equiv. Miles of Road	Construction: Water Used (1000 Gal)
Emissivity, thermal assessment and general background mapping	Procure thermal scanning instrument; Integrate into aerial platform.	RSL-N	0	0	0.00	0.00	0.00

AAR	=	After-Action Report	ARL	=	Army Research Lab
BEEF	=	Big Explosives Experiment Facility	CBRNE	=	Chemical, Biological, Radiological, Nuclear Explosive
CCDAS	=	Control Communications Data Acquisition System	CTT	=	Counter Terrorism Technologies
DTRA	=	Defense Threat Reduction Agency	ECM	=	Electronic Countermeasure
AMAD	=	Engine Maintenance Assembly and Disassembly	EMC	=	Exercise Management Center
EMR	=	Electromagnetic Range	EOC	=	Emergency Operations Center
ETS	=	Engine Test Stand-1	HE	=	High Explosive
HSC	=	HazMat Spill Center	Inf	=	Infrastructure
LAN	=	Local Area Network	MOUT	=	Military Operations on Urban Terrain
MX	=	Missile X	NIMA	=	National Imagery and Mapping Agency
PID	=	Photo Ionization Detectors	RBIFF	=	Reentry Body Inertial Fuse Flight
RCIED	=	Radio Controlled Improvised Explosive Device	RCP	=	Reactor Control Point
RDD	=	Radiological Dispersal Device	RMAD	=	Reactor Maintenance Assembly and Disassembly
RSL	=	Remote Sensing Laboratory	SCIF	=	Sensitive Compartmented Information Facility
SNM	=	Special Nuclear Material	TaDD	=	Tactical Demilitarization Development (TaDD) Complex
TSB	=	Technical Support Building	TTP	=	Tactics, Techniques and Procedures
UAV	=	Unmanned Aerial Vehicle	UL	=	Underwriters Laboratory
UST	=	Underground Storage Tank			

This page intentionally left blank

CHAPTER 3.0
SCREENING REVIEW

The purpose of this Nevada Test Site Environmental Impact Statement Supplement Analysis (NTS EIS SA) is to determine the need for additional National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] Part 1508.27) analysis beyond that presented in the 1996 NTS EIS (DOE 1996). Chapter 2 provides a discussion of changes in the 1996 NTS EIS. Any necessary detailed analyses would be presented in a separate chapter in this SA.

3. For those impacts that are outside the envelope of consequences established in the 1996 NTS EIS, determine whether the incremental change in environmental

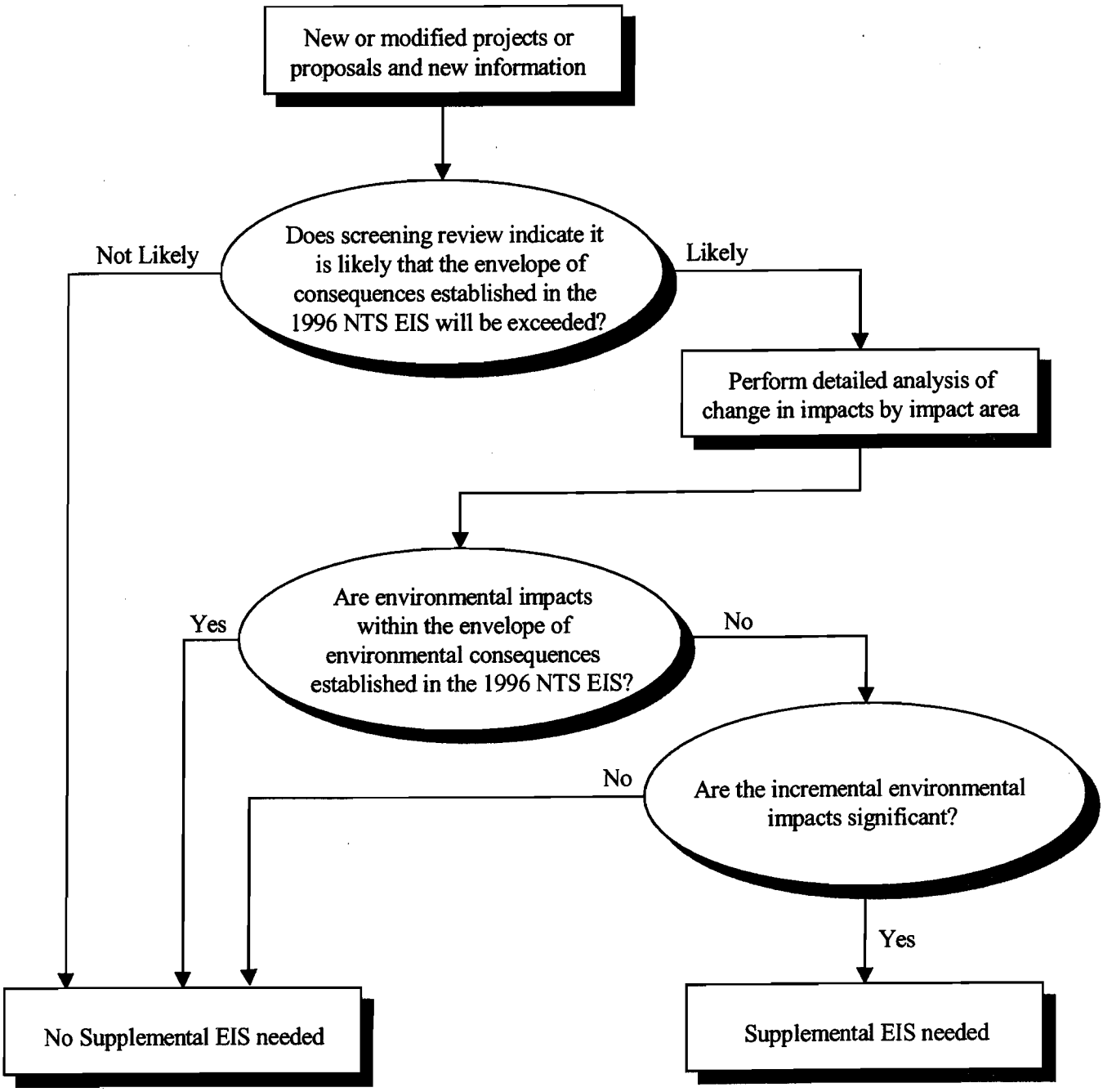

Figure 3-1. General analysis approach.

of the NTS, on and around Pahute and Rainier Mesas, followed by the southwest portion of the NTS, on and around Jackass Flats, Yucca Mountain, and Shoshone Mountain. However, this distribution should be regarded with caution. The relatively high number of cultural resources in these areas is due in part to numerous activities being conducted on those portions of the NTS, as most cultural resource investigations are conducted in response to planned NTS projects.

3.2.1.2 American Indian Consultation

The NNSA/NSO has an exemplary record of consultation with tribes concerning existing, new, and proposed activities on the NTS, as well as tribal concerns for natural and cultural resources located on the NTS. The NNSA/NSO has consulted with concerned American Indians since 1988. These consultations have led to the establishment of the Consolidated Group of Tribes and Organizations (CGTO), which includes members from 16 tribes and 1 pan-tribal organizations representing 3 ethnic groups found to have prehistoric and historic ties to the NTS: Western Shoshone, Southern Paiute, and Owens Valley Shoshone-Paiute. As such, the CGTO has a long-standing relationship with the NNSA/NSO. The primary focus of the CGTO has been the identification and protection of traditional cultural resources, and it has identified numerous sites on the NTS that are important to Indian people.

Consultations with the CGTO and any other affiliated tribes are ongoing and following the policies set forth by the DOE and current federal legislation. General concerns of these tribes for important resources on the NTS and potential impacts to these resources by NTS activities are accurately characterized by the 1996 NTS EIS and the 2002 Supplement Analysis (DOE 1996; NNSA 2002).

3.2.1.3 Changes in Legislation

The legislation detailed in the 1996 NTS EIS (Appendix E, Section E.2.10) that addresses federal agencies' obligations for cultural resources still apply to the NNSA/NSO at NTS. However, there have been some changes and additions to these obligations. The *National Historic Preservation Act of 1966* (NHPA) (16 USC 470, as amended) was revised in 1992 to include more extensive involvement of American Indian tribes and the public in cultural resource identification and decisions regarding evaluation, assessment of effect, and treatment. Another change was the determination that, while data recovery is an acceptable mitigation for adverse effects to archaeological resources, data recovery no longer removes the effect. Although the law was revised in 1992, revision of the NHPA's implementing regulations (36 CFR Part 800) was not completed and adopted until January 11, 2001. However, the changes in the regulations did not require gross changes in the operation of the NTS cultural resources program; the NNSA/NSO follows and will continue to follow the new regulations set forth in January 2001.

Three new Executive Orders (EOs) have been established since the 1996 NTS EIS. EO 13007, *Protection and Accommodation of Access to Indian Sacred Sites (61 FR 26771)*, was signed on May 24, 1996. This Order directs land managing agencies to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites. EO 13084, *Consultation and Coordination with Indian Tribal Governments (63 FR 27655)*, was signed on May 14, 1998. This was later revoked and replaced with EO 13175, *Consultation and Coordination with Indian Tribal Governments (65 FR 67249)*, which was signed on November 6, 2000. This Order requires agencies to establish regular and meaningful consultation with tribal officials in the development of policies that have tribal implications. The DOE revised its *Tribal Government Policy* in early 2000 to include EOs 13007 and 13084; however, it was signed into policy before EO 13175 was established.

3.2.1.4 Consequence Analysis

The 1996 NTS EIS projected that impacts would occur to cultural resources, and that the exact nature and significance of those impacts would

not be fully understood until cultural resource inventories and consultation with American Indian tribes were conducted for the specific projects. The 1996 NTS EIS also proposed mitigation measures for any project that would adversely affect a significant cultural resource. Many of the proposed NTS future missions and facilities would be located in existing facilities or built in areas that have been previously disturbed, and thereby are not likely to impact cultural resources. However, some ground disturbance from construction or operations would occur in previously undisturbed areas. Direct impacts to cultural resources may result from construction of new facilities or infrastructure, improvements to existing facilities or infrastructure, and implementation of training activities. Indirect impacts such as vandalism, artifact collection, or inadvertent damage could result from improved access into project areas. These impacts are consistent with, and within the bounds of, those described for Alternative 3 in the 1996 NTS EIS.

NNSA/NSO has and will continue to follow DOE policy and legislation that require responsible agencies to identify and take into consideration the effects a project may have on cultural resources. If adverse effects to significant resources would occur as a result of a project, NNSA/NSO would continue to follow the mitigation measures as described in the 1996 NTS EIS and reiterated in the *Cultural Resource Management Plan for the Nevada Test Site* (DOE 1999). By following these procedures, the impacts projected for proposed future missions and activities would not exceed the envelope of consequences established in the 1996 NTS EIS. Therefore, no supplement of the 1996 NTS EIS is needed for cultural resources.

3.2.2 BIOLOGICAL RESOURCES

3.2.2.1 Introduction

The July 2002 *Supplement Analysis for the Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada* (NNSA 2002) evaluated an array of what were then new or modified projects and information. The findings presented in that analysis concluded that a supplemental EIS was not needed. Since the 2002 SA is still timely and accurate the following section reiterates the 2002 SA Biological resources section with minor changes. A biological evaluation specific to the newly proposed projects and activities is then presented followed by the conclusions that are exclusive to the projects and activities addressed by this SA.

3.2.2.2 2002 SA Evaluation

The NTS EIS and associated Record of Decision addressed the potential disturbance of 15,600 acres of land (DOE 1996). In addition, higher levels of human activity were identified, associated with construction activities, operations, transportation, etc. The NTS analyzed a number of potential impacts to biological resources, including:

- Noise-related disturbance of wildlife
- Disturbance of wildlife from land clearing, excavating, filling, and replanting vegetation
- Exposure of wildlife to contaminants in excavated soils and open evaporative tanks of liquid waste treatment systems
- Destruction of wildlife habitat
- Mortality of small mammals and ground-nesting birds from land clearing and site preparation for new facilities
- Mortality of wildlife from vehicle traffic
- Displacement of individual animals (fleeing construction sites)
- Disruption of normal activities and daily/seasonal movements

Although potential impacts to a variety of wildlife types (reptiles, birds, and mammals) were assessed in the NTS EIS, potential impacts to the desert tortoise received particular emphasis because it is the resident species on the NTS that is protected as threatened under the Endangered Species Act.

The desert tortoise, although uncommon, occurs across the southern approximately one-third of

the NTS, in Areas 5, 6, 11, 14, 22, 23, 25, 26, and 27 (DOE 1996). In August 1996, the U.S. Fish and Wildlife Service (FWS) issued a final Biological Opinion for the desert tortoise on the NTS (FWS 1996). The Biological Opinion concluded that activities described in the NTS EIS were not likely to jeopardize the continued existence of the Mojave population of the species and that no critical habitat would be destroyed or adversely modified. In order to protect the desert tortoise population at the NTS, the Biological Opinion contained terms and conditions that must be followed when conducting work within the range of the species on the NTS.

The Desert Tortoise Compliance task of the Environmental Monitoring and Compliance (EMAC) program was developed to implement the terms and conditions of the Opinion, to document compliance actions taken by NNSA/NSO, and to assist NNSA/NSO in FWS consultations. The terms and conditions that were implemented for NNSA/NSO by the Management and Operating (M&O) Contractor Bechtel Nevada staff biologists in FY 2001 included: (1) conducting clearance surveys at project sites within 24 hours from the start of project construction, (2) ensuring that environmental monitors are on-site during heavy equipment operation, and (3) preparing an annual compliance report submitted to the FWS (BN 2001).

Changes in the biological resources baseline since 1996

The ecological communities of the NTS have changed very little since issuance of the 1996 NTS EIS. There has been land disturbance associated with new facility and infrastructure development, waste management, and environmental restoration, but these activities have affected relatively small amounts of land compared to the total site acreage (NNSA 2002). Many of the areas disturbed were within or adjacent to existing facility areas, areas with little or no native vegetation or wildlife. Other areas were disturbed in the course of site characterization or remediation and, prior to remediation, offered only marginal wildlife habitat.

Since 1996, NNSA/NSO has expended considerable effort identifying, mapping, and monitoring the health and viability of sensitive species. The list has grown to include wild horses, raptors, bats, game animals, and fur-bearing animals, all indicators of the health of NTS ecosystems. NNSA/NSO now conducts biological surveys at proposed NTS project sites for 13 plant, 2 reptile, 12 bird, and 18 mammal species that are protected under state or federal regulations and known to occur on or adjacent to the NTS (BN 2001). These include species listed by the FWS; species formerly listed by the FWS; species proposed for listing by the FWS; species that the FWS regards as "of concern;" species protected under the Bald and Golden Eagle Act, the Migratory Bird Treaty Act, or the Wild and Free-roaming Horses and Burros Act; game species whose harvest is regulated by the state of Nevada; and fur-bearing species whose harvest is regulated by the state of Nevada. Although the list of species that are monitored and protected on the NTS has grown longer, the number of NTS species protected under the Endangered Species Act (ESA) has actually gotten shorter since 1996, as several species were removed from the candidate list in 1997 (*62 FR 49397*) and the peregrine falcon was de-listed in 1999 (*64 FR 46541*).

No new threatened, endangered, or candidate species have been discovered on the NTS since issuance of the 1996 NTS EIS, but more is known about the ecology (distribution, abundance, recruitment, preferred habitat) of previously identified populations as a result of the EMAC Program. More is also known about a number of species that are not threatened or endangered, but are protected by NNSA/NSO as part of its commitment to the principles of ecosystem management and natural resource stewardship (DOE 1998).

The list of permanent water sources (seeps, springs, and impoundments), important contributors to biological diversity on the NTS, has also expanded since the 1996 NTS EIS was issued. The 1996 NTS EIS identified 10 springs

and 23 manmade ponds and impoundments. The EMAC Program currently monitors the health of 12 wetlands (seeps and springs) and 91 man-made water sources (sumps, treatment ponds, well ponds) (BN 2001). Wetlands are visited on a regular basis to ensure that they are not encroached on or degraded by NTS operations. Man-made water sources are monitored to assess their use by wildlife and, in the event that they are being used, to determine if mitigation measures are necessary to prevent

potential impacts of proposed projects and programs on those ecosystems.

The EMAC Program ensures that the biological resources of the NTS are inventoried, monitored, and protected, consistent with the goals of the 1998 NTS RMP (DOE 1998), which grew out of the "framework" for the RMP outlined in Volume 2 of the 1996 NTS EIS. The major elements of the EMAC Program, as defined in the RMP, include (1) compliance with the

personnel, to suggesting times of day or year in which construction activity should be conducted to minimize disturbance to a particular roosting, denning, or nesting area.

Conclusions

The conclusions of the 1996 NTS EIS remain valid with respect to biological resources. The analysis was conservative, meaning that impacts have been and will continue to be less severe than those described in the EIS. This stems from the fact that fewer new industrial facilities have been built than were planned. Further, the EMAC Program, elements of which grew out of the 1996 NTS EIS (see Chapter 7, Mitigation Measures), has effectively reduced impacts to biological resources by identifying and monitoring sensitive resources, surveying sites being considered for development (pre-activity surveys) to ensure that sensitive resources will not be affected, and by follow-up monitoring of developed sites to gauge the degree to which biological resources have been affected.

3.2.2.3 2003 Proposed Projects

While many projects are still in the preliminary design stages current information (see Table 2.3-1) conservatively indicates (overestimates) that approximately 230 acres of land (habitat) may be needed for facility construction and operation. Approximately 400 acres of land (habitat) is required for new roadway construction and use. Undisturbed land

Because of the estimated acreage potentially effected by proposed facilities, utilization of lands already in close proximity to a built environment, and use of previously disturbed lands flora and fauna impacts are bounded by the 1996 EIS. Similarly, construction activity impacts are also bounded by the 1996 EIS.

However, while the impacts from the proposed projects may be similar to and bounded by the 1996 EIS, project specific biological surveys, biotic evaluations, potential impact mitigations, and normal regulatory compliance procedures would continue to be conducted (i.e., compliance with the Endangered Species Act) on project-by-project bases.

3.2.3 LAND USE

The Federal Government manages more than 85 percent of the land in Nevada (93,000 square miles). Most of this land is under the control of the Bureau of Land Management (BLM) (an agency of the U.S. Department of the Interior), the U.S. Department of Defense (DoD), or the DOE. The remainder of the federally managed land is primarily under the jurisdiction of the U.S. Forest Service (an agency of the U.S. Department of Agriculture), with smaller areas under the control of the National Park Service and the Bureau of Reclamation (both of the U.S. Department of the Interior). Approximately 2,000 square miles are American Indian lands. Table 3-1 summarizes current Nevada land

Table 3-1. Nevada land areas (square miles) and controlling authorities.[a]

Authority	Approximate Area	Percentage[b]
State, local, county, or private	16,216	15
Bureau of Land Management	74,904	68
Department of Defense	5,019	5
Department of Energy	1,375	1
Other federal authorities	10,038	9
American Indian tribes	1,931	2

a. Sources: CRWMS M&O 1999; USAF 1999; DOI 2000.
b. Percentages calculated from values prior to rounding.

Force. Additionally, it removed land that had been previously assigned to the DOE. In general, the functional size of the NTS did not change that much. What did change was that the NTS is no longer operating under permit from the U.S. Air Force for approximately 112,000 acres.

The NNSA/NSO and the Office of Repository Development have a management agreement that allows the use of about 90 square miles of NTS land for site characterization activities. The Land Facility Use Management Policy under the Memorandum of Agreement provides for protection of this land. A Final EIS was published by DOE in February 2002 (DOE 2002), which analyzed the environmental impacts of constructing and operating (including transportation), monitoring, and eventually closing a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain in Nevada. Yucca Mountain is awaiting final land withdrawal from Congress.

The NTS is surrounded by other federal lands. It is bordered by the NTTR to the north, east, and west and by BLM land to the south and southwest. The NTS is located in Nye County, Nevada. Land uses in Nye County include southeast, and Hiko and Alamo to the northeast. The nearest population centers are Amargosa Valley, Indian Springs, Beatty, and Pahrump. These are all rural communities. Amargosa Valley is closest (two miles) to the NTS. Las Vegas, the closest major metropolitan area, is located about 65 miles southeast of the NTS.

Because there is currently no public access to NTS lands, there are no anticipated additional impacts resulting from controlled access to the NTS for current or planned projects. Impacts to American Indian culture resulting from limited access are explained in Section 3.2.1.

Summary

There have been no proposed changes or additions to the projects outlined in the 1996 EIS with the exception of the potential land use increase by the YMP that would create significant land use issues. The NNSA/NSO and the Office of Repository Development have a management agreement that allows the use of about 90 square miles of NTS land for site characterization activities. The Land Facility Use Management Policy under the Memorandum of Agreement provides for protection of this land. The facility modifications/new construction changes to the

Figure 3-2. NTS and surrounding land use.

3.2.4 VISUAL RESOURCES

Visual resources include natural and man-made physical features that give a particular landscape its character and value. The feature categories that form the overall impression a viewer receives of an area include land form, vegetation, water, color, adjacent scenery, rarity, and man-made (cultural) modifications (DOE 1996). Criteria used in this visual resources analysis include scenic quality, visual sensitivity, and distance and/or visibility zones from key public viewpoints.

The scenic quality of the NTS ranges from

3.2.5 SOCIOECONOMICS

For socioeconomic analysis purposes, the region of influence is defined as the area in which the principal direct and secondary socioeconomic effects of site actions are likely to occur and are expected to be of the most consequence for local jurisdictions. The region of influence for this SA is comprised of Nye and Clark Counties, Nevada. The region of influence includes most of the residential distribution of NNSA/NSO employees, its contractor personnel, and supporting government agencies. It also encompasses the probable location of future on- and off-site operations and indirect economic

3.2.5.2 Employment

Table 3-2 shows the NTS employment trends from 1996 through 2002. During those years, employment had its largest average annual growth in 2002 at 6.8 percent and its lowest drop in employment in 1997 of -10.2 percent. In 2002, the average annual employment data was 3,838.

The 1996 NTS EIS predicted a total NTS employment of 13,294 full-time-equivalent positions, of which 4,000 were assumed to be employed at the "large, heavy-industrial facility." For National Center for Combating Terrorism (NCCT) construction project activities, the existing NTS base of construction employees would be used plus an estimated 20 additional employees until 2009. From an operational perspective, it is assumed that increases in employment would be directly related to the amount of work to be performed at the NTS in support of combating terrorism activities. Existing and future work is dependent upon a number of constraints which include funding for NCCT construction projects; customers' operational requirements (including the ability to accommodate quick turnaround schedules in support of DoD and other government agencies); flexibility to integrate training/testing activities with multiple customers; and future (fiscal year [FY] 2004 and beyond) political decisions related to homeland security programmatic shifts and changes in priorities.

Table 3-2. NTS employment trends (1996 - 2002).

Year	Employment
1996	3,659
1997	3,285
1998	3,334
1999	3,395
2000	3,471
2001	3,593
2002	3,838

Source: TtNUS 2003.

The Department of Homeland Security and/or other customers requiring new and/or expanded facilities could add an additional 20 construction employees until 2009. It is anticipated that the number of employees performing operational activities at the NTS would increase due to national security priorities associated with homeland security and defense. Although exact numbers cannot be defined for FY 2004 and beyond, it is estimated that an additional 25 employees would be hired per year through FY 2008. However, in the event that programmatic shifts and changes in priorities occur, this number could remain stable, increase, or decrease depending on future funding.

Overall, the estimated increase in NTS employment from all terrorism-related NTS missions, facilities, and projects would result in a total NTS employment level that is well within that presented and analyzed in the 1996 NTS EIS.

In 2002, the estimated employment in Clark County was about 750,000 (NDETR 2003). This constituted 98 percent of the regional employment and about 71 percent of the State employment. During the same year, Nye County had an employment base of about 16,000 (NDETR 2003).

3.2.5.3 Summary

Changes in NTS employment due to the combating terrorism mission would result in the addition of a small number of employees,

compared to the total employment in the region of influence, and would have only a small impact on the total employment in the region of influence.

3.2.6 ENVIRONMENTAL JUSTICE

The 1996 NTS EIS presented detailed information on demographic characteristics of the three-County (Clark, Lincoln, Nye) region of influence based on an analysis of census block groups, which are subsets of census tracts that generally contain 250 to 550 housing units. The region of influence was chosen to incorporate the areas surrounding the NTS and RSL that would have the potential to be impacted by any of the resource areas analyzed. The demographic information included the total population of the region of influence, numbers in minority communities, and numbers of low-income populations, all based on 1990 U.S. Census Bureau data.

The total population of the three-County area was 763,015 in 1990 (DOE 1996). The 1990 census data showed that Clark County was subdivided into 318 census block groups, of which 91 were made up of low-income populations and 57 constituted minority communities (DOE 1996). Lincoln County contained eight census block groups, none of which represented minority or low-income populations. Nye County was subdivided into 25 census block groups, none with minority communities and one with a low-income population.

The 1996 NTS EIS indicated that there would be impacts to American Indian groups with traditional ties to the NTS and surrounding areas. Impacts included continued restricted access to culturally significant areas, the potential for unauthorized artifact collection, and the potential for "culturally inappropriate impacts to minority or low-income populations were identified in the EIS.

3.2.6.1 Update of population characteristics

At present, updated (2000) U.S. Census Bureau data are available for total populations and minority populations within a given census block group, census tract, or county in Nevada. However, low-income population data are not yet available at the time of this analysis. The total population of the three-County area was 1,412,415 in 2000, almost doubling since 1990 SCB 2000). Virtually all of this population increase was due to population growth in Las Vegas and Clark County. Although the population of Clark County grew 85.5 percent between 1990 and 2000, the percentage of minority census block groups increased very little, from 17.9 percent (57 of 318 blocks) to 19.1 percent (159 of 832 blocks). The 2000 census data showed four census block groups in Lincoln County, none of which were made up of minority populations. Nye County was comprised of 22 census block groups, none of which were minority populations.

Based on 2000 census data, there has been dramatic population growth in the three-County region of influence in recent years, but no marked changes in the locations or proportions of census block groups containing minority communities. All minority populations identified in 1990 and 2000 were in and around the City of Las Vegas. As noted before, data on low-income populations are not available from the U.S. Census Bureau at the time of this analysis.

3.2.6.2 Conclusion

Although there has been dramatic population growth in the region of influence (associated with the economic boom in Las Vegas), the

NTS EIS, health risks and potential health effects from NTS operations were determined to be small and well within regulatory limits. In this analysis, it has been determined that impacts to workers and off-site populations would be less severe than those described in the EIS. The American Indian perception of impacts is explained in the 1996 NTS EIS, Section 4.2.12.2, "Environmental Justice." As, a

construction workers are expected by the year 2008. The total number workers is projected to peak at nearly 4,000. This value is well below the 13,294 workers projected in the 1996 NTS EIS.

However, another consideration for onsite traffic is the estimated 20,000 emergency responders expected to visit the NTS per year by the year

3.2.7.2 Off-site traffic

In the 1996 NTS EIS, the analysis of off-site traffic is presented as average daily trips assigned to nearby roadway segments. Changes in the level of service designations were calculated based on increased traffic from the various alternatives. Given the extensive growth in the Las Vegas area since 1996, the marked deterioration in the level of service for roads in the region (irrespective of NTS activities), and the small magnitude of the NTS contribution to regional traffic problems, a re-examination of level of service designations is not indicated from the screening review.

As reported in Section 3.2.7.1 above, NNSA/NSO estimates that the sum total of NTS employees and emergency responder and military trainees will be less than that projected under the 1996 NTS EIS. Shipments of materials in support of the NTS mission and waste resulting from NTS operations are also projected to be less than analyzed in 1996 (see Section 3.2.7.3). Accordingly, the NTS contribution to off-site traffic is expected to be within the bounds of that analyzed in the 1996 NTS EIS.

3.2.7.3 Radiological Transportation

As described in the July 2002 SA (NNSA 2002), NTS radiological transportation is expected to be of two general types: materials shipped under programs that support the NTS mission and waste shipped for offsite disposal. Mission-related radioactive materials shipments under the activities proposed in Table 2.3-1 would be of small quantities, infrequent, and well within the envelope of the 1996 NTS EIS. Therefore, no reanalysis of radiological transportation impacts for mission-related programs is needed.

Radiological waste quantities for the scope of this SA are reported in Table 3-4 and compared with the projections analyzed in the 1996 NTS EIS. The quantity of wastes, and consequently the number of shipments, are small compared to overall radiological waste shipments projected in the 1996 NTS EIS. The July 2002 SA also examined potential radiological waste shipments to the NTS (such as low-level waste), concluding that shipment volumes and numbers are expected to decrease from original projections.

3.2.7.4 Summary

Based on the above discussions, NNSA/NSO concludes that, with the possible exception of on-site construction traffic, there is no evidence that either changing environmental conditions or increased NTS missions would cause traffic and transportation impacts in the planned future that would exceed the limits established in the 1996 NTS EIS. The construction traffic would be temporary over the period of construction activities. The decrease in numbers of projected radiological shipments would be reflected in similar decreases in health effects and traffic incidents. Therefore, detailed analysis of traffic and transportation is not necessary and preparation of a supplemental EIS is not warranted.

3.2.8 GROUNDWATER

There are two major types of effects possible on groundwater: reductions in water resource availability and impacts on water quality. Each of these potential effects is discussed below.

3.2.8.1 Groundwater Use

NNSA/NSO routinely withdraws groundwater at the NTS and other NNSA/NSO-administered lands in Nevada. These groundwater withdrawals could result in localized availability concerns, including a lowering of water levels, changes in groundwater flow directions, and a reduction in the quantity of water available to other users. If large-scale groundwater withdrawals occur, the impacts could increase to include reductions in off-site spring discharge rates, water quality impairment, and reduced underflow to downgradient areas.

The impacts to groundwater from continuing operations are studied and reported annually (DOE 2000a). A decline in site water usage due to the moratorium on nuclear testing has continued. Peak annual water use at the NTS

was 4.2×10^6 cubic meters in 1989 (DOE 1996); by 1999, water use had declined to 8.3×10^5 cubic meters (DOE 2000a). Year 2000 water use was approximately the same as 1999 (USGS 2001).

The potential activities listed in Table 2.3-1 would result in the use of approximately 70,265 cubic meters of water for construction use (primarily for dust suppression) over the entire period from 2004 through 2009. Assuming a constant level of construction activity over that period results in a average groundwater use of 11,710 cubic meters per year. Compared to the current level of groundwater use, the projected water use for combating terrorism activities would have no impact on groundwater availability at NTS.

3.2.8.2 Groundwater Contamination

The grading of soils and other construction actions could alter the quantity and quality of runoff. However, because of the arid conditions and great depth to groundwater, water (and/or contaminants) that enter the surface and shallow subsurface on the NTS would generally not percolate downward toward the water table (DOE 2000a).

No adverse impacts to groundwater quality have resulted from operations since 1996. All on-site supply wells met current National Primary Drinking Waster Standards. The Routine Radiological Environmental Monitoring Plan monitors 59 off-site and 54 on-site monitoring wells. The Underground Test Area (UGTA) project has drilled 24 new wells since 1996. Twenty of these wells were drilled between Pahute Mesa and Oasis Valley, to the southwest of Pahute Mesa, and 4 were drilled in Frenchman Flat on the NTS. Monitoring results of NNSA/NSO's Routine Radiological Environmental Monitoring Program of the new wells drilled by the UGTA Project confirm that no contamination has been detected off of the NTS.

Tritium, because of its mobility in water, is monitored routinely; concentrations continue to decline (DOE 2000a). The inventory of radionuclides in groundwater was updated when tritium, cobalt, cesium, europium, and plutonium contamination was found near the Tybo site. The plutonium was found to be from the nearby Benham test (Kersting et al., 1999), located 0.9 mile north of Tybo. The Tybo test is located 1.1 miles from the NTTR, and 13.7 miles from the nearest publicly accessible land.

The UGTA Project is evaluating the extent of groundwater contamination due to past underground nuclear testing. This is being accomplished through the collection of data and developing groundwater flow and transport models to estimate the maximum extent of contaminant migration. The work of the UGTA project is being conducted under the oversight of the Nevada Division of Environmental Protection as part of the Federal Facility Agreement and Consent Order.

Monitoring at active waste management sites indicated no impacts to groundwater. No chemical or radioactive constituents attributable to either weapons testing or waste disposal have been detected at the Mixed Low-Level Waste (MLLW) or Low-Level Waste (LLW) disposal sites, RWMS-3 and 5 (DOE 2000b). Under current conditions, the recharge to groundwater at these sites is zero; vadose zone monitoring has confirmed this (DOE 2000b). Results of groundwater monitoring at the active sewage lagoons indicate that all measured parameters were below the limits set in the discharge permit (DOE 2000b).

The NTS has about 1,300 wells and boreholes that are no longer used and are not candidates for future use. These holes could serve as a pathway for surface contaminants to reach subsurface strata, or for contaminated fluids in a well to migrate vertically to non-contaminated zones. Increased funding is being sought to expedite the process of properly abandoning and plugging these unused boreholes and wells.

The projects listed in Table 2.3-1 would have no impact on groundwater quality at NTS and thus, the conclusions of the 1996 NTS EIS remain valid for groundwater quality impacts.

3.2.9 AIR RESOURCES

An air quality screening analysis was conducted for construction activities that are expected to be associated with future potential projects at the NTS. The list of potential NTS construction projects are listed in Table 2.3-1. The screening analysis was conducted to estimate the total emissions associated with the construction activities and then determine if the air quality impact of these activities are within the scope of the impact analysis of the 1996 NTS EIS (DOE 1996).

The air quality screening analysis estimated emissions for criteria pollutants. The criteria pollutants evaluated included carbon monoxide (CO), nitrogen oxides (NO_x) and particulate matter having an aerodynamic diameter equal to or less than 10 micrometers (PM_{10}). These pollutants were selected for evaluation because they are typically associated with heavy construction activities and mobile sources (vehicle emissions). For example, particulate matter (PM_{10}) emissions are generated as a result of construction activities, such as land clearing, site preparation, general construction and construction vehicle travel over unpaved roads. In addition, exhaust emissions from heavy construction equipment and other associated construction vehicles include CO and NO_x.

The emissions of PM_{10}, CO, and NO_x were estimated on the basis of U. S. Environmental Protection Agency (U.S. EPA) emission factors (EPA 1995, 2000, 2002) and project specific information provided in Table 2.3-1. Emission factors are representative values that attempt to relate the quantity of pollutant released to the atmosphere with an activity. These factors are usually expressed as the mass of pollutant emitted divided by a unit weight, volume, distance or duration of the activity. Emission factors are considered appropriate for making source-specific emission estimates for area wide emissions.

In the case of heavy construction activities, significant quantities of "fugitive dust" can arise from the mechanical disturbance of soil materials and vehicle travel on unpaved roads. For this screening analysis, construction site emissions were categorized into component operations such as grading, loading, and unloading in order to provide a representative estimate of emissions. Particulate matter emission factors for construction activities at NTS were based on three principal construction activities: (1) land clearing; (2) site preparation (earth moving); and (3) general construction, as well as vehicle travel on unpaved roads. Construction specific emission factors were used to estimate dust loading for each principal activity. A conservative approach was taken in assuming that land clearing applied to all construction sites. Emission estimates considered general land clearing and the loading/unloading of land debris material. Site preparation emissions were based on bulldozing of the land disturbed and loading/unloading of soil and gravel materials and the acreage of land to be disturbed as listed in Table 2.3-1. General construction emission estimates were based solely on vehicular traffic on unpaved roads.

The emission factors equations for specific construction activities include parameters to estimate size-specific particulate such as PM10 and the application of water to control road emissions. Some emission factor variables, such as silt content, moisture content, and mean vehicle weight (heavy construction vehicles) were estimated on the basis of U.S. EPA guidance, professional judgment, and information supplied in Table 2.3-1. Material handling, onsite construction hours, and vehicle mile traveled per project were assumed to be proportional to the amount of land disturbed listed in Table 2.3-1. Other variables, such as mean annual wind speed were based on information supplied in the 1996 NTS EIS (DOE 1996).

Vehicle exhaust emissions of CO and NO_x were based on the assumption that the construction vehicle fleet would consist of heavy construction excavators/bull dozers, light duty gasoline powered trucks, and light duty diesel powered trucks. Emissions for these vehicle types were estimated using U.S. EPA emissions factors for nonroad (heavy construction) (EPA 1995) and on-road engine (EPA 2002) (light duty gasoline

and diesel powered truck) types. Estimates of vehicle miles traveled were proportionally based on the size of the project area to be disturbed and the equivalent miles of 36-foot wide roads provided in Table 2.3-1.

The calculated emissions for all of the potential construction activities and mobile sources are listed in Table 2.3-1 in comparison to the total construction emissions and mobile source emissions for Alternative 3 (Expanded Use Alternative) listed in Table 5.3.12 of the 1996 NTS EIS. It was assumed that all potential projects would take place onsite at NTS and RSL. Table 3-3 indicates that total construction and mobile source activity related emissions for the criteria pollutants PM_{10}, CO, and NO_x are well within the envelope of projected onsite emissions reported in the 1996 NTS EIS.

3.2.10 GEOLOGY AND SOILS

The scope of past, current, and expected impacts to geology and soils at the NTS established in the 1996 NTS EIS was extensive. All of the projects and changes to operations discussed in Chapter 2 would clearly be within the envelope of impacts evaluated in the EIS, or would have little or no effect on geology and soils.

A total of 230 acres of land would be disturbed as a result of implementing all of the projects and operations discussed in Chapter 2. Of this total, 126 acres would involve previously disturbed soils, 104 acres would involve undisturbed soils. In addition, 400 acres of land would be disturbed as part of building or upgrading roads associated with the subject projects and operations. Using the same ratio for disturbed versus undisturbed land, approximate 187 acres of undisturbed land would be involved with road building activities.

Geologic Resources

Of the geologic resources discussed in the 1996 NTS EIS, only gravel and other aggregates would be impacted by the projects and operations discussed in Chapter 2. An estimated 330,000 cubic yards of aggregates would be used in the construction of the projects and the associated roads. This use would likely require some expansion of the current on site aggregate supply operations. However, this amount of aggregate would not impact the over supply of aggregate resources on-site.

Table 3-3. Comparison of Criteria Pollutant Emissions for Potential Construction Related Activities To Criteria Pollutant Emissions Reported In the 1996 NTS EIS.

	Construction Fugitive Dust Emissions (tons/yr)	Mobile Source Emissions (tons/yr)	
Program	PM_{10}	Carbon Monoxide (CO)	Nitrogen Oxides (NO_x)
Alternative 3 Onsite	603.20	371.1	66.09
Table 2.3-1 Potential Activities[a]	156.18	7.51	15.38

a. All potential activities are assumed to take place onsite at NTS.

3.2.11 WASTE MANAGEMENT

The waste management assessment focused on NTS's capacity to manage the types and amounts of waste expected to be generated from activities to combat terrorism and to construct support facilities as described in Section 2.0. First, the types of wastes expected from these activities and facilities were compared to those analyzed in the 1996 NTS EIS. Second, when available, the amounts of wastes projected for the additional facilities and combating terrorism activities plus the 2002 Supplement Analysis projections were compared to the 1996 NTS EIS projections to determine if any waste types exceeded the 1996 projections. For those waste types without projections, the excess waste quantity up to the 1996 NTS EIS analysis

bounds was reviewed for a qualitative assessment.

Construction of the facilities and existing facility upgrades as presented in Table 2.3-1 is expected to generate hazardous and nonhazardous wastes and wastewater (BN 2003). The construction activities are not expected to generate radioactive wastes. The operations phase of the combating terrorism activities is expected to generate nonhazardous waste and wastewater and has the potential to generate hazardous and low-level radioactive wastes (BN 2003). The 1996 NTS EIS addressed all these waste types.

Minor amounts of hazardous waste could be generated during construction and facility upgrades (BN 2003). The hazardous waste would result from use of solvents, paints, enamels, and epoxies. Upgrades to some of the older facilities could result in the removal of asbestos debris such as insulation and ceiling or floor tiles that would be managed along with asbestos debris from existing NTS programs. Nonhazardous construction debris would include wood, soil, piping, wiring, etc. Personnel working construction and operations activities as well as trainees would also generate sanitary solid waste such as waste paper and break room and bathroom waste. NTS would recover and recycle nonhazardous construction debris and sanitary solid waste when feasible, using existing NTS material recovery and recycling programs.

During operations, radioactive waste could result from contact with surface radiological contamination present in certain NTS areas. The waste would consist of contaminated props and personal protective equipment. In addition, radioactive sealed sources would be used during training activities. The sources could also require disposal when the equipment containing the source is no longer in operating order.

Hazardous waste is not expected to be generated during operations activities; however, the potential exists for hazardous waste to be generated from the detonation of explosives used in the combating terrorism activities (BN 2003).

Table 3-4 includes waste information as presented in the 2002 Supplement Analysis for the 1996 NTS EIS and the 2002 Supplement Analysis for the expected waste types. Table 3-4 also presents the excess waste quantity up to the 1996 NTS EIS analysis bounds calculated from the differences in 1996 and 2002 waste projections. If a projection was not reported in the 1996 EIS, the waste management facility capacity was used.

Low-level radioactive waste is a potential waste stream, but is not an expected one (BN 2003). However, NTS is managing less low-level radioactive waste than projected in the 1996 EIS by 520,000 cubic meters. NTS is projected to generate 25,998 cubic meters from 2002 to 2011 (NNSA 2002) from handling other generator sites' waste as well as contact with surface contamination in certain areas at NTS. The excess waste volume subjected to impact analysis in 1996 is 20 times the NTS generation rate. Therefore, the impact analysis performed in 1996 is considered sufficient with regard to this potential waste stream.

The 1996 EIS did not analyze a specific hazardous waste projection for impacts. Instead the 1996 EIS examined NTS's ability to operate within the storage limit set in the final RCRA permit, 61.6 cubic meters. NTS has and can maintain this storage limitation even with the addition of the minor amounts of hazardous waste excepted during construction activities and the potential to generate hazardous waste during operations by continuing its practice of shipped hazardous waste to offsite treatment, storage, and disposal facilities from permitted storage as well as directly from generation areas. Therefore, the 1996 EIS analysis is considered sufficient.

The 1996 EIS analyzed the impacts of nonhazardous waste by specific subgroups, hydrocarbon-contaminated waste, inert debris, and sanitary solid waste. Construction and/or operations would generate all three of these subgroups, but the volume of wastes were not projected since these wastes are dependent on the yet to be determined requirements of the organizations that would utilize NTS for

combating terrorism activities. As shown in Table 3-4, there is excess waste volume that was subjected to impact analysis in 1996 for hydrocarbon-contaminated waste and inert debris that are expected from construction activities. There is also excess capacity available at the NTS landfills receiving these types of waste.

There is not excess waste volume that was subjected to impact analysis in 1996 for sanitary solid waste. However, excess capacity is available in the NTS sanitary waste landfill. Only 165 permanent personnel (BN 2003), an increase of less than 5 percent over the 2001 employee level provided in the 2002

Table 3-4. Waste information from the 1996 NTS EIS and 2002 Supplement Analysis.[a]

	1996 NTS EIS		2002 Supplement Analysis			
Waste type	**Capacity**	**Projection**	**Capacity**	**Projection**	**Percent usage (excess capacity)**	**Excess up to 1996 NTS EIS analysis bounds**
Low-level radioactive	1,000,000	1,041,422	3,800,000	520,000	14 (86)	520,000
Hazardous (storage)	210	Not reported	61.6	650	(b)	(b)
Explosive hazardous (treatment)	1873 kg/yr	Not reported	45.4 kg/hr	1,500 kg/yr	34 hours	343 kg/yr
Hydrocarbon	42,000	Not Reported	92,000	11,000	12 (88)	31,000
Inert debris	990,000	95,000	660,000	93,000	14 (86)	2,000
Sanitary solid	450,000	18,000	210,000	35,000	16 (84)	None

a. Quantities given in cubic meters unless otherwise noted. To convert cubic meters to cubic feet multiply by 35.31.
b. The RCRA permit limits storage to 61.6 cubic meters at any one time. Hazardous waste is shipped to offsite permitted facility for treatment/disposal as needed.

Supplement Analysis (NNSA 2002), are expected onsite for construction and operations activities. Sanitary solid waste would also be generated by individuals attending training at NTS for a limited number of days. As shown by Table 3-4, NTS also has excess capacity at its landfills that receive these types of waste. Moreover, the 1996 EIS Expanded Use Alternative, the alternative selected for implementation, included construction of a new landfill for sanitary waste.

Based on excess waste volume that was subjected to impact analysis in the 1996 EIS, excess capacity at the NTS hydrocarbon and inert waste landfills, and the inclusion of a new sanitary landfill in the 1996 EIS impacts analysis, the 1996 NTS EIS impacts analysis is considered sufficient for all nonhazardous waste types.

As in 1996, wastewater at NTS would be disposed either in a septic or lagoon system during FY2004 to FY2009. The septic systems would receive sanitary sewage only. The lagoons would receive sanitary sewage and industrial wastewater. At areas not serviced by a permanent wastewater system, portable sanitary units would be provided. Employment is expected to increase by 165 during the peak year (BN 2003), resulting in an estimated 500,000 gallons during the peak year of sanitary sewage, 2.7 percent increase over 2001 sewage flows. Average daily flows in 2001 at NTS were 50,800 gallons (Matthews 2001) or 18.5 million gallons per year.

Sanitary sewage would also be generated by individuals attending training at NTS for a limited number of days. In addition, wastewater could be generated by construction activities and potentially during operations from

decontamination operations and laboratory wastes. As indicated in Section 2.4 of this Supplement Analysis, if the existing wastewater facilities cannot accommodate increased flows resulting from terrorism combat activities, they would be augmented.

3.2.12 OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY

As discussed in the 1996 NTS EIS, the potential for activities at the NTS to impact the health and safety of the general public is minimized by a combination of the remote location of the NTS, the sparse population surrounding it, and a comprehensive program of administrative and design controls. The health and safety of NTS workers and Work for Others participants is protected by adherence to the requirements of federal and state law, DOE and NNSA/NSO orders, and activity-specific work permitting and control procedures. Workers are protected from the specific hazards associated with their jobs by training, monitoring the workplace environment, using appropriate personal protective equipment, and using administrative controls to limit their exposures to contaminants.

Work under the purview of DOE at the NTS is performed in accordance with the safety and health requirements of the Occupational Safety and Health Administration, as codified in Title 29 CFR Parts 1910 and 1926. In addition, DOE and NNSA have established a system of orders, policies, programs, and guidelines designed to ensure protection of worker and public health and safety. Work by the military is performed under the Department of Defense's policies and procedures. NNSA/NSO's management and operations contractor for the NTS, BN, also has a system of company directives and procedures

Briefly, each Program/Project Manager must complete an REOP application for proposed work. The application package includes a detailed hazard analysis and identifies appropriate levels of protection to mitigate risks. The package is reviewed by appropriate NNSA/NSO subject matter experts (i.e., electrical safety, mine safety, explosive safety, waste management, biologists, radiation safety, etc.), based on potential levels of risk, to ensure that all hazards and appropriate measures for health, safety, and environmental protection are identified.

The screening review presented in the 2002 SA (NNSA 2002) for occupational safety and health risks compared the operational status of current NTS missions to those missions (actual and projected) evaluated in the 1996 NTS EIS. The 1996 NTS EIS concluded that worker health risks related to NTS activities were primarily the result of occupational safety hazards in the workplace. The greatest potential for these types of events were associated with waste handling, construction, environmental restoration, and decontamination and demolition activities. The 2002 review of current and anticipated NTS programs and projects completed since the 1996 NTS EIS, was performed to determine if increases in higher risk activities had occurred. The number of new missions identified did not represent a significant increase in projects beyond those reported in the 1996 NTS EIS.

Therefore, NNSA concluded that there is no evidence that current anticipated changes in NTS missions would result in impacts to future occupational safety and health risks that would exceed those reported in the 1996 NTS EIS. As shown in Section 3.2.5, the estimated increase in

detailed analysis of occupational safety and health risks is not warranted and the issue of occupational safety and health would not precipitate a supplemental EIS.

With regard to radiation exposure to NTS workers, the exposure to any individual during routine operations would continue to be administratively maintained within current DOE limits (5 rem per year), a limit that has not changed since the 1996 NTS EIS was issued. New and existing programs involving radioactive materials are subject to design and operational reviews to ensure that doses are maintained as low as reasonably achievable (ALARA). Implementation of the ALARA programs are likely to result in further decreases in dose rates incurred by individuals, while collective doses to all radiation workers is expected to decrease as a function of both the ALARA programs and the reduction in the total number of radiation workers employed at the NTS.

Based on the estimated increase in NTS employment from all terrorism-related NTS missions, facilities, and projects, as discussed in Section 3.2.5, and the proportion of radiation workers in the workforce, it is unlikely that impacts to NTS radiation workers from routine operations will exceed the limits established in 1996 NTS EIS. Therefore, detailed analysis of occupational radiation exposure is not warranted and the issue of occupational safety and health would not precipitate a supplemental EIS.

This page intentionally left blank

CHAPTER 4.0
CONCLUSIONS

The Council on Environmental Quality regulations require that supplemental Environmental Impact Statements (EISs) be issued when "the agency makes substantial changes to the proposed action" or there are "significant new circumstances or information relevant to the environmental concerns and bearing on the proposed action or its impacts". This SA was prepared to determine whether either case applies to combating terrorism activities at NTS, such that a supplemental EIS should be prepared.

This SA evaluates whether changes from actions foreseen in 1996, plus new and modified proposals and projects, present a seriously different picture of the likely consequences of continued operation of the NTS than was presented in the 1996 NTS EIS and Record of Decision. This evaluation focused on determining whether the impacts of NNSA/NSO operations, as identified in Table 2.3-1, would be within the limits of impacts identified in the 1996 NTS EIS and, if not, whether the additional impacts would be significant.

Chapter 3 of this SA analyzed a set of new and modified proposals, and projects and other changes. Based on the analysis in this SA, NNSA/NSO has determined that there are no substantial changes to the NTS EIS or Record of Decision or significant new circumstances or information relevant to environmental concerns that would require preparation of a supplemental EIS or a new EIS.

This page intentionally left blank

CHAPTER 5.0
REFERENCES

BN (Bechtel Nevada) 2001. Ecological Monitoring and Compliance Program - Fiscal Year 2001 Report. Prepared by Bechtel Nevada, DOE/NV/11718-645, U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nevada. December.

BN (Bechtel Nevada) 2003. "Operations Data for the NTS SA," E-Mail J. Cotter (Bechtel Nevada) to W. C. Suiter (NNSA/NSO), October 27.

CRWMS M&O (Civilian Radioactive Waste Management System Management & Operating Contractor) 1999. *Environmental Baseline File for Land Use.* B00000000-01717-5705-00115 Rev. 00. Las Vegas, Nevada: CRWMS M&O.ACC:19990302.0178.

DOE (U.S. Department of Energy) 1996. *Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada*, DOE/EIS-0243, U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nevada. August.

DOE (U.S. Department of Energy) 1998. *Nevada Test Site Resource Management Plan*, DOE/NV-518, U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nevada.

DOE (U.S. Department of Energy) 2000a. *Nevada Test Site Annual Environmental Report for Calendar Year - 1999*, DOE/NV11718-463, U.S. Department of Energy, Nevada Operations Office, Las Vegas, Nevada. October.

DOE (U.S. Department of Energy) 2000b. *Nevada Test Site Resource Management Plan Annual Summary*, DOE/NV-604, U.S. Department of Energy, Nevada Operations Office, Las Vegas. January.

DOE (U.S. Department of Energy) 2002. Final Environmental Impact Statement for a Geologic Repository for Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada, DOE/EIS-0250, Yucca Mountain Site Characterization Office, Office of Civilian Radioactive Waste Management, Las Vegas, Nevada. February.

DOI (U.S. Department of the Interior) 2000. *Final Legislative Environmental Impact Statement, Timbisha Shoshone Homeland.* U.S. Department of the Interior, Timbisha, San Francisco, California Shoshone Tribe.

EPA (U.S. Environmental Protection Agency), 1995, *AP-42 Compilation of Emission Factors*, Volume I, Fifth Addition, Sections 13.2, 13.2.4, and 11.9, January.

EPA (U.S. Environmental Protection Agency), 2002, *Exhaust & Crankcase Emission Factors for Nonroad Engine Modeling - Compression Ignition*, Office of Air and Radiation, EPA420-P-02-016, NR-009b, November.

FAA (Federal Aviation Administration) 2000. *Draft Environmental Assessment for the Site Launch, Reentry, and Recovery Operations at the Kistler Launch Facility, Nevada Test Site (NTS)*, Associate Administrator for Commercial Space Transportation, Washington, D.C. April.

FWS (U.S. Fish and Wildlife Service) 1996. Final Programmatic Biological Opinion for Nevada Test Site Activities, File Number 1-5-96-F-33. U.S. Fish and Wildlife Service, Reno, Nevada. August 22.

Kersting, A. B., D. W. Efurd, D. L. Finnegan, D. J. Rokop, D. K. Smith, and J. L. Thompson 1999. *Migration of Plutonium in Groundwater at the Nevada Test Site, Nature*, Vol 397, pp. 56-59.

Matthews, P. 2001. Supplemental EIS Information. E-Mail with attachment from P. Matthews, NTS to K. Small, DOE, December 5.

NNSA (U.S. National Nuclear Security Administration) 2002. *Supplement Analysis for the Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada*, DOE/EIS-0243-SA-01, National Nuclear Security Administration, Nevada Operations Office, Las Vegas, Nevada, July.

NDETR (Nevada Department of Employment, Training & Rehabilitation) 2003. Unemployment Rates and Labor Force. Available online at http://www.nevadaworkforce.com/. Accessed October 28, 2003.

TtNUS (Tetra Tech NUS) 2003. Calculation Package – Nevada Test Site Employment for 1996 – 2002. Aiken, South Carolina. October.

USAF (U.S. Air Force) 1999. Renewal of the Nellis Air Force Range Land Withdrawal: Legislative Environmental Impact Statement. U.S. Air Force, Washington, D.C. March.

USCB (United States Census Bureau) 1990. Census 1990 DP-1. Available online at http://factfinder.census.gov/. Accessed October 27-29, 2003.

USCB (United States Census Bureau) 2000. Census 2000 GCT-PH1. Available online at http://factfinder.census.gov/. Accessed October 27, 2003.

USGS (U.S. Geological Survey) 2001. *Monthly Withdrawal at Major Production Wells at the Nevada Test Site, January through December 2000,* http://nevada.usgs.gov/doe_nv/quarterlyreports/ wu00-q4.htm, last modified May.