

DOE/IG-0566

AUDIT
REPORT

NATIONAL NUCLEAR SECURITY
ADMINISTRATION'S TEST
READINESS PROGRAM



SEPTEMBER 2002

U.S. DEPARTMENT OF ENERGY
OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDIT SERVICES



U. S. DEPARTMENT OF ENERGY
Washington, DC 20585

September 9, 2002

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman (Signed)
Inspector General

SUBJECT: INFORMATION: Audit Report on "National Nuclear Security Administration's Test Readiness Program"

BACKGROUND

Prior to 1992, the Department of Energy relied on underground testing at its Nevada Test Site to ensure the safety, reliability, and performance of the Nation's nuclear weapons. When the United States placed a moratorium on underground testing, the Department implemented a science-based Stockpile Stewardship Program, designed to certify that the weapons are safe and, if needed, will work as intended. This program is a key mission of the Department's National Nuclear Security Administration (NNSA).

In accord with the applicable Presidential Decision Directive, the United States can resume underground nuclear testing at the Nevada Test Site under certain circumstances. Such action would require a Presidential order based, for example, on the identification of a new type of weapon problem or an accumulation of uncertainties about the reliability of the nuclear stockpile. The Presidential Decision Directive mandates that the Department be prepared, on a contingency basis, to restart underground testing within a three-year window of such a decision.

We conducted this audit to determine if the Nevada Operations Office has the capability to conduct an underground nuclear test within the required timeframe if called upon to do so.

RESULTS OF THE AUDIT

Based on our review of the current status of available human and physical resources, the Department's ability to conduct an underground nuclear test within established parameters is at risk. The Nevada Operations Office and its contractor organizations have lost nearly 50 percent of their employees with testing experience in the last five years. And, a wide variety of equipment that was used in testing has become obsolete, unserviceable, or is no longer supported by the manufacturer. In addition, facilities that had once been dedicated to the testing program have been converted to other uses, mothballed, or dismantled. While the NNSA has expressed confidence that many of the aging assets could be reconstituted or replaced within the 36-month readiness lead time, both Federal and contractor officials acknowledged that this probability, absent significant new strategic investments, has decreased with the passage of time.

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We noted that the Department did not have a comprehensive plan or methodology in place to address its most significant test-related concerns. Specifically, plans were insufficient to fill key and critical positions; validate aging assets; incorporate technology advances; and, update Nuclear Explosive Safety Studies. Unless these challenges are addressed, the Department risks losing its ability to restart underground testing on a timely basis, should the need arise. The audit report included a series of recommended actions intended to help meet each of the identified challenges.

Subsequent to the conclusion of our audit fieldwork, the Nevada Operations Office issued the *Enhanced Test Readiness Cost Study*. In its report, the review team concluded that the Department's ability to maintain a test readiness posture of 24 to 36 months is "at risk" at the currently planned funding level of \$10 million per year. The review team's conclusion is consistent with the information we developed during our audit.

The Office of Inspector General has identified Stockpile Stewardship as one of the most significant challenges the Department and NNSA face. Several of our recent reports, including *The Department of Energy's Pit Production Project* (DOE/IG-0551, April 2002) and *Stockpile Surveillance Testing* (DOE/IG-0528, October 2001) emphasized the need for prompt action to address various factors with the potential to affect the stockpile. In this context, our current findings regarding readiness at the Nevada Test Site echo our earlier observations.

MANAGEMENT REACTION

NNSA generally agreed with the findings in our report regarding the status of test readiness but did not agree with some of our specific recommendations. In some instances, management suggested alternative approaches to achieving the overall goal. Management's comments are summarized beginning on page 11 and are included in their entirety as Appendix 1.

Attachment

cc: Chief of Staff
Acting Administrator, National Nuclear Security Administration
Manager, Nevada Operations Office
Director, Policy and Internal Controls Management, NA-66

NATIONAL NUCLEAR SECURITY ADMINISTRATION'S TEST READINESS PROGRAM

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Overview

INTRODUCTION AND OBJECTIVE

One of the Department of Energy's (Department) primary missions is to maintain the safety, reliability, and performance of the nuclear weapons in the Nation's stockpile. A decade ago, these tasks were accomplished by conducting underground nuclear weapons tests at the Nevada Test Site. However, since the moratorium on testing in 1992, the Department has met its mission requirements through the development and implementation of the Stockpile Stewardship Program. This program is the responsibility of the Department's National Nuclear Security Administration (NNSA).

While NNSA does not currently conduct underground nuclear tests, a Presidential Directive requires NNSA to maintain the capability to test within a two to three-year timeframe if directed to do so by the President. To maintain this state of readiness, the Nevada Operations Office (Nevada) established a Test Readiness Program.

We conducted the audit to determine if Nevada has the capability to conduct an underground nuclear test within the required timeframe.

CONCLUSIONS AND OBSERVATIONS

Nevada's ability to conduct an underground nuclear test within the specified timeframe is at risk. Specifically, key aspects of the Department's testing process and infrastructure have experienced significant degradations in the last decade, including:

- A decline in the number of employees with testing experience;
- The deterioration of necessary systems and equipment;
- The inability to keep pace with new technology; and,
- Delays in updating required safety studies.

The challenges posed by these issues were heightened because Nevada did not have a comprehensive plan to address or overcome them. If the Department becomes unable to certify that testing can resume within the 24 to 36-month window, it could eventually lose its ability to ensure weapons reliability through underground testing, should such testing become necessary.

Maintaining Underground Nuclear Testing Capability

Underground Testing

Since the last underground nuclear detonations were conducted at the Nevada Test Site, the Department has encountered a number of significant changes. These changes, including a decline in the number of employees with testing experience; the deterioration of necessary systems and equipment; the inability to keep pace with new technology; and a delay in conducting required safety studies, pose serious challenges to the Department's ability to conduct an underground nuclear test within the required timeframe.

Personnel with Testing Expertise

Nevada and its support organizations have lost nearly 50 percent of their underground nuclear test-experienced personnel in the last five years. Furthermore, almost half of the remaining employees are eligible to retire within the next five years, with the average age of experienced staff members approaching 53 years. An analysis of Nevada's 209 key and critical positions disclosed at least 36 positions that existing personnel would be unable to fill. The jobs involved include diagnostics engineers, arming and firing technologists, and nuclear performance scientists. In addition, other general support and craft personnel, not included on the key and critical list, would have to be hired when needed. As the experienced personnel pool becomes further reduced, the people qualified to fill various testing assignments will decrease.

To mitigate the loss of critical personnel, Nevada conducted training, created a "Retiree Corps," and established a mentoring program. However, many key and critical personnel have not received test-related training since the mid-1990s. Even among those who had been trained, several shared the view with us that the training was not an adequate substitution for experience gained through actual underground tests. In addition, many of the retirees that volunteered to perform mentoring duties for new employees, or to fill vacant test positions, have not been involved with the Test Readiness Program since they retired. Current documentation does not indicate what specific qualifications each individual participating in the Retiree Corps has or whether they are still capable of performing necessary duties. Finally, the mentoring program was unable to attract enough participants for the number of vacancies.

Physical Assets and Systems Upgrades

Although Nevada asserts that inventoried physical assets are available to support a resumption in testing, a wide variety of the assets have become obsolete and unserviceable. For example, the Tektronix 750A, a diagnostic tool used in imaging hardware, is no longer supported by the manufacturer and Nevada does not have anyone capable of repairing it.

In addition, facilities that had once been dedicated to the testing program have been converted to other uses, mothballed, or dismantled. For instance, the processing plant, which was used for processing stemming materials, has been mothballed since 1992. While NNSA has confidence that many of these aging assets could be reconstituted or replaced within a 36-month test readiness lead time, Nevada and its contractors acknowledge that the probability of that happening decreases with the passage of time. The photograph below shows pieces of equipment stored in a warehouse at the Nevada Test Site.



Scopes and other equipment shrink-wrapped and stored. Many have not been tested since 1992.

Nevada has also not kept pace with advances made in technology. Several of the computer systems that will be relied upon if testing resumes are no longer supported by their manufacturers. For instance, neither the VAX computers nor the HP9000 that were used to run software programs during testing are still supported. Additionally, some equipment and replacement parts for diagnostics devices are no longer made. For example, the cathode ray tubes used in oscilloscopes, camera chips used in imaging hardware, and photo diode tubes used for measuring high level signals, are no longer manufactured.

Future testing will likely utilize a modified set of diagnostics equipment based on the latest technology. However, off-the-shelf computers, operating systems, and power supplies would need to be tested to assure compatibility with the "downhole" nuclear testing environment. According to computer programmers, hundreds of software programs would also have to be rewritten to make them compatible with newer computer operating systems.

Completion of Safety Studies

Our audit also disclosed that Nevada has not fully updated its nuclear explosives procedures and activities to incorporate enhanced nuclear safety requirements issued in Fiscal Year 2001. Department orders require such studies for nuclear facilities and operations in order to provide a comprehensive safety program for nuclear explosive operations and associated activities and facilities. Nevada has identified six areas that make up its Nuclear Explosive Safety Study to be conducted to enhance readiness. For the six areas, Nevada has completed two master studies, started a third one, requested an extension to May 2004 for another, and delayed the start of the remaining two.

According to Nevada and its contractor, most of these studies could take from 12 to 18 months to complete. One review showed that all six areas could be included in one large study, but it would take 28 months and \$19.2 million to complete. Furthermore, this model calls for additional staffing and it is uncertain whether the time needed to hire the necessary personnel was included in the 28 months.

Test Readiness Program

Nevada's order on *Underground Nuclear Testing* describes the Test Readiness Program. In addition to providing policy and direction for conducting this program, the order requires Nevada to be able to maintain or reconstitute the personnel, equipment, infrastructure, procedures, and authorization basis necessary to conduct a short series of underground nuclear tests within 24 to 36 months of a Presidential authorization.

Readiness Planning

The ability to test within the prescribed timeframe was made even more challenging because the NNSA did not have a comprehensive plan or methodology in place to address its most significant test-related concerns. Specifically, plans were insufficient to fill key and critical positions; validate aging assets; incorporate technology advances; and, update Nuclear Explosive Safety Studies. In addition, Nevada has not fully used its Decision Support System computer model to simulate tests as they might be conducted in the current environment.

Nevada's *Fiscal Year 2001 Test Readiness Report* indicated that approximately 400 key and critical positions would need to be filled if a test must be conducted. Nonetheless, as indicated above, we found that Nevada does not have the correct skill mix to fill all of these key and critical positions. Since the Department does not have a current need to test, it is understandable that it is not maintaining a larger staff than currently needed. However, the absence of a plan to identify the critical skill mix needed, the positions currently vacant, and the planned methodology for hiring or training experienced individuals should the need arise is, in our judgment, a critical concern.

Additionally, a process had not been developed for validating the aging equipment, inventories, and facilities that had been set aside for the test readiness program. It is unknown which physical assets will be able to be reused, which will need to be repaired or replaced, or which manufacturers will be able to supply such assets. In fact, Nevada noted in a 1997 report that crucial diagnostics systems and equipment were not being maintained, technologies were not being modernized, and other equipment had reached its shelf life limit. The report's authors concluded it is likely that physical asset deficiencies will add to the cost of conducting an underground nuclear test.

Nevada also does not have an adequate plan for completing its nuclear safety studies. It has not set out a timeline for predicting how long it will take to complete the necessary studies, how each study will flow into the next, and how to proceed if tests are called for before the studies are complete. According to personnel in Nevada, the new safety requirements will also extend the time required to do many tasks. For example, in the past, an individual may have worked 48 hours straight on a particular task. Now, since that type of effort is not permitted due to safety concerns, that task would take longer or require more staff.

In lieu of exercising all facets of underground testing, Nevada relies on the Decision Support System, a computer simulation of underground testing designed to determine if readiness has been maintained. Without a comprehensive plan to outline the steps that need to be accomplished prior to testing in the current environment, the Decision Support System can only simulate how tests were conducted when underground testing ceased in 1992.

Safety and Reliability

For the past decade, the Department has maintained "high confidence" in the safety and reliability of the nuclear weapons stockpile without underground testing. This has been accomplished through the administration of a science-based Stockpile Stewardship Program,

which has been described as one of the most complex, scientific-technical programs in the world. The program, outlined in the *Stockpile Stewardship Plan*, relies on a robust regime of surveillance and assessment, as well as the construction of advanced experimental facilities that will incorporate state-of-the-art supercomputer technologies and computational capabilities.

The *Stockpile Stewardship Plan* also provides, however, that a return to nuclear testing could be required if a new type of problem were to occur with a weapon or if an accumulation of uncertainties about the stockpile cannot be resolved. Should such a contingency occur, it is clear that an efficient and expeditious return to a state of nuclear testing readiness could be vital to our national interests. If Nevada's testing challenges cannot be overcome, the Department risks losing its ability to ensure weapons reliability in a timely manner through underground testing.

RECOMMENDATIONS

We recommend that the Deputy Administrator for Defense Programs direct Nevada to:

1. Establish a methodology to hire or train personnel with appropriate skills to fill key and critical positions, should the need for these individuals arise;
2. Develop a plan to validate aging assets and, if necessary, identify potential replacement equipment, the cost of the replacement, and the lead-time necessary to obtain it;
3. Prepare generic portions of nuclear explosive safety documentation and create a plan to obtain appropriate authorization basis approval within the required timeline for resuming underground nuclear testing;
4. Extend the Decision Support System computer simulation model to incorporate all test organizational units and changes in personnel, equipment, and safety requirements; and,
5. Update the Test Readiness Program requirements overcome by recent events in its policy on *Underground Nuclear Testing*.

MANAGEMENT COMMENTS

In a response to our draft report, which is included as Appendix 1, the Deputy Administrator for Defense Programs, NNSA, expressed general agreement with the findings regarding the status of readiness.

According to the Deputy Administrator, NNSA will use increased budgetary authority to recruit and train vital personnel and will develop a plan for execution of the Nuclear Explosives Safety Studies. These planned corrective actions are responsive to Recommendations 1 and 3. NNSA did not concur with Recommendations 2 and 4 and did not specifically address Recommendation 5.

The Deputy Administrator also provided a number of comments intended to clarify various issues raised in our report. Those comments, along with our responses, are summarized as follows.

Management Comment

NNSA expressed concern about our conclusion that the Department's ability to ensure weapons safety or reliability is at risk, or may be at some foreseeable time in the future. Management noted that test readiness is maintained as a contingency in the event of an unforeseen future technical surprise in the stockpile. Finally, NNSA is confident that the weapons complex could resume testing on a time scale appropriate to address such a problem.

Auditor Comment

We noted that the return to underground testing was an option discussed in NNSA's *Stockpile Stewardship Plan* should a new type of problem occur with a weapon or if an accumulation of uncertainties about the stockpile cannot be resolved. Based on our audit, we concluded that this option is at risk. Furthermore, our conclusion is consistent with observations made by the Nevada Operations Office in its *Enhanced Test Readiness Cost Study*, dated July 1, 2002. In this study, Nevada concluded that the ability to maintain the current readiness posture within 24-36 months is "at risk" during FYs 2003-2005 at the funding level of \$10 million per year, and only with an additional \$5 million per year would the current readiness posture be assured.

Management Comment

Management expressed concern that the audit was focused on Nevada Test Site activities only. The response noted that the technical capabilities to conduct a nuclear test have always resided principally at the weapons laboratories.

Auditor Comment

We agree that the technical capabilities to conduct a nuclear test reside with the weapons laboratories. However, Nevada and its support organizations are responsible for providing more than half of the key and critical personnel needed to conduct an underground nuclear test. If Nevada cannot provide the correct skill mix to fill the key and critical positions to support the weapons laboratories, NNSA is at risk of losing its underground nuclear testing capabilities.

Management Comment

Management did not concur with our recommendation to develop a plan to validate aging assets and, if necessary, identify potential replacement equipment, the cost of the replacement, and the lead-time necessary to obtain it. NNSA believes that other stockpile stewardship experiments allow it to be in a position to deploy the best technology available should NNSA have to conduct a test at some future time. While there is some equipment that is appropriate to obtain in advance, NNSA believes such preparations would be expensive and contribute little to readiness absent the direction to prepare for a specific test or type of test.

Auditor Comment

We agree that NNSA should not acquire or develop equipment without a need for a specific test. However, Nevada has over 30,000 pieces of diagnostics equipment, about 600 pieces of heavy equipment, and over 1,600 materials for test readiness that it has kept in warehouses and equipment yards. Based on our analysis of equipment and facilities listings and interviews with key and critical personnel, most of the equipment and materials are obsolete and replacements cannot be obtained. We believe that Nevada needs to periodically validate this equipment and materials to see what would be used and what would need to be replaced. Without knowing how much of the equipment needs to be replaced and the potential cost of replacing it, Nevada cannot thoroughly evaluate its readiness posture.

Management Comment

NNSA also commented that our statement that Nevada has not kept pace with the advances made in technology is factually incorrect.

Auditor Comment

As described in the report, we found several examples of computers, software, and other equipment that were not compatible with today's technology. Furthermore, Nevada stated in its *Enhanced Test Readiness Cost Study*, dated July 1, 2002, that facilities and equipment were affected by the "persistent march of time." Specifically, the cost study stated that support of any test readiness posture requires enhancing the technical base in a number of areas, most importantly the development, engineering, calibration, and testing of advanced diagnostic systems. In addition, the report stated that while there was confidence that many of the facilities and equipment could be reconstituted or replaced within a 36-month lead-time, there is less confidence in that option as the time since the last use is extended. Certainly, facilities and equipment used for stockpile stewardship are maintained and replaced as needed. However, there are some facilities and equipment unique to underground nuclear testing that will require attention.

We also noted that Nevada's report showed that initial funding of \$15 million would be needed to maintain the 2-3 year readiness posture. Of that amount, \$10 million was needed for replacement or reconstitution of facilities and equipment.

Management Comment

NNSA disagreed with our recommendation to extend the Decision Support System computer simulation model to incorporate all test organizational units and changes in personnel, equipment, and safety requirements. According to NNSA's comments, the Decision Support System does not substitute for any technical or logistic activity that must be undertaken in the event a test must be conducted. Furthermore, NNSA has not identified the Decision Support System as a critical capability, and it would have a lower priority for increased funding than the activities currently planned under the enhanced test readiness.

Auditor Comment

Nevada's contractor used computer simulations from the Decision Support System to demonstrate its ability to support the resumption of underground nuclear testing within the required timeframe. However, test scenarios were based on how NNSA conducted underground nuclear testing in 1992. While the Decision Support System model

allows Nevada's contractor to demonstrate test readiness in the 1992 test environment, it is not a useful tool to demonstrate the time needed to conduct an underground nuclear test in today's environment.

Management Comment

In response to our recommendation to update the Test Readiness Program requirements overcome by recent events, NNSA commented on the test readiness posture of the United States and the roles of NNSA, the Departments of Energy and Defense, the Administration, and Congress.

Auditor Comment

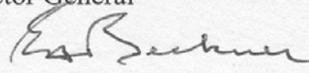
We revised the recommendation to clarify that the recommendation was directed towards Nevada. We also noted that NNSA did not specifically address this recommendation.



Department of Energy
National Nuclear Security Administration
Washington, DC 20585

August 15, 2002

MEMORANDUM FOR: Frederick D. Doggett
Deputy Assistant Inspector General for Audit Services
Office of the Inspector General

FROM: Everet H. Beckner 
Deputy Administrator for Defense Programs

SUBJECT: Comments on the DOE/IG Draft Report on "National Nuclear Security Administration's Test Readiness Program" forwarded on July 12, 2002

Defense Programs is in general agreement with the findings of the IG Audit regarding the status of test readiness. During the audit, Defense Programs was conducting the Enhanced Test Readiness Cost Study, chartered by former Administrator Gordon, in part to address NNSA concerns about what steps may be needed to bolster the viability of our test readiness program as we move further away from the last underground nuclear test (1992). To clarify and improve the audit document, NNSA would, however, like to address some general policy issues and comment on specific findings and recommendations.

The nuclear test readiness posture of the United States has had high level attention within the Congress and the Administration, and the current test readiness posture is the result of deliberate national level budget and policy decisions. NNSA is concerned about the conclusion of the report, which states that the Department's ability to ensure weapons safety or reliability is at risk, or may be at some foreseeable time in the future. The certification of stockpile safety, security, and reliability is a complex technical issue that is the responsibility of the directors of the three weapons laboratories. There is a well-established, formal process for assessing and reporting findings regarding the stockpile that is beyond the scope of this audit.

The Congress and current and previous Administrations have provided strong support for activities required to maintain the safety and reliability of our nuclear deterrent and we are aware of no issue that would currently require a test. Test readiness is maintained as a contingency in the event of an unforeseen future technical surprise in the stockpile. NNSA is confident that the weapons complex could resume testing on a time scale appropriate to address such a problem. The ongoing debate over the level of readiness is prudent to provide appropriate policy options for the future.

While this audit was focused on Nevada Test Site activities only, the technical capabilities to conduct a nuclear test have always resided principally at the weapons laboratories. Our confidence in the ability to resume testing is bolstered through the



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Appendix 1 (continued)

conduct of a program of scientific and technical work in support of the stockpile stewardship program; that is, test readiness is an integral part of stockpile stewardship.

The following comments relate specifically to the findings and recommendations of each area presented:

Critical and skilled personnel - We are in strong agreement over concerns about the loss of testing experience; however, this is the result of demographics and the 1992 test moratorium. In accordance with the Enhanced Test Readiness Cost Study, NNSA will use increased budgetary authority to recruit and train vital personnel. Stockpile stewardship experiments at the laboratories and the Nevada Test Site, including the subcritical experiments provide critical data to support the stockpile and valuable experience for the workforce.

NNSA has kept close contact with the retiree base and draws on their experience for planning a wide variety of activities. The principal concern is that the availability of retirees is diminishing and the value of their experience is diminishing at the same rate as for current employees.

Plan for the support or replacement of aging equipment - The challenges of maintaining equipment and diagnostics in the face of technological obsolescence is a problem faced by every organization or industry that employs modern technology. An experimental diagnostics plan is a key component of the Enhanced Test Readiness Cost Study. The philosophy NNSA has adopted is to conduct stockpile stewardship experiments, which include subcritical experiments, hydrotests, materials science experiments and High Energy Density Physics experiments on the NIF, ATLAS, OMEGA and Z facilities, in order to maintain skills and capabilities at the forefront of technology. With this experience, the diagnostic equipment from these tests and the appropriate technical base in hand, we will be in a position to deploy the best technology available should we have to conduct a test at some future time. While there is some equipment that is appropriate to obtain in advance, diagnostics and test instrumentation are customized to the specific test to be conducted. Absent direction to prepare for a specific test or type of test, such preparations will be expensive and contribute little to readiness, and new equipment, developed or acquired at considerable expense, will be subject to the same very short obsolescence times.

The audit team stated that "Nevada has also not kept pace with advances made in technology." This statement is factually incorrect. Bechtel Nevada is an active partner with the weapons laboratories in their traditional strength in the development and operation of advanced diagnostics. These will be used on most modern experimental facilities, such as NIF, JASPER, ATLAS, DARHT, BEEF, CFF and the Z-machine as well as diagnostics support for subcritical experiments. These diagnostics and experiments are at the forefront of modern technology, if not setting the pace for the development of relevant technologies.

Appendix 1 (continued)

Develop Safety Authorization Basis and Nuclear Explosive Safety Studies – The NNSA has identified preparing up-to-date safety documentation as a key component and the single largest activity to be funded under enhanced test readiness. NNSA will develop a plan for the execution of these studies in partnership with key stakeholders in the nuclear safety arena.

Extend the Decision Support System (DSS) – The DSS is a management tool that was developed to assist in the tracking and scheduling of resources under various test scenarios. It is based upon expert knowledge that has been captured under the test readiness program since the cessation of testing. It does not substitute for any technical or logistic activity that must be undertaken in the event that a test must be conducted. While the software will continue to be developed, and expanded as appropriate, the NNSA has not identified the DSS as a critical capability, and it would have lower priority for increased funding than the activities currently planned under enhanced test readiness.

Update Test Readiness Program Requirements – The test readiness posture of the United States and the appropriate budget to execute this posture is the subject of an ongoing national level debate. The NNSA, the DOE and the DoD are actively involved, but the ultimate resolution is a decision for the Administration in consultation with the Congress.

RELATED REPORTS

- *Audit of Nevada's Stockpile and Stewardship Management Program*, (WR-L-99-02, April 1999). The audit found that Bechtel had taken steps to appropriately size the technical and support staff and Bechtel key or critical personnel maintained their skills. In addition, Bechtel established a biannual training program that consisted of participating in subcritical experiments or other experiments or tests performed at the Nevada Test Site or National Laboratories, attending classes, and reading applicable material.
- *Stockpile Surveillance Testing* (DOE/IG-0528, October 2001). The audit revealed that since at least 1996, the Department has not met many of its internally generated milestones for flight laboratory and component tests. Without needed test data, the Department's ability to assign valid reliability levels to some weapons systems is at risk.
- *The Department of Energy's Pit Production Project* (DOE/IG-0551, April 2002). The audit determined that the Department's ability to produce a certifiable pit in accordance with its performance plans is at risk. Without a stockpile-ready pit, NNSA will be unable to conduct the destructive surveillance tests used to establish weapon reliability for the annual stockpile certification to the President.

Appendix 3

SCOPE

The audit was performed from September 2001, to July 2002, at the NNSA Headquarters in Washington, DC; the Nevada Operations Office; Bechtel Nevada; the National Oceanic and Atmospheric Administration Air Resources Laboratory; Wackenhut Services Inc; and at the Nevada Test Site. We limited our scope to Nevada and its support organizations as identified above.

METHODOLOGY

To accomplish the audit objective, we:

- Interviewed personnel and retirees from NNSA, Nevada, and its support organizations including randomly selected key and critical personnel;
- Observed underground nuclear testing equipment and inventories stored at various Nevada Test Site locations and the North Las Vegas Facility;
- Visited facilities at the Nevada Test Site and North Las Vegas Facility;
- Reviewed policies, procedures, and other documents related to the Test Readiness Program; and,
- Reviewed Test Readiness Completion Reports for Fiscal Years 1998, 1999, 2000, and 2001.

We conducted the audit according to generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Accordingly, we assessed internal controls with regard to Nevada's Test Readiness Program. Additionally, we assessed internal controls and performance measures established under the *Government Performance and Results Act of 1993* and determined that Nevada has a specific performance measure for maintaining readiness. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We did not rely on information processed on automated data processing equipment to accomplish our audit objectives.

An exit conference was held on August 7, 2002, with officials from NNSA Defense Programs at Headquarters and Nevada Operations Office.

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