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Nye County Public Safety Report

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Prepared by
Nuclear Waste Repository Project Office
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EXECUTIVE SUMMARY

This report presents the results of Phase I of a cooperative agreement between Nye County and the U.S. Department of Energy (DOE). The report was researched and produced to enable the DOE to make a detailed review and decision regarding possible implementation of a comprehensive, integrated plan for emergency response and related services for the Yucca Mountain high-level nuclear waste repository. Nye County as the site county for the repository and local government authority already provides public safety and related services, including fire, emergency medical, and law enforcement, within its jurisdiction. Integrating public safety services for the repository site and the area just beyond the repository site boundary at Gate 510 would have significant benefits for both organizations, including the following:

- A comprehensive, integrated approach for public safety and related services provides additional fire, emergency, medical, and law enforcement services to both the DOE and Nye County communities in the event of incidents at or near the repository site.
- Rotating public safety personnel through different job sites will improve job skills by giving them an opportunity to perform tasks learned otherwise only in training.
- Integrated communications between the DOE and Nye County would improve response times and enhance coordination between public safety and related service providers.
- Integrated public safety services would increase capabilities in the offsite vicinity, where the need for such services will greatly increase during repository construction and operations.
- A comprehensive, integrated management plan for fire, law enforcement, medical, and related services would streamline communications, provide a single point of contact and accountability between Nye County and the DOE, and enhance the ability of the DOE to successfully meet its objectives.
- Non-nuclear DOE requirements are similar to or duplicate the laws, regulations, and prudent business practices under which Nye County currently operates on a daily basis in providing public safety services within its jurisdiction. Nye County recognizes the imprecise nature of the DOE directives and orders, and is willing to assist in compliance.
- Public safety and related services can be provided at much lower cost to the DOE by local government than by independent contractors.

In summary, the full integration of Nye County and DOE public safety services would allow a strategically planned approach to the provision of services that would reduce costs and increase effectiveness during the phased development of the repository site. It is recommended that Nye County and the DOE negotiate an agreement for public safety services, and their funding, so that these services are in place as infrastructure and repository construction phases begin.

With Nye County and DOE agreement and funding, Phase II of the cooperative agreement to implement the recommendations of this report can be initiated.

Community comments and concerns gathered during Town Advisory Board meetings have been listed in Appendix G.

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ACRONYMS

BLM	U.S. Bureau of Land Management
BOC	Board of Commissioners
CCA	Consultation and Cooperation Agreement
CFR	Code of Federal Regulations
DEARs	DOE acquisition regulations
DOE	U.S. Department of Energy
EMS	emergency medical service
EMT	emergency medical technician
EWDP	Early Warning Drilling Program
FARs	Federal acquisition regulations
FEIS	Final Environmental Impact Statement
FLSA	Fair Labor Standards Act
GROA	Geologic Repository Operations Area
Hazmat	hazardous materials
HLW	high-level nuclear waste
IRS	incident response station
ISIP	Independent Scientific Investigations Program
LANL	Los Alamos National Laboratory
NCSO	Nye County Sheriff's Office
NNSA	National Nuclear Security Administration
NTS	Nevada Test Site
NRC	Nuclear Regulatory Commission
NWPA	Nuclear Waste Policy Act
NWRPO	Nuclear Waste Repository Project Office
OSHA	Occupational Safety and Health Administration
PA	physician's assistant
PSD	Public Safety Director
SNF	spent nuclear fuel
SWAT	Special Weapons and Tactics
WIPP	Waste Isolation Pilot Program
YMP	Yucca Mountain Project

1.0 INTRODUCTION

This draft Public Safety Plan was prepared by the Nye County Nuclear Waste Repository Project Office (NWRPO) to summarize activities and fulfill a requirement of Cooperative Agreement DE-FC28-04RW12289 between the U.S. Department of Energy (DOE) and Nye County. The cooperative agreement was entered into in November 2004 to address public safety concerns for the high-level nuclear waste repository at Yucca Mountain, Nevada.

The first task (Phase I) of the cooperative agreement included the following steps:

1. Review requirements relevant to public safety and related services that are necessary to meet the needs of the repository, DOE personnel and contractors, the Nuclear Regulatory Commission (NRC), the National Nuclear Security Administration/Nevada Test Site (NNSA/NTS), and others.
2. Identify requirements for services that might be delivered from DOE/Nye County-integrated facilities and operations, as well as the most useful grouping and phasing of specified services and related requirements.
3. Identify and assess the capabilities and capacities of existing organizations that provide public safety and related services in the vicinity of the repository site.
4. Prepare a preliminary plan to integrate public safety facilities and major equipment.
5. Develop a schedule for implementation of the plan for facility integration, including development of capabilities and capacities based on repository phasing.
6. Provide a side-by-side comparison of the capabilities and benefits of obtaining public safety and related services from DOE/Nye County-integrated facilities versus provision of such services by a DOE contractor.
7. Prepare a draft management plan for reliable, responsive delivery of public safety and related services.
8. Assemble the results in a report to enable the DOE to make a detailed review and decision for possible implementation.

This report documents the results for Phase I of the cooperative agreement. The content of this report is consistent with the protections described in the Nye County Community Protection Plan (NWRPO, 2006).

1.1 Integrated Approach

The DOE and Nye County face a common challenge: the need to develop and maintain public safety and related services for a specific area. The DOE must provide these services to the repository and related facilities, and has an additional responsibility to nearby communities to support and enhance public safety services. The DOE also must develop and be prepared to implement an emergency plan to meet NRC requirements. Nye County must provide public safety and related services throughout its jurisdiction, including the transportation access corridors to the repository site, and be prepared to support the DOE in developing and implementing its plan for radiological emergencies.

This report presents one possible solution to this challenge: an agreement for a comprehensive, integrated approach to the provision of public safety services within the current constraints of repository uncertainties and the scope of this study. It is anticipated that each party of the cooperative agreement will select from a comprehensive list of public safety services, those Nye County is amenable to providing and those the DOE believes will fulfill its needs. Once an agreement in principle is reached between the DOE and Nye County on a service or group of services during this first phase of the project, the second phase can describe service requirements, facilities, timing, and budgets for implementation in more detail. This report emphasizes public safety needs of the ongoing "infrastructure readiness" activities, as well as the time required for the county or a DOE contractor to put in place the significant public safety resources needed to support phased repository construction and operation. Additionally, a management plan is proposed by which Nye County can administer a DOE/Nye County public safety agreement for comprehensive, integrated public safety services to the DOE.

A joint public safety agreement for comprehensive, integrated public safety services could offer significant savings to the DOE if the DOE were to request approval for a county overtime exemption to the Fair Labor Standards Act (FLSA) from the U.S. Department of Labor, as was done by the DOE at the Los Alamos National Laboratory. Such a plan benefits the county because required DOE staffing to meet worst-case scenarios creates excess capacity that can assist the community. Seamless public safety services allow incidents that flow across the repository boundary to be handled by a single organization and allow the DOE to meet its required NRC offsite obligation for emergency response through a long-term government-to-government agreement, rather than through annual grants-in-aid.

The elements of the integrated plan for public safety services were identified in two earlier DOE reports (TRW Number BC0000000-01717-5705-00021, Revision 00 and TRW Number BCB0000000-01717-5705-00010, Revision 00), and through the review of federal laws and NRC and DOE general and site-specific requirements, to the extent that site-specific details are known and available. The NRC requirements applicable to the DOE's emergency plan (10 CFR 72.32(b)) anticipate the need to build capacity on- and offsite to deal with potential radiological emergencies. The proposed management model is based on the Nye County Sheriff's Office (NCSO) experience providing law enforcement services at the NTS under a contract with the DOE, the experience of Los Alamos County with Los Alamos National Laboratory (LANL), and the State of New Mexico with the DOE Waste Isolation Pilot Plant (WIPP).

1.2 Public Safety Services

The integrated plan concept is consistent with the DOE need to meet its public safety service requirements, and the possibility that Nye County, as the site government, could be a partner in meeting that need. The scope of public safety services required by the DOE is comparable to the services provided by Nye County and other local governments as part of their normal government function, which include law enforcement, fire and emergency medical services (EMS), environmental/health monitoring, and other related services. As the repository moves into construction and operation phases, Nye County will have to expand its public safety services to accommodate the significant off-site impacts of the repository throughout the southern portion of the county. An additional consideration stems from DOE and NRC directives related to coordination of on-site and offsite communications and public safety services. A DOE contractor

would have to build the on-site repository public safety services and infrastructure from the ground up, duplicating some of the county's off-site services and capabilities. This report suggests that building the on- and offsite services in a comprehensive, integrated manner will be faster, more responsive, and less expensive for both government entities than building them separately.

Nye County has an established framework for public safety and related services. The Nye County Sheriff's Office (NCSO) is a professional organization with many years of experience providing law enforcement services at the NTS and a familiarity with DOE requirements. The county has a professional and volunteer fire and EMS workforce that will need to be expanded to mitigate potential off-site repository impacts. The county is building its public and private medical services and facilities to meet the needs of its residents (e.g., the recently completed Desert View Regional Medical Center, a 70,000-square-foot hospital in Pahrump). Nye County also has emergency management and hazardous materials response capabilities in place. Expanding this existing framework of off-site local government services to meet the majority of DOE's needs at the repository site is much easier, more cost effective, and fulfills more regulatory obligations than creating a new on-site service organization in a remote location.

Public safety and related services are defined comprehensively to include the following (* public safety services currently provided by Nye County):

- Fire and emergency medical response*.
- Radiological and safety monitoring.
- Law enforcement*.
- Site security, including site protection, monitoring, routine security operations (e.g., patrol and gate guards), and administrative security.
- Routine and emergency dispatch*.
- Occupational medicine and health physics monitoring and response.
- Emergency management operations and response*.
- Hazardous materials initial response*.

The facilities described in this report are summarized as follows:

- Integrated incident response stations (IRs), staffed with DOE and Nye County personnel to provide a full range of public safety services in the vicinity of the Geologic Repository Operations Area (GROA), South Portal, and Gate 510 area.
- An occupational medicine/health physics facility, near the Gate 510 area.
- An emergency management, dispatch, and public safety management facility staffed with Nye County personnel, near the Gate 510 area.
- Training facilities for public safety personnel, near the Gate 510 area.

2.0 PUBLIC SAFETY REQUIREMENTS APPLICABLE TO THE REPOSITORY PROGRAM

DOE requirements and other identified needs for public safety and related services were reviewed for this report to determine the services that may be provided by integrated facilities. Information was primarily obtained from relevant sections of the Code of Federal Regulations (CFR), NRC publications, the Nuclear Waste Policy Act (NWPA) of 1982, as amended (42 USC 10101), the Yucca Mountain Project (YMP) Final Environmental Impact Statement (FEIS) (DOE, 2002), and numerous DOE Orders. Each of the documents reviewed includes information pertaining to aspects of radiological and non-radiological emergency response, personnel safety and health, and public safety that are relevant to the development and operation of the repository. In addition, a comprehensive list of laws, directives, policy documents, and orders pertaining to repository public safety is included as Appendix A.

In reviewing DOE and NRC regulations, in particular, many directives and regulations were found to be imprecise, overlapping, and sometimes conflicting. Although DOE Order HQ 250.1 exempts OCRWM from requirements in directives that duplicate or overlap NRC requirements, the myriad of policies, regulations, orders, notices, manuals, guides, and technical standards are, at best, difficult to navigate. As such, the approach to preparing this report was to focus on the key regulatory drivers that specify requirements directly applicable to the public safety and related services for the repository. (These apply primarily to the licensing and operation of the repository – federal and state public safety laws and practices are applicable to the site prior to licensing.) The key regulatory drivers for the repository include the following:

- **10 CFR Part 20 Standards for Protection Against Radiation** - Provides NRC Standards and requirements for radiation protection including dose limits, methods to determine dose, radiological criteria for License Termination, requirements for storage and control of licensed material, waste disposal and provisions for enforcement of regulations.
- **10 CFR Part 63– Disposal of High-Level Radioactive Wastes in a Geological Repository at Yucca Mountain, Nevada** States that DOE shall develop and be prepared to implement a plan to address radiological accidents that may occur at the geologic repository operations area, at any time before permanent closure and decontamination or decontamination and dismantlement of surface facilities. The emergency plan must be based on the criteria of 10 CFR 72.32(b). It further states that DOE shall provide a description of the security measures for physical protection of high-level radioactive waste in accordance with 10 CFR 73.51.
- **10 CFR 72.32(b) Emergency Plan** – States that the license application must be accompanied by an Emergency Plan that includes, but is not limited to the following information:
 - Means of detecting and assessing an accident condition and/or release of radioactive materials (i.e. monitoring environmental medium such as air, water, soil, etc.).
 - A brief description of the responsibilities of licensee personnel should an accident occur, including identification of personnel responsible for promptly notifying offsite response organizations and the NRC.

- A commitment to and a brief description of the means to promptly notify offsite response organizations and request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers when appropriate.
 - A brief description of the types of information on facility status; radioactive releases; and recommended protective actions, if necessary, to be given to offsite response organizations and to the NRC.
 - A brief description of the training the licensee will provide workers on how to respond to an emergency and any special instructions and orientation tours the licensee would offer to fire, police, medical and other emergency personnel.
 - Provisions for conducting quarterly communications checks with offsite response organizations and biennial onsite exercises to test response to simulated emergencies. The licensee shall invite offsite response organizations to participate in the biennial exercises.
 - A certification that the applicant has met its responsibilities under the Emergency Planning and Community Right-to-Know Act of 1986, Title III, Pub. L. 99-499, with respect to hazardous materials at the facility.
 - The licensee shall allow the offsite response organizations expected to respond in case of an accident to comment on the initial submittal of the licensee's emergency plan before submitting it to NRC.
 - The applicant's emergency plans shall include the following:
 - A brief description of the arrangements made for requesting and effectively using offsite assistance on site and provisions that exist for using other organizations capable of augmenting the planned onsite response.
 - Provisions that exist for prompt communications among principal response organizations to offsite emergency personnel who would be responding onsite.
 - Adequate emergency facilities and equipment to support the emergency response onsite are provided and maintained.
 - Adequate methods, systems, and equipment for assessing and monitoring actual or potential consequences of a radiological emergency condition are available.
 - Arrangements are made for medical services for contaminated and injured onsite individuals.
 - Radiological Emergency Response Training has been made available to those offsite who may be called to assist in an emergency onsite.
 - The applicant must make arrangements for providing information to the public.
- **10 CFR 73.51 Requirements for the Physical Protection of Stored Spent Nuclear Fuel and High-Level Radioactive Waste** – Provides performance objectives and requirements for physical protection of spent nuclear fuel and high-level radioactive waste at the repository.
 - Store spent nuclear fuel and high level radioactive waste only within a protected area.
 - Prevent unauthorized access of persons, vehicles and materials into material access areas and vital areas.

- Permit only authorized activities and conditions within protected areas, material access areas, and vital areas.
- The perimeter of the protected area must be subject to continual surveillance and be protected by active intrusion alarm system that is monitored in two continually staffed locations.
- Provide for adequate response to unauthorized penetrations of the protected area.
- Documented liaison with a designated response force or local law enforcement agency (LLEA) must be established to permit timely response to unauthorized penetration or activities.
- Redundant communications capability must be provided between onsite security force member and designated response force or LLEA.

This report groups the compiled regulatory requirements into the following three general elements:

- Site security.
- Personnel safety and health.
- Other related requirements.

2.1 Site Security

For the purposes of this report, we have separated the GROA and operational areas in the immediate vicinity of the GROA, which are subject to nuclear security requirements from the remainder of the proposed Yucca Mountain Repository land withdrawal area with its non-nuclear security requirements.

2.1.1 Nuclear Security

10 CFR 63 requires a description of the detailed security measures for the physical protection for high-level radioactive waste. As detailed in 10 CFR 73.51, the repository management and security force must be able to accomplish the following pertaining to the GROA and associated area:

1. Establish a security organization to provide trained and qualified personnel to carry out assigned duties and responsibilities and provide for routine security operations and planned and predetermined response to emergencies and safeguards contingencies.
2. Establish a predetermined plan to respond to safeguards contingency events.
3. Provide equipment for the security organization and facility design features to provide for rapid assessment of safeguards contingencies, response by assigned security organization personnel that is sufficiently rapid and effective to achieve the predetermined objective of the response, and protection for the assessment and response personnel so that they can complete their assigned duties.
4. Provide communications networks to transmit rapid and accurate security information among onsite forces for routine security operations, assessment of a contingency, and

response to a contingency, as well as rapid and accurate detection and assessment information to local law enforcement.

5. Ensure that a single adversary action cannot destroy the capability of the security organization to notify local law enforcement (offsite response forces) of the need for assistance.

2.1.2 Physical Security (Non Nuclear)

Physical security of assets not specifically involved with the direct management and storage of high level nuclear material and/or located within the secured (nuclear) area. The non-nuclear security areas would include construction material, facilities, and equipment which are part of the repository. Considering these assets and areas as separate from the requirements for the GROA and secured area reduces the requirements of the security force for the non-nuclear areas, and pre-operations phase of the repository, and its associated expense.

2.1.3 Law Enforcement

Law enforcement on the repository site is another area separate from the security aspects. It would involve the more mundane aspects of property theft, drug usage, physical altercations, etc., which will occur.

2.2 Personnel Safety and Health

Operations important to personnel safety and health are described in the following:

- Fire and rescue. (NFPA 1710 and related requirements and guidance)
 - Monitoring and maintenance of site fire detection, alarm, and suppression equipment.
 - Fire suppression for site equipment, structures, and storage drifts.
 - Mine rescue capability for accidents occurring in storage drifts and other tunnels.
 - Fire suppression for areas immediately adjacent to the site.
 - Training and maintenance of certifications.
- Radiological monitoring.
 - Monitoring for radiological exposure of personnel on the site.
 - Monitoring for levels of radioactive material in the air, on the surface, and underground both on and off the site.
 - Determination of methods for mitigating accidental release of radioactive material.
- Medical.
 - Arrangements for medical services for onsite contaminated and injured individuals (DOE Order 151.1C).

- Training in radiological emergency response for offsite personnel who may be called to assist in an emergency (10 CFR 72.32(b) and DOE Order 151.1C)
- Transportation of personnel to medical facilities for treatment beyond the capability of the site facility.
- Care and treatment of site personnel for normal medical conditions and diseases.
- Maintenance of site personnel medical and exposure records.
- Safety. (29 CFR 1910, 29 CFR 1926 and DOE O 440.1)
 - Maintenance of safety training (general as well as job specific) for site personnel.
 - Investigation of accidents to determine cause and prevention.
 - Maintenance of safety records required by the DOE, the Occupational Safety and Health Administration (OSHA), and others.
 - Ensuring that utility services important to safety include redundant systems to the extent necessary to maintain, with adequate capacity, the ability to perform their safety functions (DOE Order 151.1C). Such systems would provide adequate emergency facilities and equipment to support the emergency response onsite and the specification of methods, systems, and equipment for assessing and monitoring the consequences of radiological emergency conditions (DOE Order 151.1C).

2.3 Other Repository Needs and Requirements

Other repository needs and requirements are detailed in the following:

- Communications.
 - The repository management must verify that plans for use of offsite assistance include 1) arrangements for requesting and effectively using offsite assistance and provisions for using other organizations that can augment the planned onsite response, as required, and provisions for prompt communication among principal response organizations to offsite personnel who would be responding on the site (DOE Order 151.1C).
 - Installation and maintenance of telephone, data, and satellite communications equipment to allow communications with the local, state, and national agencies and headquarters.
 - Maintenance of backup communications capability.
 - Distribution via Public Information Office of information to local, state, and tribal agencies, the press, and the general public to keep them apprised of current activities and initiatives as well as accidents or unusual events.
- Training.
 - Training in radiological emergency response for offsite personnel who may be called to assist in an emergency (DOE Order 151.1C)
 - Safety training for site personnel and contractors.
 - Job training and certification (10 CFR 63.151-153).

- Certification maintenance for site personnel and supervisors.

Note: the non-nuclear requirements are similar to and in most cases duplicate the requirements under which Nye County is required to operate (see section 3.4, below).

3.0 NYE COUNTY CAPABILITIES AND CAPACITIES

3.1 Nye County Background

Nye County, created in 1864, is the largest county in Nevada, with more than 18,159 square miles (Figure 1). It is the third largest county in the continental U.S., larger than Massachusetts, Rhode Island, New Jersey, and Delaware combined. Approximately 92 percent of its land area is owned by the federal government, including the NTS, the Nellis Air Force Bombing and Gunnery Range, and the Yucca Mountain repository (http://en.wikipedia.org/wiki/Nye_County,_Nevada 7/1/2006)). The county seat is Tonopah, which is approximately midway between Las Vegas and Reno. The current population is estimated to be 41,455. Pahrump has 33,722 residents; the remaining 7,733 residents are distributed among the towns of Amargosa Valley, Beatty, Tonopah, Smoky Valley, Gabbs, Reese River Valley, and the rural area of northeast Nye County (Williams, 2005).

3.2 Nye County Agencies

- Nuclear Waste Repository Project Office.
The NWRPO is responsible for Nye County's oversight of DOE activities, which includes pre-decisional review and comment on DOE policy and technical evaluations regarding repository-related transportation, waste handling, storage, and disposal activities. The NWRPO also conducts independent geological and hydrological testing and monitoring activities to evaluate the impact or potential impact of the Yucca Mountain repository via the Independent Scientific Investigations Program (ISIP). This includes an Early Warning Drilling Program (EWDP) to establish a groundwater monitoring system to characterize groundwater resources and protect the residents of Nye County in the Amargosa and Pahrump Valleys from potential radionuclide contamination or other impacts to these communities. Additionally, the NWRPO monitors key county socioeconomic indicators and maintains/operates a set of integrated economic, demographic, and fiscal analysis and projections models pertaining to the construction and operation of the repository, any facility for on-site storage prior to disposal, and associated waste transportation facilities affecting Nye County (NWRPO Website www.nyecounty.com/Socioeconomic.htm 7/21/2006). It also oversees the quality assurance program for all ISIP technical personnel, contractors, and subcontractors.
- Public Works.
The Department of Public Works is responsible for solid waste management, transportation (i.e., road construction and maintenance), and water and wastewater operations within the county.
- Buildings and Grounds.
Buildings and Grounds is responsible for the maintenance of county-owned and operated buildings and grounds.

- **Emergency Management Services.**

Emergency Management Services is responsible for fire, hazardous materials (Hazmat), safety, and emergency medical services and conducts first responder and incident command system training. Under the current director, funds have been obtained for constructing a new Emergency Services Operations Facility that will house apparatus belonging to the Southern Nye County Volunteer Hazmat Team, made up of 20 personnel and handling approximately 30 calls per year. The operations facility will also include a 60- by 80-foot Emergency Operations Center to coordinate emergency response and training in southern Nye County. Additional funding to obtain new/updated equipment for fire and ambulance services has been secured. The command center will be ready for occupation in September 2006, and will be equipped with landline and satellite telephonic and data communications, VHF radio, HAM radio (i.e., Radio Amateur Civil Emergency Service, or RACES), and an uninterruptible power supply system and backup generator for power outages, which will enable it to communicate at all levels within the state.
- **Sheriff's Office.**

The NCSO is responsible for field (i.e., patrol) services; investigations; and Special Weapons and Tactics (SWAT), K-9, mounted, and volunteer units (i.e., search and rescue, reserve, auxiliary, and cadet programs). The Sheriff's Office consists of 105 sworn officers (1 Sheriff, 3 Assistant Sheriffs, 2 Captains, 5 Lieutenants, 13 Sergeants, 8 Investigators, 54 Patrol Officers, 4 School Resource Officers, 14 Detention Officers, and 1 part time Bailiff). As of FY2007, the Sheriff has been authorized to add 14 deputies to his force.
- **Planning.**

The Planning Department is responsible for planning, zoning, and development in the county.
- **Natural Resources Office.**

The Natural Resources Office is responsible for soil, plant, wildlife preservation, habitat conservation, renewable energy, land stewardship, water issues and groundwater stewardship within the county.
- **Information Systems.**

The Information Systems Department is responsible for computer services within county government offices.
- **Human Resources.**

The Human Resources Department is responsible for county employee hiring, benefits, and all related employee activities.
- **County Manager.**

The County Manager is responsible for day-to-day operations of all county departments except the NCSO.

3.3 Nye County Communities

The following communities and their associated agencies operate under mutual aid agreements with Nye County and could provide assistance to the repository in the event of an emergency. Figure 2 shows the location of Nye County public safety resources.

- Pahrump.

The population of Pahrump is estimated to be 33,722 (Williams, 2005). The Town is approximately 59 miles south and east of the repository and 62 miles west of Las Vegas. It is serviced by the Pahrump Airport.

- Fire and Rescue.

The Pahrump Fire and Rescue Department consists of 69 personnel (i.e., 26 paid staff members and 43 volunteers), operating out of 4 fire stations, only 1 of which is manned full-time, with 22 vehicles (i.e., 4 ambulances, 12 fire, 1 rescue, 3 support, and 2 utility). It handles an average annual call volume of 1,000 fire and 3,500 ambulance calls. Unlike other fire and rescue units in southern Nye County, which report to the Emergency Management Services Office, the Pahrump unit reports to the Town of Pahrump. The Pahrump fire department maintains an active mutual aid agreement with both Nye County Emergency Services and with the NTS emergency services at Mercury.

- Medical.

Pahrump has six clinics/medical centers with a total of ten doctors (two more doctors are to be added during the summer of 2007), four physician's assistants (PAs), two registered nurses, and other staff members. One clinic qualifies as an urgent care facility. The Desert View Regional Medical Center, a 70,000-square-foot facility, opened on April 27, 2006. It is equipped with 24 private patient rooms, expandable to 50 beds; a 24-hour emergency room; 2 surgical suites; diagnostic imaging; physical therapy; delivery suites and nursery; a diagnostic sleep center; and a decontamination room. The decontamination room is suitable for hazardous materials but not radiological decontamination, although radiological decontamination facilities could be added prior to the repository operations phase.

- Law Enforcement.

Law enforcement consists of the NCSO South Area Command Substation and Dispatch Center, with computer-aided dispatch.

- Crystal.

The population of Crystal is not listed (Williams, 2005). The Town is approximately 39 miles south and east of the repository, and 20 miles north of Pahrump.

- Fire and Rescue.

The Crystal Fire Department consists of six volunteers, one fire station, and three fire vehicles, and handles an average annual call volume of 40 fire calls.

- Medical.

There are no medical facilities in Crystal.

- Law Enforcement.

There are no law enforcement facilities located in Crystal.

- Amargosa Valley.

The population of Amargosa Valley is estimated to be 1,316 (Williams, 2005). The Town is located approximately 20 miles south of the repository, 32 miles east and south of Beatty, and 46 miles north and west of Pahrump.

- Fire and Rescue

The Amargosa Valley Fire Department consists of 38 personnel (i.e., 1 paid staff member; 21 volunteers, including junior fire fighters; and 16 EMS volunteers), operating out of 2 fire stations, with 10 vehicles (i.e., 7 fire, 1 rescue, and 2 ambulances). It handles an average annual call volume of approximately 165 calls.

- Medical.

The Amargosa Valley Clinic has one doctor, with limited decontamination capability and training. Amargosa Valley shares its doctor with Beatty; in return, Beatty shares its doctor and PA with Amargosa Valley.

- Law Enforcement.

The Amargosa Valley Sheriff's Office has a fiber optic communications connection and is equipped to function as a dispatch location, although this function is not currently used.

- Beatty.

The population of Beatty is estimated to be 1,080 (Williams, 2005). The Town is located approximately 30 miles from the repository by road and 18 miles west of the repository by direct line, 93 miles south of Tonopah, and 73 miles north and west of Pahrump. It is serviced by Beatty Airport.

- Fire and Rescue.

The Beatty Fire Department consists of 33 personnel (i.e., 1 paid staff member, 20 volunteers, and 12 EMS volunteers), operating out of 1 fire station, with 8 vehicles (i.e., 3 ambulances, 1 rescue, and 4 fire). It averages 55 fire and 225 ambulance calls per year.

- Medical.

Beatty has one clinic with one doctor and one PA. As stated, Beatty and Amargosa share doctors and the PA. Medical personnel have training in decontamination, but no facilities or equipment to perform decontamination activities.

- Law Enforcement.

Law enforcement capabilities consist of the NCSO Central Area Command Substation and Dispatch Center, with computer-aided dispatch.

3.4 Nye County Public Safety Requirements

As a municipal government, Nye County public safety and related service departments are required to meet a myriad of federal, state, and local regulatory requirements, and prudent industry practices. The County continuously strives to meet or exceed these requirements and standards for the optimum benefit of its constituency. Nye County complies with health and safety directives from the Occupational Health and Safety Administrations' 29 CFR 1910 General Industry Standards. County compliance with fire, rescue, and emergency medical regulations is enforced and directed through the State of Nevada certification process and National Fire Protection Association (NFPA) guidance, respectively. Law enforcement in Nye County is provided under constitutional authority by the Sheriff's Office, and enforces federal, state, and county laws and ordinances. Although Nye County public safety services currently have no nuclear safety requirements, DOE and NRC regulations would apply to such services if provided to the DOE under an integrated services agreement. The laws which govern Nye County's actions are primarily the same laws which form the basis of the DOE directives. Examples of these directives are:

- 29 CFR 1910
- NFPA 1710 and related guidance (fire service standards)
- Nevada Revised Statutes (NRS) Chapter 450B Emergency Medical Services (training and certification of ambulance attendants, medical dispatchers, EMTs and firefighters for basic, intermediate and advanced emergency care)
- NRS 477 State Fire Marshal (fire service standards and training, hazardous materials)
- NRS Chapter 618 Occupational Safety and Health
- NRS Chapter 248 Sheriffs and NRS Chapter 289 Peace Officers (certification, training, standards)

The review of regulations and directives governing DOE actions conducted for this report noted numerous overlapping and imprecise regulatory coverages pertaining to the repository. By integrating Nye County and DOE public safety services both entities can assist each other to meet these requirements in a more efficient manner to reduce the regulatory burden.

4.0 U.S. DEPARTMENT OF ENERGY FACILITIES IN NYE COUNTY

The DOE facilities within Nye County borders include the NTS, and the Yucca Mountain repository. The Department of Defense manages the Nellis Air Force Bombing and Gunnery Range, and the Tonopah Test Range.

4.1 Nevada Test Site

There are no permanent residents of the NTS. The primary onsite administrative facility, Mercury, is 39 miles north of Pahrump and approximately 41 miles from the Yucca Mountain repository by road (Figure 3). The NTS is serviced by the Desert Rock Airport. There are 18 fire personnel and 12 contractor-provided paramedics, with 26 vehicles (i.e., 19 fire and 6 ambulances) operating out of 2 fire stations. The vehicles are divided between the Mercury station and another, smaller station in Area 6. The NTS has one clinic, with decontamination capability. The NCSO, with five deputies, provides law enforcement for the NTS under contract with the NTS.

4.2 Yucca Mountain Repository

The proposed Yucca Mountain repository is north of U.S. Highway 95 and the junction of Nevada Highway 373. Four distinct working areas exist within or adjacent to the site, including Gate 510, the North Portal Area, and the South Portal Area (Figure 4). A railroad access corridor to the repository is planned, although its location has not yet been determined.

Gate 510 is 1.5 miles north of U.S. Highway 95. The area between the site and the highway is currently public land administered by the U.S. Bureau of Land Management (BLM). Nye County intends to acquire nine sections of land near the 510 Gate from BLM. Nye County has already purchased almost 90 acres of this property. Gate 510 will be the main access point to the site for personnel, the delivery of materials, and the receipt of truck shipments of spent nuclear fuel (SNF) and high-level nuclear waste (HLW).

The North Portal area, which will become part of the Geologic Repository Operations Area (GROA), will be the area where SNF and HLW are unloaded from transportation casks and reloaded into either storage casks for aging or waste packages for disposal. The material will then be transferred to either aging pads or underground disposal areas within Yucca Mountain. Facilities at the GROA may include spent fuel and canister handling facilities, aging pads, and related facilities (based upon preliminary information, since the repository design has not yet been finalized). The area will be subject to the highest security requirements at the site (TRW, 1998).

The DOE is developing a license application, which will be submitted to the NRC, for authorization to construct and eventually operate a repository for disposal of SNF and HLW. Facilities to be constructed in the GROA will be described in detail in the application. Other facilities essential to the construction, operation, and maintenance of the repository will not be described in detail in the license application, but are necessary components of the project and will be built by the DOE. These facilities, referred to in the license application as the "Balance of Plant," include fire stations, a fleet management facility, a training facility, security facilities, and other related facilities.

The South Portal area will be the staging area for the construction and mining of disposal drifts within the mountain. Although still considered a secure area, it will not require the same level of security as the GROA.

A projected rail access corridor will be the point of receipt for rail shipments of SNF and HLW. The exact location of this corridor and shipping/receiving yard has yet to be determined. Construction materials may also be delivered by rail.

The area planned for land withdrawal for the repository is approximately 330 square miles. Figure 5 shows the relationship of Amargosa Valley, the 510 Gate area, and the repository site. The center of Amargosa Valley is Farm Road, approximately 15 miles south of the repository.

4.3 History of Nye County/U.S. Department of Energy Cooperation

Nye County has demonstrated its commitment to maintaining a long-term, mutually beneficial relationship with the DOE. The NCSO has provided law enforcement services at the NTS, including the Yucca Mountain area, for more than 45 years. The NCSO provided the primary inter-organizational communications between the DOE and Nye County until the NWPA and its amendments authorized Nye County to conduct onsite representation at Yucca Mountain. The NWPA gave Nye County legal standing as the unit of local government holding limited jurisdiction over the proposed high-level nuclear waste repository. Under the NWPA, Nye County and the DOE have established a working relationship to satisfy their mutual goals of safeguarding public health and welfare within their respective purviews.

In 1983, the Nye County Board of Commissioners (BOC) established a program to monitor and assess the federal effort to find a repository site. After Congress designated Yucca Mountain as the focus of the search for a geologic repository, the BOC formalized its program through the creation of the NWRPO in 1987.

A Framework for Formal Interactions, signed by Nye County and the DOE on October 19, 1992, established protocols for interactions between the two organizations. Nye County and the DOE agreed to coordinate data collection, assessment activities, and socioeconomic impact mitigation procedures. The Framework also directed that Nye County and the DOE consult during the development of upper-level policy documents. After signing the Framework, Nye County hired an onsite representative and established the ISIP in 1993. The objective of the ISIP is to gather data for independent analysis of geologic and hydrologic conditions at the site, and to monitor and review DOE scientific characterization of the Yucca Mountain site and repository behavior.

The EWDP, an element of the ISIP, was formed to establish a groundwater monitoring system to protect the residents of Nye County in Amargosa and Pahrump Valleys from potential radionuclide contamination or other impacts to groundwater from repository development and operation. Through routine, cooperative interaction, the EWDP fills geologic and hydrologic data gaps of the DOE site characterization program. It has expanded to include tracer testing, geophysical mapping, and numerous additional technical investigations. Throughout these studies, the EDWP has proven successful in maintaining budget efficiency while complying with strict quality assurance/quality control guidelines.

5.0 INTEGRATION OF OPERATIONS/FACILITIES

The Yucca Mountain repository will be developed in phases. This stepped growth is advantageous to both DOE and Nye County. It allows time for each to become familiar with the capabilities and resources of the other and to develop specific capabilities in a thoughtful, coordinated manner, based on observed and agreed-upon needs and solutions. Nye County has already taken steps to develop its capabilities (i.e., the addition of 14 NCSO deputies, funding for upgraded emergency equipment, the new Emergency Command and Training Center currently under construction in Pahrump, and the purchase of almost 90 acres in the vicinity of the 510 Gate). Nye County intends to use the acreage at the 510 Gate for the construction of an Amargosa Valley Public Service complex, the Amargosa Valley Science and Technology Park, a possible solar power generation facility, a science museum, and additional commercial and industrial facilities. Nye County's proactive planning measures provide the basis for a focused, coordinated, and integrated approach to development of repository support facilities and an economic advantage to both organizations.

Additionally, a fully integrated operation will allow the rotation of personnel between the various repository and Nye County locations, thus optimizing training, experience, and job interest. Public safety personnel stationed at or near the GROA and other site IRSs should have few calls requiring response beyond their routine monitoring responsibilities and training, leaving limited opportunity to practice and hone their skills. An integrated approach would allow individuals to rotate among the GROA IRS, other IRSs, and offsite facilities, tempering their training with practical experience.

A detailed comparison of public safety services that could potentially be provided by Nye County versus those that could be provided by the DOE or its contractor is given in Table 1.

5.1 Site Security

It has been suggested that repository security be handled by either a unit of the NCSO or a private agency. Due to the specialized nature of the security function and the equipment required for the repository, several factors must be considered. Security is primarily the enforcement of regulations, not laws. An integral element of a comprehensive security program involves backup of site security by law enforcement on a routine basis and law enforcement assistance in the event of an intrusion onto the repository. The current agreement between the NCSO and the NTS is good example. The NCSO is eminently qualified and experienced for law enforcement tasks, and may be a viable alternative for many security services.

Aspects of site security involve the monitoring of sensors and cameras to detect intruders and/or unauthorized entry to restricted areas; the issue of badges to individuals authorized to enter restricted areas; control of the entrance and exit of individuals and vehicles to restricted areas (i.e., gate guards); and background investigations of individuals to be given access to the site, most often employees. Personnel for each of these tasks could be provided by the NCSO. The NCSO is already set up to conduct initial background investigations for its own personnel, and could easily expand this to cover initial investigations for repository personnel. Likewise, it could provide guards to man gates, monitor facilities, and dispatch security and emergency response teams/personnel. NCSO personnel could be either sworn officers or unsworn personnel

(at a possibly reduced cost compared to the sworn officers), who would be backed up by sworn officers. NCSO personnel are already familiar with the requirements for issuing badges and security clearances, and have a closer relationship than normally found between administrative and operational security personnel. Their involvement would not negate overall DOE control of repository security, but could provide a fully integrated relationship to further strengthen security and intelligence operations.

5.2 Fire and Rescue

Nye County has taken a significant, proactive measure by adding new equipment to its fire and rescue program. Its reliance on volunteer services has served it well in the past, but continued growth will require the development of a trained, professional fire and rescue team if the county is to meet the needs of its citizens and the requirement for on- and/or offsite assistance to the repository as it grows. Working within a partnership with the DOE at the repository could allow Nye County to initially provide the necessary equipment, with DOE providing the funding for the professional personnel to accommodate the needs of both organizations.

The DOE has previously depended on assistance from the BLM, the U.S. Park Service, and other federal agencies for assistance in fire protection. Recent events have shown that these agencies may be overtaxed during fire seasons and unable to provide sufficient assistance when required. The integration of Nye County and repository facilities, equipment, and personnel would provide a trained, dependable force capable of handling incidents in a prompt, cohesive, and effective manner. Additionally, Nye County could provide the coordination of water supplies for use in fire suppression. An integrated approach would reduce the liability of each organization, as well as lowering management, administration, and acquisition costs for each, and ensure the availability of appropriate equipment and personnel. Of note is the possibility of using payments from medical insurance to partially offset the expense of emergency ambulance/EMS response facilities and services. The integrated approach would also provide each organization with positive public relations within the surrounding communities, the county, and possibly the state.

Integrating Nye County personnel at each IRS would further increase its ability to support activities at the repository. Dispatch personnel would be fully cognizant of both repository and Nye County capabilities, and could ensure that appropriate units and required backups were quickly and efficiently dispatched to maximize capabilities and efficiency. No time would be lost in an emergency by having to explain what had occurred to another dispatching agency or service.

5.3 Radiological Monitoring

Nye County has established its ability to develop, operate and maintain scientific programs to evaluate environmental conditions on and off the NTS. Nye County anticipates conducting additional environmental assessment and evaluation to safeguard the health and welfare of its constituents. As these environmental initiatives come to fruition (i.e., water, land, and air quality monitoring for radioactive and other potentially hazardous constituents), the potential exists for Nye County to expand its initiatives to include on-site programs to the benefit of both organizations.

5.4 Occupational Health and Medical Services

The opening of the Desert View Regional Medical Center is a first step to increasing the possible medical support of Nye County to the repository site. It provides a fully staffed hospital that is closer and easier to reach than those in Las Vegas. By expanding the Amargosa Valley Clinic, or building a medical facility near the 510 Gate, Nye County, working with local providers, would be able to provide occupational health and medical services to the repository, and concurrently upgrade the medical services in the local community. Occupational health and medical services would include the following:

- Pre-employment physicals.
- Periodic personnel physicals required during employment.
- Firefighter and emergency medical personnel physicals.
- Retention and safeguarding of medical records at the site.
- Diagnosis and treatment of occupational injury or disease.
- Monitoring radiological exposure to personnel.
- Preparation, evaluation and updating of the medical portion of the repository and Nye County emergency plans.

These facilities would also serve as urgent care centers, and could arrange evacuation to area hospitals, including the Desert View Regional Medical Center, for seriously injured patients after initial treatment and stabilization.

5.5 Hazardous Materials

Although Nye County could perform initial emergency response operations on-site, subsequent clean up activities would likely be performed by a private contractor. This is consistent with current emergency response practices off-site. At present the Nye County emergency response personnel are required to be available in the event of hazardous material incidents offsite (e.g., traffic accidents involving material being transported to the repository or the NTS). Training will be required for all first responders to be able to recognize and properly assess the incident upon their arrival. An integrated DOE/Nye County hazardous materials training facility at or near the repository would be advantageous to both agencies, and would ensure that training and direction are available in the event repository personnel required backup. Again, the positive public relations factor cannot be overstated.

6.0 OTHER COMMUNITY INTEGRATED OPERATIONS EXAMPLES

6.1 The Los Alamos Example

From July 13 through 15, 2005, personnel and contractors from Nye County and Oak Ridge, Tennessee, visited Los Alamos County, New Mexico, for a Fire and EMS Peer Exchange sponsored by the Energy Communities Alliance, the University of California, and Los Alamos County. Los Alamos County provides fire and emergency medical response services to LANL. This professional workforce also protects the Los Alamos community. In addition to an extensive briefing with county and fire department managers, the visitors toured the new Joint Emergency Operations Center, the dispatch center, and the new LANL occupational medicine facility. County plans for a new integrated public safety facility, now under construction in the Los Alamos community, were also reviewed.

Many similarities exist between Nye and Los Alamos Counties, as well as some differences. The major difference is size. Nye County has a much larger land area of 18,159 square miles and population of 41,455 than the approximately 110 square miles and 18,000 residents in Los Alamos. A second difference is that the Los Alamos community developed subsequent to the LANL's construction. In contrast, the Nye County communities existed well before repository siting recommendations. In both counties the federal government owns most of the land, and federal facilities are the major source of employment. Los Alamos County contains no unincorporated municipalities, while Nye County communities are mostly unincorporated with relatively small populations, for which the county provides municipal services in addition to traditional services. Both counties have sophisticated public safety needs due to the highly technical federal facilities within their borders.

Additionally, the repository is expected to have a smaller workforce than the 16,000 employed at LANL, and repository work will be more industrial than the largely scientific work at LANL. However, both facilities are remote by design, and have similar conditions, in that many personnel commute long distances and construction activities require long hauls for construction materials. Transportation issues at Los Alamos create many requirements for public safety services; the same can be expected for the repository, only more so given the magnitude and duration of construction, transportation, and operation activities.

Federal facilities place special public safety burdens on the local governments of both counties. Without LANL, Los Alamos County would have a largely volunteer fire and EMS force, minimal law enforcement, basic medical services, and no security concerns. The presence of LANL means the following:

1. A highly professional and well-trained fire/EMS department is required to deal with a wide spectrum of potential hazards.
2. A significant law enforcement presence is required to accommodate the influx of commuters and construction-related activities.
3. A fairly sophisticated medical community is required to handle the potential illnesses and exposures contracted by the residents.

4. Public safety employees are required to be knowledgeable and cognizant of sophisticated security issues in order to do their jobs effectively and coordinate with the significant requirements of federal and contract officials.

With the presence of the NTS and other federal facilities in Nye County, the county has shared some of these requirements in the past, but the operations phase of the repository will bring these public safety needs to a new level for the county.

Contracting with Los Alamos County offered the DOE significant cost savings over contracting with a private entity for emergency medical and fire services. By far the biggest cost avoidance was the exemption from overtime payments under the FLSA, a nearly \$4 million annual savings, which was available to the DOE for a contract with a local government, but unavailable under a contract with a private contractor. In addition, contracting with the county provided savings through avoided costs, such as the New Mexico Gross Receipts Taxes on goods and services, federal and state corporate income taxes, indirect contractor costs, and corporate profits. Los Alamos County estimates that the DOE and LANL save about \$9 million annually by contracting with the county for fire services.

Finally, there are New Mexico state-shared revenues available to the county that are unavailable to a private contractor. The state shares fire insurance premium proceeds with local fire departments, and Los Alamos receives in excess of \$200,000 for facilities and equipment that is unavailable to a non-governmental fire unit. The county also receives a small amount of state funding for providing certified EMS. The county estimates, and the DOE has agreed, that the cost of a private contractor managing the Fire Department would be at least 50 percent higher than the county's cost.

Generally, the Los Alamos experience has been very positive to both parties. The county gains higher levels of professionalism in the contracted public safety services and in some related support services, while the DOE gains significant cost savings. The DOE was required to make some minor adjustments because the contract was a government-to-government agreement rather than a vendor agreement with a private party; the county had to adjust to the many federal requirements contained in federal acquisition regulations (FARs), and DOE acquisition regulations (DEARs), attached to the agreement. However, both parties are generally happy with the arrangement, and it appears to be one model for the DOE and Nye County to consider as the DOE puts the repository in place over the next few years.

Summaries of the Los Alamos County experiences in providing public safety services to the DOE are included as Appendices B and C.

6.2 The Waste Isolation Pilot Plant

WIPP, the national repository for defense-related transuranic wastes, near Carlsbad, New Mexico, was developed under somewhat similar circumstances to those of Nye County and the Yucca Mountain repository. When the DOE National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Public Law 96-164) was passed, it contained a provision directing the DOE Secretary to enter into a written Consultation and Cooperation Agreement (CCA) with the State of New Mexico. The CCA (Appendix D), a government-to-

government agreement, meant that New Mexico was not considered a DOE contractor. The New Mexico agreement includes the following:

1. Transportation monitoring activities.
2. Transportation emergency response planning activities.
3. Transportation emergency response training and exercises.
4. Transportation emergency response equipment and supplies.
5. Public awareness and participation in WIPP transportation safety program activities.
6. Long-term WIPP performance assessment activities.

Additionally, a separate Stipulated Agreement required the DOE and the state to reach a negotiated settlement on certain offsite concerns (e.g., emergency response, highway upgrading, transportation monitoring, and accident liability, with the DOE liable for all incidents involving the transfer of material to or from WIPP, and committed to seeking special congressional appropriation for upgrading selected non-interstate WIPP routes in New Mexico). While the New Mexico agreement is primarily concerned with the transportation of wastes, it provides an additional example of local government/DOE cooperation and integration that differ somewhat from the Los Alamos Agreement. The WIPP experience demonstrates the value of congressional authority for DOE/local government interaction and cooperation.

7.0 PHASING OF INTEGRATED PUBLIC SAFETY AND RELATED SERVICES

The level of detail for the DOE requirements specified in Section 2.0 is somewhat limited, although consistent with the current preliminary stage of repository development. Initial requirements will include fire protection, law enforcement, and medical services. However, as requirements increase or change, particularly as construction and NRC-licensed operations begin, the key to meeting the needs of both the DOE and Nye County will be a regular, frank, and open discussions of the progress and needs of each. Coordinated advance planning will be mandatory if appropriate personnel, equipment, and facilities are to be available when needed. It is anticipated that a proposed agreement between Nye County and the DOE for public safety services and funding will be in place as soon as is feasible. This would help DOE address NRC licensing requirements related emergency planning and response (10 CFR 63.161 and 10 CFR 72.32(b)).

7.1 Preparation Phase

Initially, Nye County actions will probably be limited to assisting the DOE as it begins construction of site upgrades and infrastructure development by providing backup resources for onsite personnel and equipment. For example, as construction begins on the 510 Gate, the DOE/NTS will provide onsite ambulance and emergency medical technician (EMT) service in the event of a construction accident. If a serious accident were to require the onsite ambulance and EMTs to transport an injured person to a hospital, all work would likely be required to halt because there would no longer be an onsite ambulance or EMT available within the site area. Nye County resources could easily be used in a backup role. An ambulance and EMT could quickly be summoned from locations such as Amargosa Valley to reduce work stoppage at the NTS or repository site. The Fire Department could respond quickly to assist in the event of a fire. Law enforcement could be required to assist in the event of a traffic accident or demonstration outside the gate area. This could be eliminated if Nye County's public safety services were integrated by DOE to provide services to the site, since additional facilities would be available to provide consistent, timely back up to Nye County service on- or just offsite.

As a further step, a modular facility could be placed in the 510 Gate area to house the backup ambulance and fire vehicles. A facility could be set up for a small NCSO substation to assist in activities such as traffic control. The key component to the modular facility is mobility, since it could be moved or additional facilities added to maintain support for infrastructure construction, as required.

National fire protection association standards (NFPA 1710), as well as other directives and guidelines, specify response times that would require response from a location as close to the emergency incident as possible. However, due to the remote nature of the existing and planned Yucca Mountain and NTS facilities, required times of response have been relaxed to adjust for financial constraints. Figure 6 outlines the area in which a 15-minute response is anticipated. Response times for areas outside this 15-minute response area will increase, depending on distance and road/surface conditions. Integrating Nye County fire and rescue participation could significantly reduce anticipated response times in many areas, both now and as the site infrastructure grows. Initial discussion of integrated operations should begin during this preparation phase to reduce the development of redundant facilities and organizations, resulting

in cost savings to both the DOE and Nye County in the near-term and in the longer term as repository development activities proceed.

Proposed changes in the road and electrical infrastructure (and associated access roads) of the site, indicated on Figure 7, will also shorten response times from the Gate 510 area or Amargosa Valley facilities.

7.2 Construction Phase

As construction begins, the activities described in the preparation phase will become more important. The growth of construction activities and personnel will result in a corresponding increase in requirements for fire, rescue, and EMS capabilities; law enforcement and physical security; and medical services.

Safety requirements will demand the maintenance of equipment and training of personnel in equipment use, as well as the training of personnel in hazards specific to the project and work location. Since much of the training will involve both onsite personnel and offsite emergency response personnel, integrated training and equipment maintenance facilities would ensure fully coordinated and organized emergency response activities. The same facilities could be used to train personnel in construction, and later, operational activities, reducing the expense of additional or redundant facilities.

Communications will play a greater role as repository development gains momentum and structures are built. An offsite command center will become necessary, with requirements for satellite, data, radio and telephone equipment, and the ability to coordinate on- and offsite activities. An integrated onsite command center would greatly improve coordination and communication with onsite operations and offsite assistance/response. An integrated 911/dispatch facility would allow effective communications between diverse agencies without the challenges that normally arise between agencies during emergency operations due to differing equipment, communications systems, and training. By integrating the DOE and Nye County command and communications facilities, construction and maintenance expenses would be reduced, and a seamless command and control capability would be operational if the onsite facility were not functional for any reason. Each agency would be fully aware of the needs of the other and could immediately respond when required.

7.3 Operations Phase

The greatest need for public safety services will be during the operations phase, with the concurrent construction of additional surface facilities and underground emplacement areas. However, if these services have been integrated during the preceding phases, the transition from construction to operations should be accomplished with minimal difficulty. The primary personnel will already be trained, and equipment and communications will be in place. Additional personnel will be required to deal with expanded shift work and the change in orientation required for operations, but will essentially be a continuation of prior activities, with new tasks and NRC required training added.

Appendices E and F present working drafts, in tabular form, of discussions of Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies, and Possible Nye County Support for DOE Order 440.1A, Worker Safety and Health.

7.4 Closure and Post-Closure Phases

The closure of the repository will result in the release of many of the public safety personnel. Some may move out of the area, but many will probably be absorbed by local communities. Integrated facilities will allow personnel and communities to plan for the change, as they will be fully aware of closure details. Security and fire protection operations will continue, probably at a greatly reduced scope. Again, the integration of the public safety functions will ensure that those involved are fully aware of the continuing closure and post-closure requirements for security, fire, and monitoring of the repository.

Adequate personnel and facilities would remain available to support any on-going DOE activities during the post-closure period, including any post-closure monitoring program required by the NRC as a condition of closure and license termination.

8.0 PUBLIC SAFETY MANAGEMENT PLAN

Nye County proposes a management plan that would facilitate administration of the DOE/Nye County public safety agreement for comprehensive, integrated public safety services. Due to the extensive coordination and direction required of a fully integrated operation at the repository and in the surrounding area, a full-time management position, such as Public Safety Director (PSD), should be developed. The PSD would be a Nye County employee responsible for all Nye County public safety activities at or in conjunction with the repository. This would give repository personnel a single point of contact for coordination of day-to-day issues and would ensure that Nye County concerns were adequately addressed. The PSD would work directly with the Nye County Manager and DOE Infrastructure Manager and, later, the Repository Site Operations Manager, with input on law enforcement operations from the Nye County Sheriff. Coordination between the County Manager, working under the direction of the BOC, and the Sheriff would be required to develop the PSD position description. A candidate for the position would probably require skills similar to those of a city or county manager, such as working knowledge of the services and support to be provided, plus significant skills in communication, coordination, delegation, and report management. The PSD would be expected to have extensive education and experience, and to be compensated accordingly.

Figure 8 presents an organizational chart of possible agreement management structure.

8.1 Supervisory Requirements

In addition to being the point of contact between Nye County and the DOE, the PSD would supervise all Nye County operations serving the repository, and would administer all aspects of the agreement between the DOE and Nye County. Subordinate to the PSD would be the following Nye County personnel, if the positions were included in the agreement:

- Administrative staff to handle the reporting requirements of the DOE, OSHA, Nye County, and other agencies.
- Repository Fire Chief to command the site fire and rescue services.
- NCSO Captain to command the repository security and/or law enforcement groups.
- Repository Medical Director (i.e., a physician).
- Other supervisors of services provided by Nye County to the repository.

Each of the service directors would be responsible for the personnel assigned to them, for coordination with each other and their offsite counterparts, and would report to the PSD.

8.2 Administrative Requirements

Administrative requirements under any agreement between DOE and Nye County would include, but not be limited to, the following areas:

- Fiscal reports available to the county and the DOE showing agreement and budget status at all times.
- Billings to the DOE, showing detailed amounts spent for the billing period.
- Employee recruitment, testing, and selection information.
- Payroll data, with benefits and overtime payments for direct employees and those providing indirect services.
- Employee training and cross-training information.
- Compliance data for Equal Employment Opportunity.
- Detailed information about the purchase of goods and services, including advertising for and selection of vendors.
- Compliance data for disadvantaged, women-owned, and other purchasing targets.
- Incident reports for sensing equipment and personnel responses, and incident compilations by time periods and types, with restricted access to some incident data.
- Information on pre-incident planning, testing, and drills.
- Data on sensing equipment performance, adjustment, and repair.
- General project correspondence, records of DOE directions and responses, and requests to DOE for clarifications or modifications.
- Copies of project reports, such as needs assessments, annual audits, DOE assessments, and DOE Inspector General audits.
- Reports to the Nye County Manager, the Nye County BOC, and the Nye County Sheriff, concerning DOE questions, comments, and procedures; as well as all items concerning relations between the repository and Nye County.
- Reports to Nye County concerning requirements to meet future repository needs resulting from changes to repository phasing.

9.0 CONCLUSIONS

Developing a government-to-government Nye County/DOE agreement for integrated public safety services would result in significant savings for the DOE as opposed to contracting with a private firm. Such savings include avoided costs, such as federal and Nevada corporate taxes, which are difficult to estimate. By far the biggest cost avoidance would be the possible county exemption from overtime payments under the FSLA, which is unavailable to a private contractor. The Contract Work Hours and Safety Standards Act permits the DOE to apply to the Department of Labor for an exemption for a contract with a local government. For example, in an agreement between DOE, the Los Alamos National Laboratory, and Los Alamos County, New Mexico, for fire and emergency response, the Department of Labor exemption from the over 40-hour-per-week overtime requirement in the FSLA required that Los Alamos County pay overtime only for more than 53 hours. Los Alamos firefighters reportedly work a 56-hour average week, and receive regular pay for the first 53 hours and overtime pay for the last 3 hours. Other savings are in avoided indirect costs and corporate profits, which could be a significant annual savings for the DOE. Finally, Nye County has access to grant funding and other subsidies that are unavailable to a private contractor.

Similarly, Nye County would benefit from an agreement with the DOE, through enhanced fire, EMS, and NCSO capabilities. The first benefit would be a lower-cost, professional level of service resulting from DOE participation in funding the organization to meet its requirements and obligations. The second benefit results from significant pre-fire planning activities in anticipation of possible fire contingencies. The third is the availability of the advanced equipment technology necessary to protect the repository. A fourth benefit for residents in southern Nye County is possibly lower fire insurance premiums to businesses and residents due to the increased capabilities of the fire services. A fifth is fiscal benefits to the county through a fee allowance for management of fire and emergency response units, and/or any other services included in the agreement. Finally, the integration of services would provide additional employment opportunities to local residents.

Full integration of public safety and related services would result in long-term savings, since it would allow both the county and the DOE to be aware of intentions and initiatives which might affect them, and to give input before any impacts have taken place. Such integration would increase the awareness of each organization to effects possibly impacting the other, which might not be considered by a single private contractor if the effects of an action did not adversely impact that contractor.

10.0 RECOMMENDATIONS

DOE is preparing for and ultimately plans to develop and operate a repository and related facilities that will occupy a significant portion of the proposed land withdrawal area. Access to the facility must be controlled, with special NRC physical protection requirements applicable to the GROA and surrounding area. In addition to the nuclear and non-nuclear physical security services, DOE will require other public safety services, including law enforcement, fire and emergency medical services within the repository site area during repository development and operation. The municipal government of Nye County, the site county, provides these services (law enforcement, fire and emergency medical services) within its jurisdiction. Nye County therefore has the expertise and experience required to provide these same services to satisfy these DOE needs.

Due to continually evolving repository plans and schedules, it is recommended that consideration be given to the development of an open-ended or long-term agreement between the DOE and Nye County, with suitable flexibility to allow a coordinated response for law enforcement, fire, rescue, emergency medical, and related services. It is recommended that the agreement start with meeting the current repository needs for construction of the 510 Gate, and allow for flexibility in the provision of additional services as the project proceeds. The agreement should address the funding mechanism to allow Nye County to support the repository. When long-term funding is guaranteed, it appears that more will be gained by integrating the operations of each agency than a simple examination of expenses would indicate. Integrated operations appear to have significant advantages for both Nye County and the DOE.

In the future, additional consideration may be given to other areas of possible integration and cooperation between Nye County and the DOE. Possible areas for consideration include, but are not limited to, upgrading and maintenance of roads, building maintenance, solid waste management, and water and wastewater management.

In summary, this report recommends that Nye County and the DOE integrate public safety services in the repository and vicinity for the benefit of both organizations. It also recommends that Nye County and the DOE enter into an inter-governmental agreement to establish funding and cooperative status through subsequent phases of this public safety and related services integration initiative.

With Nye County and DOE agreement and funding, Phase II of the Cooperative Agreement to implement the recommendations of this report can be initiated.

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AGREEMENT FOR
CONSULTATION AND
COOPERATION BETWEEN
DEPARTMENT OF ENERGY AND
THE STATE OF NEW MEXICO
ON THE WASTE ISOLATION
PILOT PLANT

Updated April 19, 1988

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[The text herein reflects the current text including all amendments to April 1, 1985. The text is that contained in the original 1981 version except where noted in bold face type and annotated to reflect the date of amendment.]

AGREEMENT FOR CONSULTATION AND COOPERATION

This Agreement is entered into effective as hereinafter provided by and between the State of New Mexico (hereinafter referred to as the "State") and the United States Department of Energy (hereinafter referred to as "DOE").

WHEREAS, DOE is proceeding with plans for the Waste Isolation Pilot Plant project (hereinafter referred to as "WIPP") in New Mexico, as more fully described below;

WHEREAS, the parties recognize: (1) the United States Government's responsibility for national security; (2) DOE's responsibility for environmental aspects in developing procedures, systems and facilities for safe disposal of radioactive wastes arising from past and future conduct of the Nation's defense programs; and (3) the State's responsibility for the welfare of its citizens including, but not limited to, public health and safety, environmental and socioeconomic aspects of the transportation, handling, storage and disposal of radioactive wastes in New Mexico;

WHEREAS, the Department of Energy National Security and Military applications of Nuclear Energy Authorization Act of 1980, P. L. 96-164, attached as Appendix A, provides only with respect to WIPP that the Secretary of DOE shall enter into a written agreement with the appropriate State officials providing for consultation and cooperation with regard to the public health and safety aspects of the project;

WHEREAS, under P. L. 96-164 the State has the right to comment on and make recommendations with regard to the public health and safety aspects of WIPP;

WHEREAS, the Secretary shall receive, consider, resolve and act upon the comments and recommendations made by the State within time frames specified in Article IX of this Agreement; and

WHEREAS, the Agreement has been reached in accordance with P. L. 96-164.

NOW, THEREFORE, the parties agree as follows:

ARTICLE I - PURPOSE AND INTENT

- A. This Agreement affirms the intent of the Secretary to consult and cooperate with the appropriate officials of the State with respect to the public health and safety concerns of the State, and to give consideration to such concerns and cooperate with such officials in

resolving such concerns consistent with P. L. 96-164. It also affirms the intent of the Governor of the State to express such concerns in a timely manner and to make all reasonable efforts to cooperate with DOE in resolving such concerns.

- B. It is recognized that WIPP was an ongoing project at the time the parties commenced their negotiations of this Agreement. In the event the WIPP mission as described in Article VI of this Agreement is substantially changed, whether by amendment to P. L. 96-164 or otherwise, the parties may mutually agree to no longer be bound by this Agreement or provisions of it and the parties shall not be bound to comply with certain provisions of the Agreement if such changes in the WIPP mission make a particular provision impossible to perform or enforce. Any such agreement shall be reflected in a modification to this Agreement.
- C. The purpose of this Agreement, in carrying out the intent expressed in Paragraph A of this Article, is to designate Key Events; set time frames for review, comment and resolution of comments; and establish procedures for review of WIPP and for resolving conflicts.

ARTICLE II - DEFINITIONS

For purposes of this Agreement:

- A. The term "State" means the sovereign State of New Mexico, as represented by the Governor of the State of New Mexico or his duly authorized representative;
- B. The term "DOE" means the United States Department of Energy as represented by the Secretary or his duly authorized representative;
- C. The term "Secretary" means the Secretary of the United States Department of Energy, or anyone serving in that capacity, or any duly authorized representative of the Secretary;
- D. The term "public health and safety" means the potential impact upon the citizens of New Mexico resulting from activity attendant to WIPP, and includes any environmental effects which can impact the health and safety of New Mexico citizens;
- E. The term "defense waste" means radioactive wastes resulting from defense activities and defense programs of the United States Government exempted from regulation by the United States Nuclear Regulatory Commission. The term excludes any radioactive waste generated by the commercial nuclear power industry;
- F. The term "transuranic waste" or "TRU waste" means defense waste, other than high level waste or spent reactor fuel, containing alpha emitting

transuranic elements (including Uranium-223), with radioactive half lives greater than one year, in excess of 10 nanocuries per gram of waste;

- G. The term "high level waste" means defense waste, in the form of the solidified product of the first-cycle solvent extraction or similar process by means of which uranium and plutonium are recovered from irradiated reactor fuel;
- H. The term "Key Event" means a significant activity in the development, design, construction, operation and decontamination and decommissioning of WIPP;
- I. The term "Milestone" means an action which shall be achieved prior to the commencement by DOE of a Key Event; however, it is recognized that there may be revisions to Milestone documentation after commencement of the Key Event involved; and
- J. The term "Working Agreement" means the document, incorporated herein by reference as Appendix B, which elaborates on the details of this Agreement and shall be further developed pursuant to this Agreement.

ARTICLE III - EFFECTIVE DATE

As required by P. L. 96-164, this Agreement shall become effective upon the elapse of forty-five days while Congress is in session unless the Committees on Armed Services of the Senate and House of Representatives, in writing, waive any portion of such forty-five days; the forty-five days to commence running upon submission of this Agreement as signed by the parties to the Committees. DOE shall advise the State in writing as to the date on which the foregoing requirement has been fulfilled and such date shall be deemed to be the effective date of this Agreement.

ARTICLE IV - POINTS OF CONTACT

- A. The Chairman, Radioactive Waste Consultation Task Force, State of New Mexico, or such other person as designated by the Governor, is the principal representative of the State for maintaining liaison with DOE and for the consultation and cooperation process.
- B. The Manager, Albuquerque Operations Office, DOE (Manager, ALO), or anyone serving in that capacity, is designated by the Secretary as the principal representative of DOE for maintaining liaison with the State and for the consultation and cooperation process.
- C. The principal representatives may designate appropriate individuals or groups to conduct day-to-day activities for them.

ARTICLE V - MODIFICATIONS

- A. The parties to this Agreement recognize that future developments, including but not limited to changes in applicable law, including but not necessarily limited to P. L. 96-164, may make it desirable or

necessary for one or both parties to seek to modify this Agreement. Either party to this Agreement may request a review of the terms and conditions contained herein upon written notice to the other party, setting forth the modification or modifications requested together with the reasons therefor. The other party agrees to consider the requested modification or modifications, to respond to the request in writing and to enter into negotiations in good faith within 30 days of receipt of the request.

- B. Pursuant to P. L. 96-164, the Secretary shall notify the Committees on Armed Services of the Senate and the House of Representatives of modifications to this Agreement.

ARTICLE VI - WIPP MISSION

- A. P. L. 96-164 authorized WIPP as a defense activity of DOE for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from defense activities and defense programs of the U. S. Government exempted from regulation by the United States Nuclear Regulatory Commission.
- B. WIPP is intended to include receipt, handling and permanent disposal of defense transuranic waste and temporary storage for experimental purposes of a limited amount of high-level defense waste.

All of the high-level waste will be removed from the WIPP upon completion of the experiments and prior to decontamination and decommissioning of the facility. The transuranic waste will be subject to a period of retrievability prior to permanent disposal as set forth in the Retrievability Plan referenced in Article IV of the Working Agreement.

The WIPP FEIS analyzes the impacts on the public health and safety from the release of radioactive material from WIPP. DOE's position is that the bounds of these impacts are established by the estimated dose consequences, rather than by any of the particular characteristics of the waste to be emplaced at WIPP. It is the State's position that the impacts on public health and safety are bounded not only by dose estimates but by the site characterization, multiple containment barriers, QA programs, design criteria, operational controls, enforcement of safety programs and other good engineering practices. The analyses in the WIPP FEIS use the upper limit of 100 rem per hour as the maximum surface dose rate for a canister of remote handled transuranic (RH-TRU) waste and an expected maximum activity level of 23 curies per liter for the waste. The Record of Decision dated January 22, 1981 also limited the total volume of RH-TRU to be shipped to WIPP to 250,000 cubic feet.

A limited amount of RH-TRU waste, described below as falling within the 100 to 1000 rem per hour range, presently in existence has activity levels and characteristics which exceed the transuranic waste characteristics used in the WIPP FEIS. Since physically reducing such waste form to levels below 100 rem per hour may be impractical and since the WIPP Waste Acceptance Criteria (WAC) or its companion waste certification compliance requirements will permit exceptions to the WAC, the DOE will, prior to granting such exceptions for such waste and prior to the shipment of such waste: (1) perform analyses to ascertain the impact of such on the public health and safety, (2) consult with the State of New Mexico, including providing the State with a copy of the analyses for review and comment, and (3) provide to the State a period of forty-five (45) days to review and comment on such analyses prior to granting any such exceptions. In no instance will such an exception to the WAC be granted if it would cause a significant increase in the impacts on public health and safety discussed in the WIPP FEIS.

The DOE agrees that no defense RH-TRU with a surface dose rate in excess of 1000 rem per hour will be shipped to WIPP and that no more than 5% of the total volume of 250,000 cubic feet (or 12,500 cubic feet maximum) of defense RH-TRU shipped to WIPP will exceed 100 rem per hour surface dose rate. Defense RH-TRU waste shipped to WIPP will not exceed the 23 curies per liter maximum activity level (averaged over the volume of the canister). The total curies of defense RH-TRU shipped to WIPP shall not exceed 5.1 million curies. The concentrations of radionuclides in the RH-TRU canisters shall be determined by a procedure which shall include one or more of the following basic methods: (1) materials accountability; (2) classification by source; (3) gross radioactivity measurements; (4) direct measurements of major contributing radionuclides; or (5) such other methods as the parties may agree to.

Further, DOE agrees that the amount of defense high-level waste (DHLW) used on an experimental basis will not exceed 430,000 curies per canister and a total of 17.2 million curies. The DOE will disclose in writing to the State the upper limit of the surface dose rate of any DHLW canister to be brought to the WIPP for experimental purposes no later than February 28, 1985.

WIPP is not designed for the permanent disposal of high-level waste, nor has the WIPP site itself been characterized for such permanent disposal.
[as amended, November 1984]

- C. DOE, or its successor governmental agency, or the United States if no such agency, shall not abandon the WIPP site without decontamination and decommissioning having been completed, and DOE or its successor governmental agency, or the United States if no such agency, shall have the responsibility for ongoing post-closure institutional control at the WIPP site. As stated in the Working Agreement, the milestones and associated consultation and cooperation process provisions covering the decontamination and decommissioning of WIPP, including the consultation process concerning the length and extent of the post-closure institutional

control, shall be negotiated and resolved by the parties in the future, and at least one year prior to the start of the decontamination and decommissioning of WIPP.

[as amended, November 1984]

- D. The DOE will not permit subsurface mining, drilling, or resource exploration unrelated to the WIPP Project on the WIPP site during facility construction, operation, or after decommissioning. This prohibition also precludes slant drilling under the site from within or from outside the site. The "WIPP site" as used here means the 4 x 4 mile (10,240 acres) area consisting of sections 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33, and 34 of Township 22 South, Range 31 East, NMPM, in Eddy County, New Mexico; Sections 16 and 32 belong to the State and the exchange of those lands between the U.S. Department of the Interior and the State is pending.

At the conclusion of the WIPP project the DOE shall dispose of any residual salt tailings extracted from the WIPP site in an environmentally acceptable manner, to be determined in consultation with the State of New Mexico.

The DOE has no present intent to reorient the underground storage area toward the northern half of Zone II, as that zone is described in the WIPP Safety Analysis Report. In the unlikely event that DOE develops plans to reorient the storage area toward the north, DOE agrees to provide all available information and analysis regarding those plans to the State for review and comment at least forty five days before making a decision to reorient the storage area. If the State, after consulting with DOE about the State's comments, believes its concerns are still unresolved, the State may request that the matter be considered under the conflict resolution procedures set forth in Article IX of this Agreement.

[as amended, August 1987]

- E. 1. In carrying out this stated mission, DOE and WIPP will comply, at a minimum, with all applicable state, federal, and local standards, regulations, and laws, including any applicable regulations or standards promulgated by the Environmental Protection Agency. Compliance by way of grandfathering, variance, waiver, or exemption shall in no way prevent or stop the State from requiring any similar health and safety measures at WIPP under separate applicable authority, nor shall such compliance prevent or stop the State from seeking conflict resolution under Article IX, herein, to resolve disputes about such health and safety measures.

2. The Final Safety Analysis Report which will be issued by DOE prior to the receipt of waste will document DOE's ability to comply with the provisions of Subpart A of the Environmental Standards of the Environmental Protection Agency for the Management and Disposal of Spent Nuclear Fuel, High Level and Transuranic Wastes (40 CFR 191, Subpart A). Upon initial receipt of radioactive waste at the WIPP, and thereafter, the DOE will comply in all respects with the said Subpart A in effect at the time.

In addition, the DOE agrees to provide the State by February 1, 1988 with a Plan describing the steps which the DOE will undertake to demonstrate compliance with the assurance requirements contained in 40 CFR 191.14 of Subpart B of the EPA standards. This Plan will contain an estimated schedule and a description of the process DOE will use to: identify needed active institutional controls, gather data for the implementation of such controls, develop and implement a monitoring plan for the underground facility, define and implement a plan for passive institutional controls, determine the barriers to be used, assess the selection of the WIPP site in view of the resources at the site, and review the recoverability of the waste for a reasonable period after disposal.

Prior to receiving more than 15 percent by volume of the transuranic waste capacity of the Waste Isolation Pilot Plant, described as 6.2 million cubic feet of transuranic waste in the Waste Isolation Pilot Plant Record of Decision (46 Federal Register 9162, dated January 23, 1981), the Secretary of Energy shall demonstrate that the Waste Isolation Pilot Plant meets the applicable environmental standards for the disposal of radioactive waste established in Subpart B of such Environmental Protection Agency Standards (40 CFR 191, Subpart B), including the Assurance Requirements under such Subpart B, in effect at that time.

The parties are aware of the opinion issued by the United States Court of Appeals for the First Circuit in Natural Resources Defense Council, et al. v. United States Environmental Protection Agency, et al., Nos. 85-1915, 86-1096, 86-1097, and 86-1098 regarding the aforementioned 40 CFR 191 standards. While the standards are on remand to the EPA for reconsideration pursuant to the July 17, 1987 opinion in that case, DOE agrees to continue its performance assessment planning as though the provisions of 40 CFR 191 effective November 19, 1985 remain applicable.

3. DOE shall use both engineered and natural barriers to isolate the radioactive waste after disposal in compliance with the EPA Standards. The barriers shall include, as a minimum, properly designed backfill, plugs and seals in the drifts and at the entries to the panels, and plugs and seals in the shafts and drillholes.

4. The transportation of radioactive waste to WIPP shall comply with the applicable regulations of the U.S. Department of Transportation and any applicable corresponding regulations of the U.S. Nuclear Regulatory Commission. All waste shipped to WIPP will be shipped in packages which the Nuclear Regulatory Commission has certified for use.

[as amended, August 1987]

F. The foregoing statement of the WIPP mission is based on the WIPP mission authorized by Congress in P.L. 96-164. The parties recognize that all or part of the statement of mission in this Agreement for Consultation and Cooperation would not be binding on the parties if, in the future, Congress enacts legislation specifically related to the WIPP mission which conflicts with this statement of the mission. The parties further recognize that this Agreement for Consultation and Cooperation in no way relieves or alters, in any respect, any requirements or responsibilities imposed on DOE by any other federal laws or regulations including but not limited to the National Environmental Policy Act.

[as amended, November 1984]

ARTICLE VII - KEY EVENTS AND MILESTONES

- A. DOE shall consult and cooperate with the State as the project progresses through Key Events and Milestones identified in Paragraph C of this Article and in the Working Agreement. Such consultation and cooperation shall be on a regular, ongoing basis to facilitate an orderly process of State review and evaluation. It is recognized that neither the Key Events nor the Milestones so identified are necessarily sequential, particularly since some Key Events and Milestones may properly be carried on simultaneously under this Agreement.
- B. DOE shall give prior written notice to the State of its intention to commence Key Events identified in Paragraph C of this Article.
- C. The following are currently identified as Key Events:
1. Draft Environmental Evaluation;
 2. Preliminary Engineering - Title I;
 3. Final Environmental Evaluation;
 4. Site and Preliminary Design Validation (SPDV) Construction;
 5. Detailed Design - Title II;
 6. Construction of Exhaust and Waste Shafts;
 7. Construction of Waste Handling Building;
 8. Underground Development;
 9. Construction of Exhaust Filter Building;
 10. Computer Installation for the Facilities Alarm and Monitoring System;
 11. Operations;
 12. Retrievability Decision for TRU Waste;
 13. High-Level Waste Retrieval and Shipping;
 14. Decontamination and Decommissioning.
- [as amended, November 1984]
- D. Other significant activities may from time to time be agreed upon as Key Events or one or more of the above Key Events may be deleted or revised pursuant to the provisions of Paragraph A of Article I of the Working Agreement.

ARTICLE VIII - CONSULTATION AND COOPERATION

- A. DOE shall keep the State currently and fully advised relative to WIPP in accordance with this Agreement and the requirements of the Working Agreement so that the State may make independent reviews on public health and safety concerns relative to WIPP.
- B. The data, reports and other material to be furnished the State in order to meet the foregoing requirement as to a particular Key Event shall be identified in the Working Agreement as work progresses toward achieving that Key Event. The types of data, reports and other material DOE shall furnish the State include, but are not limited to, draft and final

environmental impact assessments and statements; technical reports and program plans; administrative and technical progress reports; the safety analysis report and amendments; construction and engineering design documents; and legislative land withdrawal proposals.

- C. In order for the State to make the independent reviews on public health and safety under this Article, the State shall have the right to conduct reasonable independent monitoring and testing of on-site activities related to the WIPP project; provided, however, that such monitoring and testing shall not unreasonably interfere with on-site activities.
- D. It is recognized that as activities on WIPP are carried on, the Milestones involved in particular Key Events shall be identified with more precision.
- E. The parties have negotiated a Working Agreement, identifying for each of the early Key Events the appropriate Milestones, the documents DOE is to submit to the State, the timing for such submissions, the timing for the State to identify public health and safety concerns and the process to be followed to try to eliminate those concerns before there is recourse to the procedure set forth in Article IX of this agreement. From time to time the Working Agreement shall be changed and added to as therein provided by agreement of the parties in consonance with the intent of this Agreement.
- F. The Working Agreement, as agreed upon and changed and added to from time to time, shall be part of this Agreement as Appendix B. Revisions to the Working Agreement consistent with the provisions of this Agreement shall not be considered as modifications to this agreement for purposes of Paragraph B of Article V of this Agreement.
- G. It is understood by the parties that the State may disseminate to the public copies of all data, reports and other material furnished the State by DOE pursuant to the provisions of this Article or other requirements of this Agreement and may elicit comments and concerns from the public thereon for communication to the DOE.
[as amended, November 1984]
- H. The parties recognize that neither DOE nor the State can require that New Mexico residents be employed by DOE and its subcontractors for the construction and operation of WIPP. Nevertheless, both parties agree that it is desirable, within the limits of the law, to encourage the employment of New Mexico residents. DOE agrees to establish with the State a monitoring and statistical reporting program for itself and its subcontractors in order to periodically report on the number of New Mexico residents hired and the steps taken to fully and effectively publicize the availability of WIPP jobs in New Mexico for prospective New Mexico employees. The details of this program will be agreed upon in writing by the State and DOE.
[as amended, November 1984]

ARTICLE IX - CONFLICT RESOLUTION

- A. In the event that actions under Article VIII of this Agreement do not satisfy the State's concern or concerns as to the public health and safety (including the identification of Key Events and Milestones), the principal representative of the State and the Manager, ALO shall meet to discuss the matter in detail. Within 10 calendar days after conclusion of the discussion, the Manager, ALO shall advise the State in writing what DOE action, if any, is contemplated with respect to the State's particular concern or concerns. If the State is not satisfied by the written determination of the Manager, ALO, the Governor shall notify the Secretary in writing within 10 calendar days of receipt of such determination that the State intends to invoke the provisions of this Article and the reasons therefor. The Governor may not delegate his authority under this Paragraph. A copy of the notification shall be furnished the Manager, ALO.
- B. Within 30 days after notification under Paragraph A of this Article, the principal representative of the State and the Manager, ALO shall appoint one (1) mutually agreed upon recognized, independent expert in the particular field involved as the conflict resolution hearing officer. The conflict resolution hearing officer may employ as many experts in the particular field or fields involved and support staff as he shall determine are necessary to assist him in making a recommendation or recommendations on the matter or matters before him.
- C. Within 15 calendar days after the appointment of the conflict resolution hearing officer, the principal representative of the State and the Manager, ALO shall each submit to the hearing officer a written statement of their respective positions and the basis therefor. The hearing officer may hear oral presentations by the State and the Manager, ALO.
- D. Nothing in this Article shall preclude the State or the Manager, ALO from asking for and receiving from the hearing officer a reasonable extension of the time limit set forth in Paragraph C of this Article for good cause, such as recourse to the advice of outside experts in the particular field or fields involved.
- E. The conflict resolution hearing officer shall compile and maintain an accurate record of all written submissions and a transcript of any oral presentations made to him pursuant to Paragraph C of this Article.
- F. The conflict resolution hearing officer shall consider all written submissions and oral presentations in the record and transcript required by Paragraph E of this Article and shall make written recommendations on the matter or matters before him which shall refer to the specific facts in that record relied upon by him. The responsibility for making written recommendations under this Paragraph shall not be delegated by the conflict resolution hearing officer.

- The conflict resolution hearing officer shall transmit his written recommendations along with a copy of the record and transcript to the Secretary, the principal representative of the State and the Manager, ALO within 30 calendar days following his receipt and consideration of all written submissions and oral presentations authorized by Paragraph C of this Article.
- H. Within 10 calendar days following receipt of the written recommendations of the conflict resolution hearing officer and the record and transcript, the Governor and the Manager, ALO may submit their own written comments and recommendations to the Secretary which shall be made a part of the record required by Paragraph E of this Article. An information copy of any such comments and recommendations by either party shall be transmitted to the other party.
- I. Within 25 calendar days following receipt of the written recommendations of the conflict resolution hearing officer and the record and transcript, the Secretary shall issue a written decision on the matter or matters before him which shall include the basis in the record for such decision and shall constitute final agency action on and resolution of the matter or matters under this Agreement. Issuing a decision under this Paragraph may not be delegated by the Secretary. Copies of the decision shall be transmitted to the Governor and the Manager, ALO.
- J. Upon notification to the Secretary under Paragraph A of this Article that the State intends to invoke this Article, DOE shall not commence any Key Event if the commencement of such Key Event is inconsistent with the concern or concerns of the State under consideration under this Article unless specifically authorized in writing by the Secretary or agreed to in writing by the Governor. In the event that the Secretary decides to authorize DOE to commence any Key Event pursuant to the provisions of this Paragraph, that written authorization shall include the basis for such decision and a copy of it shall be transmitted to the Governor at the same time that it is transmitted to the Manager, ALO. The Secretary may not delegate his authority under this Paragraph.
- K. The decision of the Secretary under Paragraph I of this Article shall be implemented by DOE.
- L. Nothing in this Article shall preclude the withdrawal, at the State's request, of a matter from further consideration under this Article.
- M. Nothing in this Article shall preclude the State from seeking written public input at the State level which shall be transmitted by the State to the conflict resolution hearing officer and shall be made part of the record required by Paragraph E of this Article; provided, however, that neither such solicitation of input nor the input itself shall delay the conflict resolution process beyond the time limitations set forth in this Article.

- N. Nothing in Article IX shall be construed to be a waiver by the State of New Mexico of judicial review of any final agency actions of the Secretary of DOE or of the Secretary's aforementioned written authorizations to commence Key Events.

ARTICLE X - DOE ASSISTANCE

The parties recognize that in order for the State to comment and make recommendations under this Agreement it must have adequate resources to carry out an independent review of WIPP. DOE shall continue to assist the State in obtaining the resources necessary for the State to undertake a meaningful independent review of the public health and safety aspects of WIPP.

ARTICLE XI - SCOPE OF AGREEMENT

- A. It is recognized that a number of State and U.S. Government agencies, in addition to the Task Force and DOE, have jurisdiction over various matters involving WIPP. This Agreement does not supersede, limit, modify, relinquish or waive the authorities, rights, jurisdictions or responsibilities of such agencies. The parties recognize that such authorities, rights, jurisdictions and responsibilities do not necessarily remove a matter from discussion.
- B. This Agreement is a binding enforceable agreement between the State of New Mexico and the Department of Energy. The provisions of this Agreement and the Working Agreement incorporated herein shall not be construed to limit, modify, relinquish or waive any right which the State, the U.S. Government or their citizens may have to seek administrative or judicial review of any action by the Secretary, DOE or the State on any matter relating to any activity conducted in connection with the WIPP project pursuant to any applicable regulation, law or constitutional provision of the State or the United States. Nothing in this Agreement shall confer or be deemed to confer any right to judicial review of any action by the Secretary except as otherwise provided by any applicable regulation, law or constitutional provisions of the State or the United States. The execution of this Agreement of itself does not constitute State approval of any specific past or future action or omission by the Federal Government with respect to the WIPP project.

[The original Agreement was signed by Governor Bruce King on behalf of the State of New Mexico on July 1, 1981, and by Secretary James B. Edwards on behalf of the United States Department of Energy on June 30, 1981. The First Modification to the Consultation and Cooperation Agreement was signed by Joseph Goldberg, Secretary of the Health and Environment Department and Chairman of the Radioactive Waste Task Force, on behalf of the State of New Mexico on November 27, 1984. It was signed by R. G. Romatowski, Manager, Albuquerque Operations Office, on behalf of the United States Department of Energy on November 30, 1984.]

APPENDIX A

PUBLIC LAW 96-164 (S.673); December 29, 1979

DEPARTMENT OF ENERGY NATIONAL SECURITY AND MILITARY APPLICATIONS OF
NUCLEAR ENERGY AUTHORIZATION ACT OF 1980

TITLE II - GENERAL PROVISIONS

WASTE ISOLATION PILOT PLANT, DELAWARE BASIN, NEW MEXICO

Sec. 213. (a) The Secretary of Energy shall proceed with the Waste Isolation Pilot Plant construction project authorized to be carried out in the Delaware Basin of southeast New Mexico (project 77-13-f) in accordance with the authorization for such project as modified by this section. Notwithstanding any other provision of law, the Waste Isolation Pilot Plant is authorized as a defense activity of the Department of Energy, administered by the Assistant Secretary of Energy for Defense Programs, for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States exempted from regulation by the Nuclear Regulatory Commission.

(b)(1) In carrying out such project, the Secretary shall consult and cooperate with the appropriate officials of the State of New Mexico, with respect to the public health and safety concerns of such State in regard to such project and shall, consistent with the purposes of subsection (a), give consideration to such concerns and cooperate with such officials in resolving such concerns. The consultation and cooperation required by this paragraph shall be carried out as provided in paragraph (2).

Consultation
and cooperation

(2) The Secretary shall seek to enter into a written agreement with the appropriate officials of the State of New Mexico, as provided by the laws of the State of New Mexico, not later than September 30, 1980, setting forth the procedures under which the consultation and cooperation required by paragraph (1) shall be carried out. Such procedures shall include as a minimum--

Written
agreement

(A) the right of the State of New Mexico to comment on, and make recommendations with regard to, the public health and safety aspects of such project

before the occurrence of certain key events identified in the agreement;

(B) procedures, including specific time frames, for the Secretary to receive, consider, resolve, and act upon comments and recommendations made by the State of New Mexico; and

(C) procedures for the Secretary and the appropriate officials of the State of New Mexico to periodically review, amend, or modify the agreement.

(3) As soon as practicable after the date on which the agreement referred to in paragraph (2) is entered into by the Secretary and the appropriate officials of the State of New Mexico, but not more than 15 days after such date, the Secretary shall transmit to the Committees on Armed Services of the Senate and the House of Representatives copies of such agreement, and a period of 45 days shall elapse while Congress is in session before such agreement becomes effective unless the Committees on Armed Services of the Senate and the House of Representatives, in writing, waive any portion of such 45-day period. The Secretary shall promptly notify such committees of any amendment or modification made to such agreement under paragraph (2)(C).

(c) No law enacted after the date of the enactment of this Act shall be held, considered, or construed as amending, superseding, or otherwise modifying any provision of this section unless such law does so by specifically and explicitly amending, repealing, or superseding this section.

Approved December 29, 1979.

Submittal to
congressional
committees

APPENDIX B

WORKING AGREEMENT FOR CONSULTATION AND COOPERATION

This Working Agreement for Consultation and Cooperation forms part of the Agreement for Consultation and Cooperation between the State of New Mexico (hereinafter referred to as the "State"), as represented by the Chairman, Radioactive Waste Consultation Task Force, and the United States Department of Energy (hereinafter referred to as "DOE"), as represented by the Manager, Albuquerque Operations Office (hereinafter referred to as the "Manager, ALO"), and is identified as Appendix B.

ARTICLE I - PURPOSE AND INTENT

- A. This Working Agreement is designed as a dynamic document which sets forth the working details of the consultation and cooperation process contemplated by the underlying Agreement for Consultation and Cooperation. The Manager, ALO and the State shall revise this Working Agreement from time to time as is agreed to be mutually desirable to facilitate and maximize the benefits of the intended process of consultation and cooperation. Any revision may be initiated at the written request of either party setting forth the revision or revisions requested together with the reason or reasons therefor. The other party shall consider the requested revision or revisions, shall respond to the request in writing and shall enter into negotiations in good faith within 30 days of receipt of the request.
- B. It is agreed that the process described in this Working Agreement for the Key Events and Milestones shall establish the general pattern to be followed in the consultation and cooperation process, subject to such improvements as are deemed desirable by the parties, for the additional Key Events and Milestones to be added to this Working Agreement.

ARTICLE II - GENERAL

- A. DOE shall give prior written notice to the State of its intention to commence Key Events identified in this Working Agreement.
- B. If the State has any concern or concerns as to public health and safety, the State shall use its best efforts to advise DOE on such concerns (sic) or concerns within the time frames specified in this Working Agreement; provided, however, that notwithstanding any time frames specified in this Working Agreement, the State may at any time advise DOE of its concern or concerns as to public health and safety. It is recognized, however, that the status of WIPP at the time the State raises a concern may in itself place a limit on DOE's ability to accommodate the concern.
- C. The State and DOE shall discuss the State comments with a view toward providing clarification and satisfying any concerns the State may have as to public health and safety. It is recognized that this shall be an ongoing process, with all reasonable efforts being made to resolve the matter by both parties at the lowest level of local authority.

- D. In the event that actions under Paragraph C of this Article do not satisfy the State's concern or concerns as to the public health and safety, the provisions of Article IX of the underlying Agreement shall be followed.
- E. The parties recognize that prior consultation cannot be carried out for those Key Events or Milestones that have already commenced or been completed, such as Title I design. However, the State may comment and make recommendations on Key Events and Milestones completed or underway.
- F. Where a State or Federal permit is a prerequisite to any action by DOE (e.g., access roads, site development or discharge of pollutants), that action shall not be carried out until the appropriate permit has been obtained.
- G. The data, reports and other material to be furnished to the State by DOE and to DOE by the State for each Key Event after commencement of that Key Event shall be as agreed to by the Manager ALO and the State. Each such agreement shall be reflected in a written modification to this Working Agreement.

ARTICLE III - SAFETY ANALYSIS REPORT

- A. The Safety Analysis Report (SAR), as amended from time to time, constitutes the most comprehensive document concerning WIPP both in general and specifically as related to public health and safety as well as other matters. The SAR is a dynamic document describing all aspects of the WIPP design and shall be amended by way of revision and additions throughout the entire WIPP project. The degree of detail provided in this Article aids in the negotiation of Article IV of this Working Agreement.
- B. DOE shall furnish to the State the various chapters of the SAR and amendments to the SAR in order to afford the State both the opportunity to review these chapters and amendments and the opportunity to express to DOE any public health and safety concerns the State may have. It is anticipated that the furnishing of this material, the State's review, the State's comments and recommendations and DOE's response shall be an ongoing process in accordance with the procedures identified in Paragraphs C and D of Article II of this Working Agreement. The State shall be represented by the Director of the State's Environmental Evaluation Group in matters relating to review of, and comments and recommendations on, the SAR and amendments and references thereto.
- C. The SAR shall contain the following material:

Chapter 1 - Introduction and General Description

This chapter provides an overview of WIPP and sets forth general information on specific features of WIPP. Included is information on:

1. Location;
2. Mission;
3. Organization;
4. Facilities - both surface and underground;
5. Operations - including retrieval; and
6. Research and Development programs.

Chapter 2 - Site Characteristics

Information is included in the following areas:

1. Geography and Demography - including details on location, site description, traffic patterns, population distribution, land and water uses and agriculture;
2. Nearby Industrial, Transportation and Military Facilities - including current as well as growth projections;
3. Meteorology - including regional climatology, local meteorology, measurement programs, diffusion estimates, paleoclimatology and climatic changes;
4. Surface Hydrology - including a hydrologic description, floods, dam failures, effluents and chemical/biological composition of adjacent water courses;
5. Subsurface Hydrology - including ground water systems, utilization and monitoring;
6. Regional Geology - including physiography, geomorphology, history, stratigraphy, lithology, tectonics and pleistocene climate of the site region;
7. Site Geology - including further details for the site similar to 6 above;
8. Vibratory Ground Motion - including seismicity, tectonic activity and potential for earthquakes;
9. Surface Faulting - including discussions of capable faults and results of investigations to date;
10. Stability of Subsurface Materials and Foundations - including materials properties, soil and rock characteristics, ground water, design criteria and instrumentation; and
11. Slope Stability - including boring logs.

Chapter 3 - Principal Design Criteria

Specifically addressed are criteria on:

1. Definition of mission - including waste characterization, repository functions, storage capacities, retrievability and by-products;
2. Structural and mechanical design - including wind, tornado, flood, backfill, missile, seismic, snow, thermal and soil erosion;
3. Safety protection criteria - including confinement, handling, emplacement, retrieval, fire, explosion, radiological, criticality and mine safety;

4. Design classification - including definition of design classes and severe natural events; and
5. Decommissioning - including decontamination, backfilling, sealing, record maintenance and site markers.

Chapter 4 - Plant Design

This chapter provides a detailed facility description. This chapter shall be more frequently updated than any other SAR chapter to reflect the ongoing design and construction processes. Included are details on:

1. Location details;
2. Surface facilities - including all buildings for waste handling and support functions;
3. Shafts and subsurface facilities - including shafts and storage and experimental areas;
4. Service and utility systems - including ventilation, electrical, fire protection, waste water, salt handling, radwaste, transportation, alarms, maintenance, compressed air and underground fuel;
5. Emplacement and Retrieval - including equipment for all waste forms; and
6. Underground excavation equipment - including miners, roof bolters, etc.

Chapter 5 - Process Description

This chapter describes the processes utilized in transporting, handling, emplacing and retrieving all waste forms. Processes discussed include:

1. Contact-handled (CH) waste handling;
2. Remote-handled (RH) waste handling;
3. Experimental handling;
4. Plant generated radwaste;
5. General processes - including instrumentation, criticality safety and waste logging;
6. Underground excavation - including methods of materials handling, ventilation and backfill;
7. Control room;
8. Analytical Sampling; and
9. Retrievability of all waste forms.

Chapter 6 - Radiation Protection

This chapter is provided to address DOE requirements and existing federal laws governing occupational exposures, as well as to provide information on normal operation dose consequences. Information provided includes:

1. As low as reasonably achievable (ALARA);
2. Radiation sources;
3. Radiation protection;
4. On-site dose assessment;
5. Radiological control program; and
6. Off-site dose assessment.

Chapter 7 - Accident Analysis

This chapter provides the evaluation of potential impact on public health and safety of operational accidents which could result in off-site radiological releases. Specifically included are:

1. Accident classifications;
2. Source terms and analytical methods; and
3. Accident descriptions and actual analyses.

Chapter 8 - Long Term Waste Isolation Assessment

This chapter covers the long term impact on public health and safety following decommissioning and site control termination. Included are:

1. Identification of potential communication modes;
2. Modeling methods; and
3. Consequence analyses.

Chapter 9 - Conduct of Operations

This chapter provides information on facility operations specifically including:

1. Organizational structure;
2. Acceptance tests;
3. Training;
4. Operating procedures;
5. Security; and
6. Emergencies.

Chapter 10 - Operating Limits and Controls

This chapter provides limits on operation based on preservation of the assumptions used in the design and safety analyses. Specifically covered are:

1. Design Limits - including heat generation rates, waste content and containers;
2. Operating limits and surveillance requirements - including limits on conveyances, loading, underground fuel storage and backfill;
3. Design features;
4. Administrative controls; and
5. Guidelines for the operating organization - including monitoring instrumentation, electrical power systems and facilities.

Chapter 11 - Quality Assurance

This chapter provides information on organizational and administrative programs during site investigation, design, construction and operation. Quality Assurance programs are presented for each of the primary contracting organizations as well as DOE.

ARTICLE IV - KEY EVENTS AND ASSOCIATED MILESTONES

Where a Key Event has already commenced or been completed, DOE shall, at the State's request, review with the State the information already furnished by DOE to the State and provide such supplementary information as may be agreed upon. It is recognized, however, that DOE's ability to respond to any particular State concern may be limited after the commencement or completion of a Key Event or Milestone.

A. DRAFT ENVIRONMENTAL EVALUATION (already commenced)

1. Issuance of Geological Characterization Report - GCR

This background document has been furnished to the State.

2. Issuance of Draft Environmental Impact Statement.

- (a) DOE has furnished this document to the State.
- (b) The State has reviewed and commented in accordance with NEPA.
- (c) DOE has acknowledged the State's comments after holding additional hearings at the State's request.

B. PRELIMINARY ENGINEERING - TITLE I (already commenced)

1. Conceptual Design and Design Criteria

The State has been furnished this documentation.

2. Title I Design Report

- (a) The State has been furnished the technical portions of the Title I design report.
- (b) DOE shall furnish any supplements to these portions when completed.

3. Issuance of Safety Analysis Report (SAR) for Title I Design

- (a) The State has been furnished the SAR in five volumes.
- (b) The State's review is in progress and shall be an ongoing process.
- (c) DOE is responding and shall continue to respond to the State's comments.

- (d) Consultation shall continue.
- (e) DOE-initiated changes to the SAR shall follow this same ongoing process.

C. FINAL ENVIRONMENTAL EVALUATION (already commenced)

- 1. DOE Applications for State and Federal Permits or Approvals
- 2. Issuance of Final Environmental Impact Statement (FEIS)

DOE shall furnish copies to the State at the time of approval by the Secretary.

[as amended, April 1983]

D. SITE AND PRELIMINARY DESIGN VALIDATION (SPDV) CONSTRUCTION (already commenced)

1. Institutional (For Informational Purposes)*

- (a) FEIS and Record of Decision
- (b) Any required BLM cooperative agreement on land use
- (c) Any required right-of-way acquisition
- (d) Any leases that are required
- (e) All applications for State and Federal permits and clearances
- (f) All approved State and Federal permits and clearances

2. SPDV Design

Any State comments as to public health and safety concerns shall be provided to the DOE WIPP Project Manager within 60 calendar days after receipt of documentation from DOE. DOE shall respond to the State comments within 30 calendar days after receipt of such comments. Nothing herein shall preclude further discussions of the matter or any updates prepared by DOE. Reasonable time frames for State comments and DOE response to any DOE updates shall be as negotiated by the WIPP Project Office (WPO) and EEG.

- (a) Design Criteria
- (b) SPDV experimental program summary (SAR amendment - see Article III, Paragraph C, Chapter 1, item 6)
- (c) Technical portions of the SPDV design (furnished as discrete construction contract packages)

[as amended, April 1983]

3. Notification (For Informational Purposes)

- (a) 30 calendar day notification prior to site mobilization of first SPDV construction contractor
- (b) Baseline SPDV schedule summary

*Wherever documents are indicated in this Working Agreement as being furnished "for informational purposes", the furnishing of the documents is intended to provide background information for other Milestones or Key Events. While the State need not furnish comments, the State may discuss such documents with DOE under this Working Agreement.

E. DETAILED DESIGN - TITLE II (already commenced)
[as amended, April 1983]

1. Title I

(a) Title I design package

DOE has provided this documentation to the State. Any State comments as to public health and safety concerns shall be provided to the DOE WIPP Project Manager within * calendar days after receipt of documentation from DOE. DOE shall respond to the State comments within _____ calendar days after receipt of such comments. Nothing herein shall preclude further discussions of the matter or any updates prepared by DOE. Reasonable time frames for State comments and DOE response to any DOE updates shall be negotiated by the WPO and EEG.

[as amended April 1983]

(b) Title I design criteria

DOE has provided this document to the State. Any State comments as to public health and safety concerns shall be provided to the DOE WIPP Project Manager within _____ calendar days after receipt of documentation from DOE. DOE shall respond to the State comments within _____ calendar days after receipt of such comments. Nothing herein shall preclude further discussions of the matter or any updates prepared by DOE. Reasonable time frames for State comments and DOE response to any DOE updates shall be negotiated by the WPO and EEG.

[as amended, April 1983]

(c) Waste acceptance criteria

DOE has provided the Waste Acceptance Criteria document to the State. Any State comments as to public health and safety concerns shall be provided to the DOE WIPP Project Manager within _____ calendar days after receipt of documentation from DOE. DOE shall respond to the State comments with _____ calendar days after receipt of such comments. Nothing herein shall preclude further discussions of the matter or any updates prepared by DOE. Reasonable time frames for State comments and DOE response to any DOE updates shall be negotiated by the WPO and EEG.

[as amended, April 1983]

(d) SAR amendments

Reasonable time limits for State review and comment and the corresponding DOE response to the State shall be agreed upon between the EEG and the DOE WIPP Project Manager for each amendment.

[as amended, April 1983]

*Wherever in this Working Agreement time requirements are left blank, it is intended that such requirements be negotiated by the WPO and EEG.
[as amended, April 1983]

2. Institutional (For Informational Purposes)

FEIS and Record of Decision (furnished for informational purposes under IV.D.1 above)

3. Notification (For Informational Purposes)

Project Progress Report (monthly)
[as amended, April 1983]

F. CONSTRUCTION OF EXHAUST AND WASTE SHAFTS (TWO SHAFTS)

The following Milestones are currently established for this Key Event. Additional Milestones shall be negotiated in the future, as appropriate. State comments will be provided within 30 days of receipt of the final document for review unless otherwise noted.

1. Title II

- (a) Technical portions of the Title II design packages consisting of CCP-1D, including final construction drawings and specifications for the Exhaust Shaft and Waste Shaft.
- (b) Technical Portions of the Title II design packages consisting of CCP-1Fb, including final construction drawings and specifications for underground development (experimental areas).
- (c) Title II Amendments to the SAR. These amendments will reflect the cost reduced design of WIPP and the underground orientation of WIPP.

2. Institutional (for Informational Purposes)

- (a) Federal Land withdrawal - full facility administrative land withdrawal.
- (b) Lease acquisition.
- (c) All applications and approvals for State and Federal permits and clearances.

- (1) Air Quality Permit
- (2) Water Quality Permit
- (3) Approval to Install Septic Field(s)
- (4) Archaeological Mitigation
- (5) Rights-of-Way

3. Preliminary Geotechnical Suitability Determination

- (a) Basic data reports for Site Characterization
- (b) Dissolution of Evaporites in the Delaware Basin Report (SAND 82-0461)
- (c) DMG Hydrology Report (TME 3166)
- (d) Geohydrology of the Proposed WIPP Site - Los Medanos area,

Southeast New Mexico, USGS Water Resources Investigation #83-4016.

- (e) Exploration of Disturbed Zone (Data File Report on ERDA-6 and WIPP-12 testing)
- (f) Basic Data Report—Borehole WIPP-12 Deepening (TME 3148)
- (g) Site Deformation Report (SAND 82-1069)
- (h) Brine Reservoirs Report (TME 3153)
- (i) Breccia Pipe Report (USGS Open File 82-968)
- (j) Fracture Flow in the Rustler Aquifers Report (SAND 82-1012)
- (k) Hydrogeochemical Parameters of Fluid Bearing Zones in the Rustler and Bell Canyon Formations (SAND 83-0210)
- (l) Natural Resources Study Report (TME 3156)
- (m) Interim Policy Statement on Resource Recovery

4. Preliminary Transportation Evaluation

- (a) Radiological impacts under normal conditions
- (b) Radiological impacts under accident conditions

5. Preliminary Experimental Program

- (a) In-Situ Testing Plan for WIPP (SAND 81-2628)
- (b) Simulated Waste Experiments Planned for the Waste Isolation Pilot Plant (SAND 82-0547)

6. SPDV Site and Design Validation

- (a) Plans for SPDV Design Validation
- (b) Plans for SPDV Site Validation (WIPP-DOE-116)
- (c) Preliminary Design Validation Report, including field data
- (d) Results of Site Validation Experiments, including field data (sic)
- (e) Site Validation Summary Report containing a summation of the results of all experiments and studies conducted during the SPDV phase and site validation phase at least sixty (60 (sic) days prior to issuance of the Final Validation Declaration, i.e., the "Decision to Construct the Full WIPP Repository."

- (1) State and public shall have sixty (60) days in which to comment on the document.
- (2) DOE shall review, consider and respond to any State or public comments before entering a final decision to construct the WIPP repository.

7. Cost Reduction Program Environmental Analysis (WIPP-DOE-136)

8. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.

9. Notification

- (a) Final decision on permanent facility construction. At least 30 calendar days, DOE notification to the State prior to site mobilization of first construction contractor
- (b) Baseline master construction schedule
- (c) Site Operations Weekly Report
- (d) Project Progress Reports (monthly)
- (e) Interim Resource Recovery Plan (Complete)

[as amended, April 1983]

G. CONSTRUCTION OF WASTE HANDLING BUILDING

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Title II

- (a) Technical portions of the CCP 14 design package
- (b) Title II amendments to the SAR

2. Notification (For Informational Purposes)

- (a) Project Progress Reports (monthly)
- (b) Baseline schedule summary

3. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.

[as amended, April 1983]

H. UNDERGROUND DEVELOPMENT

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Title II

- (a) Technical portions of the CCP 1E design package
- (b) Title II amendments to the SAR

2. Notification (For Informational Purposes)

- (a) Project Progress Reports (monthly)
- (b) Baseline schedule summary
- (c) Results of geologic mapping of the tunnels, the scope of which will be determined by WPO and EEG.

3. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
[as amended, April 1983]

I. CONSTRUCTION OF EXHAUST FILTER BUILDING

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Title II
 - (a) Technical Portions of the CCP 19 design package
 - (b) Title II amendments to the SAR
2. Notification (For Informational Purposes)
 - (a) Project Progress Reports (monthly)
 - (b) Baseline schedule summary
3. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
[as amended, April 1983]

J. COMPUTER INSTALLATION FOR THE FACILITIES ALARM AND MONITORING SYSTEMS

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Title II
 - (a) Technical portions of the CCP 17 design package
 - (b) Title II amendments to the SAR
2. Notification (For Informational Purposes)
 - (a) Project Progress Reports (monthly)
 - (b) Baseline schedule summary
3. State shall have the opportunity to consult with DOE and comment on all materials contained in the draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
[as amended, April 1983]

K. OPERATIONS

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

Any State comments as to public health and safety concerns shall be provided to the DOE WIPP Project Manager within _____ calendar days after receipt of documentation from DOE. DOE shall respond to the State comments within _____ calendar days after receipt of such comments. Nothing herein shall preclude further discussions of the matter or any updates prepared by DOE. Reasonable time frames for State comments and DOE response to any DOE updates shall be as negotiated by the principal representatives of the parties.

1. Final facility

- (a) Final facility amendments to the SAR
- (b) Operating and Monitoring Plan
- (c) Final site emergency response manual
- (d) Periodic reports on progress of excavation and geotechnical conditions encountered for mining performed prior to this Key Event.

2. Pre-Operational Testing

Pre-operational Test Reports

3. Final Transportation Evaluation

- (a) Department of Transportation certification(s) of shipping cask(s) (For Informational Purposes)
- (b) Safety Analysis Report(s) on Packaging (SARP)
- (c) Information on the mode of transport and routing as available

4. Final Experimental Program

- (a) High level waste experimental plan and schedule including the continuing SWE
- (b) WAC and Certification Requirements for high level experimental wastes*.

5. Waste Certification

- (a) TRU Waste Acceptance Criteria (WIPP-DOE-069)
- (b) TRU Waste Certification Requirements
- (c) Quality Assurance Requirements for Certification of TRU Waste (DOE-WIPP 120)

*All sites' plans for all waste forms need not be complete to permit WIPP to start operations. Those sites shipping waste to WIPP must have approved plans covering the waste form being shipped.

- (d) Site Specific TRU Waste Certification Plans*. DOE shall provide to the State drafts of the WAC compliance procedures for each certifying facility and will consider State comments on these procedures before such procedures are finalized.
6. Acquisition of State Land
7. Legislative or Administrative Land Withdrawal (For Informational Purposes)
8. DOE shall provide the following investigation and reports to the State and allow for a 45 day review and comment period by State and general public. DOE shall consider and respond to such comments prior to the decision to transport any waste into the State for emplacement at the WIPP site:
- (a) Results of Simulated Waste Experiments:
Including all pertinent results and analyses of experiments as agreed upon by WPO and EEG.
 - (b) Final results of design validation experiments and results of continuing site research and development studies, including all pertinent results and analyses of investigations and experiments as agreed upon by WPO and EEG.
9. Notification (For Informational Purposes)
- (a) Seven calendar day notification prior to RH/CH TRU and high level waste retrievability demonstration
 - (b) Seven calendar day notification prior to expected start of operations (i.e., receipt of first waste)
 - (c) Project Progress Reports (monthly)
10. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
[as amended, April 1983]
11. Retrievability Demonstration.
- The objective of this activity is the demonstration of the retrievability of the three waste forms: i.e., remote-handled transuranic (RH-TRU), contact-handled transuranic (CH-TRU), and experimental defense high-level waste (DHLW), in accord with criteria established in WIPP-DOE-71, Design Criteria Waste Isolation Pilot Plant, as revised. DOE will provide to the State for its review and comment the following documents:
- (a) retrieval equipment design specifications for each waste form;
 - (b) retrievability demonstration plan for each waste form, which will include a summary of the demonstration procedures and techniques to be followed, the in situ conditions to be simulated, and the criteria for evaluating the results of the demonstration of the procedures and techniques:

- (c) report on the mock, onsite CH-TRU retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques;
- (d) report on the mock, onsite RH-TRU retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques;
- (e) report on each mock, onsite DHLW retrievability demonstration which documents the results of the demonstration of the applicable procedures and techniques.

The State shall review and comment on each report listed in paragraphs (c), (d), and (e) above in writing within sixty (60) days of its receipt. DOE shall consider and respond to such comments. The first shipment of each specific waste form or configuration of that form shall not occur until seventy-five (75) days after the DOE responds to the State's comments on DOE's report on the retrievability demonstration for that waste form or configuration. The State shall be invited to view the retrievability demonstrations.

The Manager, AL-DOE, shall advise the State in writing, on a quarterly basis, of the estimated first shipping date of each waste form.

12. Geotechnical Studies

As stated in WIPP-DOE-174, DOE will perform certain additional geotechnical studies at the WIPP site. The specific studies to be conducted for this purpose are listed at Appendix I and Appendix III to this Working Agreement. This list does not preclude performance of additional studies as needed to resolve scientific issues or questions. The parties may agree to amend Appendices I & II to this Working Agreement as needed in the future.

[as amended, March 1988]

DOE or its contractors will issue reports on these studies. The projected titles, anticipated completion dates for each report, and a detailed description of the scope of each will be provided to the State by March 31, 1985. Such information shall be incorporated herein as Appendix II to this Working Agreement.

The reports will be provided to the State for review and comment not later than January 1, 1988. A summary report on the additional geotechnical studies listed in Appendix I to this Working Agreement will be provided to the State by DOE not later than January 1, 1988. The State may, at its option, review and comment on such geotechnical studies and DOE's summary report.

The completion of these studies and the issuance of these reports may be concurrent with construction of WIPP, but will be completed and forwarded to the State prior to the shipment of any radioactive waste to WIPP or January 1, 1988, whichever is earlier.

[as amended, March 1988]

The State's position on these studies is that they will answer some remaining uncertainties about the site. The DOE position concerning these studies is as set forth in WIPP-DOE-174.
[as amended, November 1984]

L. RETRIEVABILITY DECISION FOR TRU WASTE

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Facility Performance Evaluation
2. Status of Experimental Programs (especially borehole plugging)
3. Final Geotechnical Suitability Determination (update of preliminary determination incorporating any additional data acquired)
4. Final Retrieval Plan (if retrieval is required)
5. Legislative land withdrawal (if not previously obtained)
6. Notification of Decision to Retrieve or Not to Retrieve
7. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
8. Periodic reports on progress of excavation and geotechnical conditions encountered for mining performed prior to this Key Event.

[as amended, April 1983]

M. HIGH LEVEL WASTE RETRIEVAL AND SHIPPING

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

1. Decommissioning and Decontamination Plan for Experimental Facility Underground Area
2. Transportation Modes and Routes (as available)
3. State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE Orders related to the health and safety considerations of the WIPP Project prior to promulgation of final Order(s) by DOE.
4. Periodic reports on progress of excavation and geotechnical conditions encountered for mining performed prior to this Key Event.

[as amended, April 1983]

N. DECONTAMINATION AND DECOMMISSIONING

The following Milestones are currently established for this Key Event. Additional Milestones, together with reasonable time limits for State comment and DOE response, shall be negotiated in the future, as appropriate.

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1. Decontamination and Decommissioning Plan, including any remaining borehole plugging, decontamination of surface facilities, and disposition of underground and surface facilities and equipment.
 2. Post-Closure Control Plan, including, but not limited to, active and/or passive control periods, specific organization responsibilities, control of resource recovery activities, active and passive control requirements, environmental monitoring and safety considerations. This plan will be implemented, and the implementation monitored, by DOE, its successor governmental agency or other designated federal agency.
 3. Retrieval of last experimental waste.
 4. Shipment offsite of last experimental waste.
 5. Public Health and Safety Radiation Standards Plan. This plan shall include a description of DOE's implementation of applicable public health and radiation protection standards in effect at the time the facility is to be decommissioned.
 6. The State shall have the opportunity to consult with DOE and comment on all materials contained in draft DOE orders related to the health and safety considerations of the WIPP Project prior to promulgation of final order(s) by DOE.
 7. Periodic reports on progress of excavation and geotechnical conditions encountered for mining performed prior to this key event.
- [as amended, November 1984]

ARTICLE V - INTERPRETATION AND IMPLEMENTATION

This Working Agreement shall be interpreted and implemented in a manner consistent with the underlying Agreement.

[The April 1983 amendments were made by Revision I to the Working Agreement signed by Robert P. McNeill, Chairman, Radioactive Waste Consultation Task Force, on behalf of the State of New Mexico on March 25, 1983, and by R. G. Romatowski, Manager, Albuquerque Operations Office, on behalf of the United States Department of Energy on April 8, 1983. The November 1984 amendments were made by the First Modification to the Consultation and Cooperation Agreement, previously described.]

[There are no Articles numbered VI thru XI.]

ARTICLE XII

The DOE agrees that the State of New Mexico may have one fixed air sampler at that point in the DOE's exhaust shaft air ventilation system referred to as Station A and one fixed air sampler at that point in DOE's system referred to as Station B. The parties understand that the State's fixed air sampler for Station A will extract a sample inside the exhaust shaft at approximately the same location below the surface as the DOE system. The location of Station B will be selected based on probe and duct studies and the ability to obtain a representative sample of the exhaust effluent.

The placement of the fixed air samplers and the design of the probe(s) to be used in the samplers will be decided upon after completion of the assessment being conducted by consultants from Texas A&M and the peer review panel formed by the DOE. Installation of the State's samplers shall take place in conjunction with installation of DOE's changes in its system.

The DOE and the State will exchange with each other both the gross results and the analytical results of samples taken by their respective sampling systems.
[as amended, March 1988]

APPENDIX I

to

WORKING AGREEMENT

Additional Geotechnical Studies

- 1.(a) Investigate the depression of the marker beds in the lower part of the Salado Formation, centered two miles north of the WIPP shafts (this structure is generally referred to as the "FC-92" structure).

DOE will investigate this depression by drilling the hole DOE-2. This hole will be drilled into the Delaware Mountain Group (DMG) Formation. It will be a multi-purpose hole, the primary purpose of which will be to answer the question about the origin of the marker bed depressions in the Salado Formation at this location. The secondary objectives will be to gather information about the Rustler and the DMG hydrologic parameters. In the event brine is encountered in the Castile, the DOE may examine the DMG elsewhere rather than deepen DOE-2.

- 1.(b) Provide data and any interpretive reports on artesian heads encountered at the levels of Salado and Castile Formations.

DOE has collected data of possible relationship to the origin of the artesian heads which have been encountered at the levels of the Salado and Castile Formations at several deep boreholes, including AEC-7, WIPP-12 and Cabin Baby. DOE plans to undertake a further investigation at DOE-2 to determine the origin of such heads if artesian heads are encountered at that location. Data related to such heads from these deep boreholes, together with any interpretative reports thereon, will be made available to the State.

2. Perform hydrologic testing of the Rustler water-bearing zones.

Perform hydrologic testing at three-well hydropads at H-3 and H-11; long-term flow-tests at H-3; single well testing at several existing wells.

3. Perform tracer testing in the Rustler aquifers.

Perform convergent tracer tests at hydropads H-3 and H-4.
[as amended, March 1988]

4. Obtain water-chemistry data for the Rustler aquifers.

Obtain water samples from several boreholes and different water-producing horizons in the Rustler Formation where such sampling has not already been done. Analyze these for major and minor dissolved constituents as well as for environmental isotopes such as, C-13, C-14, U-234, U-238, Ra-226, O-18/16 and H-2/1, to aid in the determination of flow-paths, groundwater velocity and the recharge/discharge areas.

5. Conduct a water balance study for the WIPP site.

This study should try to answer the question of recharge and discharge; infiltration characteristics of surficial materials; evaporation from the WIPP ground surface, and from the lakes and the Pecos river; and the overall balance of the movement of water through the formations overlying the Salado at the WIPP site.

6. Perform computer modeling of groundwater flow and solute transport through the Rustler aquifers.

Using the information obtained from the work described in items 2 to 5 above, perform computer modeling of groundwater flow and solute transport through the Rustler.

7. Study the mechanics of removal of salt from the Rustler Formation at and near the site.

Questions to be addressed by this study include, (a) more precise areal definition of removal of salt from various zones in the Rustler (b) locations, characteristics and thickness of dissolution residues in the Rustler (c) recharge and discharge paths of fresh water and brine used in the dissolution process, and (d) the timing and the rate of dissolution.

8. Delineation of Castile brine.

Evaluate and field-test non-invasive geophysical methods near the existing WIPP Project related deep boreholes to identify and delineate possible occurrences of brine in the Castile Formation. DOE will consult with EEG prior to the selection of such methods to be tested. If a method shows results which agree with interpretative data from existing drill holes, conduct a survey over the repository using this method to delineate possible occurrences of brine.

9. Investigation of suspected "Dolines."

Investigate some of the prominent depressions at the site and in the surrounding area to address the question of their origin, particularly the suspicion of at least some of these being "dolines."

10. Study of MB-139.

Study the marker bed 139 underlying the repository horizon to determine its composition, structure and origin and the origin of brine and gases apparently associated with it.

[Appendix I was added by the November 1984 Modification]

APPENDIX II

TO

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Reports to be Issued by DOE on
the Additional Geotechnical Studies

Study 1a

1. Projected Title and Availability: "Technical Report for DOE-2" (3/86).

Description: This report will describe the drilling history, general stratigraphy, structural extent of the DOE-2 depression, and results of hydrologic testing of DOE-2. The hydrologic test data will be used to: 1) estimate the permeability of distinct zones within the Rustler, 2) determine if any appreciable permeability is present in the Salado or the Castile, 3) determine hydraulic properties of the upper portion of the Bell Canyon Formation (unless pressurized brine is encountered in the Castile). Drilling, coring, and core descriptions will be used to determine structural elevation of units and assess whether or not there is evidence of evaporite dissolution.

2. Projected Title and Availability: "Geologic Structures within the Salado and Castile Formations in Hole DOE-2" (5/86).

Description: The major objective of this report will be to describe the structures and, if possible, determine their origin. This will include an analysis of drilling, coring, and core description data to: 1) determine the structural extent the depression of the marker beds, 2) assess whether or not evaporite dissolution has occurred within the Salado and/or Castile Formations, and 3) describe any significant deformation features encountered within the Salado and/or Castile Formations.

Study 1b

Projected Title and Availability: "A Compilation of Hydrologic Data from the Salado and Castile Formations at the WIPP Project" (3/86).

Description: This report will compile hydrologic (Artesian head) data from the Salado and Castile Formations from holes drilled for the WIPP Project. This will include AEC-7, WIPP-12, Cabin Baby, and previously unpublished U.S.G. data. This report will also include data from DOE-2 (see Study 1a).

Study 2

1. Projected Title and Availability: "Hydrologic Data Reports" (6/85 - 6/87).

Description: This is a series of five reports that will present existing hydrologic data and to report future data in a timely manner. The first two reports will be used to publish the existing hydrologic data. Subsequent reports will present data as it becomes available. For the most part, these reports will contain "raw" data, without interpretation, but with sufficient annotation to allow an interpretation to be made. This will include data from hydrologic testing, tracer studies, and synoptic pressure surveys.

2. Projected Titles and Availability:

"Multi-Pad and Single-Pad Aquifer Tests of the Culebra Dolomite at Hydropad H-3" (6/86).

"Hydraulic Testing of the Culebra Dolomite at H-11" (8/86).

Single-Well Hydraulic Testing of the Rustler Water-Bearing Zone" (3/87).

Description: As the hydrologic test data are analyzed and interpreted, a series of interpretative reports will be prepared. These reports will include complete annotated listing of the test data, descriptions of the tested wells and instrumentation, testing histories, full explanation and documentation of the analysis techniques employed, analysis and/or numerical modeling of results, and interpretation of results. Reports will be prepared for multi-well testing on individual pads and for the large-scale pumping test(s). Single-well testing will be described in a separate report.

Study 3

1. Projected Title and Availability: "Hydrologic Data Report" (6/85 - 6/87).

Description: The data from all tracer tests conducted to date will be reported in the first "Hydrologic Data Report." These data will be "raw," with no interpretation provided. Data from future tracer testing will be presented in the appropriate hydrologic data reports.

2. Projected Titles and Availability:

"Convergent-Flow Tracer Tests at Hydropad H-3" (1/87).

"Convergent-Flow Tracer Tests at Hydropad H-4" (10/86).

Description: These reports will include complete annotated listings of the test data, descriptions of the wells and instrumentation configurations, discussions of the chemical composition of the tracers used, testing histories, full documentation and explanation of the analysis technique employed, analysis and modeling of results, and interpretation of those results.

[as amended, March 1988]

Study 4

1. Projected Title and Availability: "Technical Report on Analysis of Water Samples from the Rustler Aquifers at the WIPP Site" (4/87).

Description: This report will discuss results of the groundwater sampling program with respect to refined site characterization. This will include a discussion of the development of sampling criteria, procedures, and analytical methods. Basic water quality data for each well will be presented along with a discussion of the evaluation, selection, and application of isotopic and other geochemical parameters.

2. Projected Title and Availability: "Hydrogeochemical Facies in the Rustler Formation at the WIPP" (1/88).

Description: This report will compare the solutes with host rock mineralogies at and between various well sites. This report will not apply an interpretative-origin model at each site, but will attempt to delineate hydrochemical facies in the Rustler Formation. An additional comparison of these facies with flow patterns derived solely from physical hydrology will be made for purposes of examining internal consistency.

Study 5

Projected Title and Availability: "A Regional Water Balance for the WIPP Site and Surrounding Area"; SAND84-2233 (3/85).

Description: This report contains discussions and compilations of available data concerning precipitation, evaporation,

water-table elevations, storage in lakes, irrigation, municipal use, potash refining, oil-field flooding, and dumping for the Pecos River drainage basin between Artesia and the Texas/New Mexico state line. This compilation includes detailed discussions of the sources of data, data uncertainties, and the ways in which the type of data contribute to the calculation of a water budget in the vicinity of the WIPP.

Study 6

Projected Title and Availability: "Groundwater Modeling Study of the Rustler Aquifers" (1/88).

Description: The modeling and interpretation in this report will deal with relatively "undisturbed" hydrologic conditions and will involve only transport of "naturally occurring" solutes. It will be an integral part of activities aimed at a refined site characterization of the WIPP site. The computer modeling will incorporate interpretations of Rustler stable-isotope and geochemical data.

Study 7

1. Projected Title and Availability: "Dissolution of Halite and Gypsum, and Hydration of Anhydrite to Gypsum, Rustler Formation, in the Vicinity of the Waste Isolation Pilot Plant, Southeastern New Mexico"; U.S. Geol. Survey Open - File Report (12/85).

Description: This report will present an interpretation of evaporite dissolution within the Rustler in the vicinity of the WIPP site based on correlation of geophysical logs. It will include a description of lateral variability and evaporite dissolution within the Rustler Formation, based on detailed correlation of a small number of geophysical logs from holes at and near the WIPP site.

2. Projected Title and Availability: "Facies Variability and/or Evaporite Dissolution Within the Rustler Formation in the Vicinity of the WIPP Site, Southeastern New Mexico" (7/87).

Description: This report will present the overall mineralogy and a detailed lateral correlation within the Rustler Formation in the vicinity of the WIPP. Included will be a detailed investigation of Rustler core from holes at and near the WIPP, as well as from at least one hole within Nash Draw. Emphasis will be placed on interpretation of sedimentation versus dissolution as the origin of lateral variability within the Rustler, especially relative to clay-rich zones often interpreted as dissolution residues. The work will include detailed lateral

correlations within the Rustler. The work will also include a general petrographic and mineralogical description of the Rustler Formation as a whole.

Study 8

Projected Title and Availability: "Evaluation of the TEM Method for Identification of Castile Brine Occurrences near the WIPP Site, Southeastern New Mexico" (3/86).

Description: This report will describe the trial field surveys using TEM. A comparison between CSAMT and TEM methods and results within the survey area will be included, as will a correlation of MT methods to drillhole data concerning Castile brine occurrences. On the basis of these geophysical field trials, DOE will consult with EEG to decide if a geophysical method shows significant promise to conduct a survey over the WIPP repository to identify and delineate possible occurrences of brine in the Castile Formation.

Study 9

Projected Title and Availability: "Assessment of Near-Surface Dissolution in the Vicinity of the Waste Isolation Pilot Plant"; SAND84-7178 (2/85).

Description: This report presents the results of a field study of the distribution of near-surface dissolution phenomena in the WIPP site and Nash Draw area. The structures possibly resulting from dissolution are considered in terms of their relationships with the Gatuna Formation and the Mescalero Caliche. The approximate age and magnitude of past dissolution events are documented. The report includes a description and discussion of the field investigation of possible alluvial dolines in the vicinity of the WIPP site.

Study 10

Projected Title and Availability: "Marker Bed 139: A Study of Drillcore from a Systematic Array" (2/85).

Description: This report describes the macroscopic internal structure and mineral composition of Marker Bed 139 based on core from five holes drilled specifically for this purpose. The undulatory upper surface is described and sedimentary versus deformational interpretations of its origin are discussed. Fractures in the central part of the unit, which may provide local reservoirs for brine and gas, are described, and their origin is discussed in the framework of the sedimentary and erosional history of the Delaware Basin.

APPENDIX III
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The DOE agrees to perform certain additional studies in lieu of the sorbing tracer test. These studies are described below along with the target dates for completion of each study. Unless otherwise noted, each study will result in a report containing the analyses and results of the study.

A. Hydrologic characterization of the Rustler Formation

1. Conduct a multi-well flow test centered at H-11, to evaluate the high-transmissivity zone in the Culebra in the SE part of the WIPP site. One additional well (H-17) has been located in this area on the basis of the preliminary hydrologic model and electromagnetic surveys, and will be incorporated in this test. After completion and interpretation of the H-11 test, consideration will be given to drilling of an additional hole, if needed, to provide direct field confirmation of the high-transmissivity zone.

Target dates: Begin H-11 multi-well test: 2/88

Complete H-11 multi-well test: 5/88

Complete reporting of a multi-well test: 12/88

2. Conduct a conservative-tracer test at the H-11 pad. This test may necessitate drilling of a fourth hole near the H-11 pad, but at a sufficient distance from the pad to examine whether or not dual-porosity transport effects indeed decrease in importance with

increasing transport distance. If possible, the tracer test will be conducted as part of the H-11 multi-well interference test.

Target Dates: Begin H-11 conservative-tracer test: 2/88

Complete H-11 conservative-tracer test: 4/88

Complete reporting of H-11 tracer test: 12/88

3. Conduct additional radiocarbon studies on Rustler groundwater. The study will consist of two parts. At least 6 wells will be sampled to investigate further questions of contamination and system stability raised in SAND86-1054; completion of this study may require resampling of one or two wells known to be contaminated at the time of earlier sampling. In addition, several (approximately 10) new radiocarbon samples will be collected during sampling as part of the Water-Quality Sampling Program (WQSP), in the hope of obtaining direct evidence of groundwater residence times. Samples from the WQSP will be restricted to the near-WIPP environment (not including Nash Draw), and will include reasonable numbers of samples from both high- and low-transmissivity holes. Serious consideration will be given to conducting limited investigations of the metabolic pathways of modern vegetation at the WIPP, and to carbon analysis of both soil gas and soil carbonate, if evaluation indicates these studies would improve the confidence in modeling of WIPP release scenarios.

Target dates: Initiate additional radiocarbon sampling of Rustler fluids: This has already taken place, with 10/87 sampling of H-17.

Indicate additional radiocarbon analyses: 4/88

Complete reporting of additional radiocarbon analyses: 9/89

4. Complete the ongoing investigation of the areas and mechanisms of recharge to the water-bearing units of the Rustler. This ongoing study consists of an investigation of water levels in existing wells north and northwest of the WIPP site. Particular effort has been made to characterize the nature and extent of a possible groundwater divide between Clayton Basin and Nash Draw. The data and interpretations from this study will be provided to NM/EEG, either as technical memos or as a separate SAND report, and will be used in regional hydrologic modeling of the Rustler Formation.

Target dates: Decision concerning conversion of existing memo records into separate SAND report: 12/87

Complete of transfer of technical information to NM/EEG: 6/88

5. Geophysical surveys to delineate the lateral resistivity variability in the Rustler Formation. Disagreement between recent geophysical interpretations and field results from drilling and testing of hole H-17 indicate limitations in the reliability of geophysical studies to determine lateral variability within the Rustler Formation. However, a geophysical anomaly of unknown origin is present at H-17. If it can be determined from analysis that this anomaly is related to the Rustler Formation, a limited geophysical program will attempt to determine its origin. The merit of extending geophysical studies of Rustler variability beyond H-17 will be evaluated after interpretation of the H-11 multi-well experiment and decision concerning studies near H-17.

Target dates: Determination of validity of additional studies in area of hole H-17 to determine origin of geophysical anomaly: 12/87

Scheduling of additional work in vicinity of H-17, if appropriate: 12/87

As noted, any additional work, other than in the vicinity of H-17, would follow interpretation of the H-11 multipad interference test, approximately 10/88-12/88

6. Development of a generalized three-dimensional regional flow model extending from the ground surface to the Bell Canyon Formation. Care will be taken that, over the long term, geologic and modeling expertise and interpretations developed as part of WIPP site-characterization activities are included in such modeling.

Target dates: Completion of regional-scale three-dimensional hydrologic modeling as part of methodology-development report: 3/88

Initiation of numerical modeling of "altered" zone around WIPP shafts: 10/88

Completion of mechanistic three-dimensional numerical modeling in vicinity of WIPP shafts: 10/90

Completion regional-scale three-dimensional hydrologic modeling as part of final performance assessment:
12/91

7. Development of transport models for the Culebra, following a high-pressure (brine-reservoir) breach. The objectives of this work will be to estimate the significance of fracture flow in contaminant transport, and to determine the most important variables in regional transport in the event of a high-pressure breach. The approach will be analogous to that already completed in SAND87-7105.

Target dates: This work is ongoing.

Completion of reporting: 6/88

B. Laboratory Studies Related to Sorption

1. Evaluation of the solute-rock interactions relevant to transport within the Culebra, to estimate the effects of such variable as fluid composition, natural and introduced organics, mineral-surface reactions, and sulfide content on distribution behavior of radionuclides within the Culebra Dolomite.

Target dates: Initiate detailed mechanistic studies: 6/88

Initiate semi-empirical sorption/reaction studies:

8/88

Complete semi-empirical studies: 10/90

Complete detailed mechanistic studies: 10/91

2. Experiments designed to determine the matrix diffusivity and effective porosity of intact material from representative lithologies from the Culebra Dolomite.

Target dates: This work is ongoing.

Complete matrix-diffusion tests with conservative tracers: 8/88

Initiate additional studies of effective porosity: 8/88

Complete additional studies of effective porosity of Rustler samples: 10/90

3. Column or fracture-flow experiments on Culebra wafers, cores, and blocks, using both conservative and reactive tracers and organic and inorganic fluid compositions relevant to WIPP breach scenarios.

Target dates: Initiate detailed planning for block, wafer, and column studies: 10/87

Complete planning and experimental design for final block, wafer, and/or column studies: 12/88

Initiate first part of block, wafer, and/or column studies: 10/88

Complete block, wafer, and/or column studies: 10/91

DOE recognizes that radionuclide retardation within the Culebra remains to be proven experimentally and remains committed to demonstrate experimentally the actual range of Kd's to be expected for transport within the Culebra. It is unlikely that transport will involve a single set of Kd values, and performance assessment likely must consider a range of values for each element. DOE will select, after consultation with the State, a range of values to be conservative, but reasonable, based on the lowest reasonable values experimentally obtained. In the absence of experimentally justifiable values, Kd will equal zero, i.e., no credit for retardation will be taken in the performance assessment calculations.

C. Pressurized Brine-Occurrence Investigations

1. Completion of the interpretation of geophysical investigations into the extent of pressurized brine in the Castile Formation underlying the WIPP facility.

Target dates: The reporting of these studies is completed in draft.

Completion of final reporting: 12/87

D. This was inadvertently left out. Section D does not exist.

E. Assessment of the Effect of Shafts on Rustler Hydrology

1. Repeat of the H-3 multi-well interference test, if specific conditions arise. The test would be repeated after interpretation of the H-11 multi-well test and the regional response to sinking of the WIPP air-intake shaft, but only if: 1) such interpretation reveals

significant remaining uncertainties in Culebra transmissivity near the site center; 2) such interpretation relies on non-documented variations in leakage rates into the WIPP shafts; and 3) it is agreed between DOE and the State that another site is not preferable to H-3. The opinion of DOE is that, even if conditions 1 and 2 above were met, a test at ERDA-9 or H-1 would be best to examine Rustler properties at and near the site center, while a test at DOE-1 would be best to examine variability over the southwest portion of the site.

Target dates: Decision concerning need for additional multipad interference testing of the Culebra Dolomite in the SW quadrant of WIPP site (dependent on review of data from H-11 multipad test): 7/88

Decision concerning the need for additional multipad interference testing of the Culebra Dolomite at and near the center of WIPP site (dependent on review of data from H-11 multipad test): 1/89

2. Monitoring of the regional response in several wells around the WIPP air-intake shaft as this shaft is drilled.

Target dates: Monitoring instrumentation is largely in place; continuous monitoring of Rustler response to shaft sinking will begin prior to the time the shaft penetrates the top of the Rustler Formation.

3. Proper instrumentation of the WIPP air-intake shaft with piezometers, to continuously monitor hydrologic behavior and parameters around the shaft.

Target dates: Instrumentation and testing of the air-intake shaft will depend upon the schedule of shaft completion and access. The present schedule is for access and instrumentation to begin early in FY89.

[as amended, March 1988]

APPENDIX A

COOPERATIVE AGREEMENT DE-FC29-88AL53813

AMENDMENT A059

TASKS AND ACTIVITIES

(PROJECT MANAGEMENT PLAN)

BACKGROUND

The Waste Isolation Pilot Plant (WIPP) is being operated near Carlsbad, New Mexico, to provide safe disposal of radioactive wastes resulting from the defense activities and programs of the United States. Public Law 96-164 states that the Secretary of Energy will "... consult and cooperate with the appropriate officials of the State of New Mexico, with respect to the public health and safety concerns of such state in regard to such project and shall ... give consideration to such concerns and cooperate with such officials in resolving such concerns." In order to comply with this requirement, the State of New Mexico (State) and the U.S. Department of Energy (DOE) entered into the Supplemental Stipulated Agreement (SSA) Resolving Certain State Off-Site Concerns over WIPP on December 27th, 1982.

The SSA requires DOE provide for the enhancement of the State's capability to adequately and effectively address its off-site concerns over WIPP. In order to meet this requirement, DOE and the State executed a Cooperative Agreement, Number DE-FC29-88AL53813, on July 26th, 1988. This Cooperative Agreement is the primary mechanism through which DOE has provided funding and other WIPP-related assistance to the State to date; it is renegotiated on a biennial basis. In light of provisions specified in the *WIPP Land Withdrawal Act of 1992* (Public Law 102-579), as amended, the parties envision the 1988 Agreement will continue to serve that function in the future.

Non regulatory state involvement with WIPP pertaining to environmental monitoring, waste management, and off-site response to an on-site emergency will continue to be addressed in a separate agreement (Agreement in Principle), entitled "Environmental Oversight, Monitoring, Remediation and Emergency Response," and corresponding Grant, Number DE-FG30-05EW03003, between DOE and the State of New Mexico.

STATEMENT OF WORK

The State will administer this statement of work on behalf of the U.S. Department of Energy, represented by its Carlsbad Field Office (DOE/CBFO), and in cooperation with participating state agencies. These participating state agencies include, but are not limited to, the Department of Health (DOH); Department of Public Safety (DPS); Energy, Minerals and Natural Resources Department (EMNRD); Environment Department (NMED); State Fire Marshal's Office (SFMO); and the New Mexico Department of Transportation (NMDT). The NMDT, however, receives no direct funding under this amendment to the Agreement.

Shipments destined for the WIPP will originate from ten (10) major DOE sites and possibly from other so-called Small Quantity Sites (SQS) throughout the United States. The initial shipments to the repository have been limited to contact handled transuranic (CH-TRU) waste. Remote-handled transuranic (RH-TRU) shipments are projected by DOE to commence in FY 2007. Activities to be conducted under this Statement of Work, as presented below, focus on the requisite preparations for these waste shipments.

TASK 1. TRANSPORTATION MONITORING ACTIVITIES

Completion of this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health and the environment from those risks posed by WIPP transportation activities.
- Minimizing, to a significant degree, the potential for the occurrence of a WIPP transportation accident.

- Addressing and facilitating the resolution of outstanding WIPP transportation accident prevention issues.
 - Improving coordination and communications among affected entities in the area of WIPP transportation accident prevention.
 - Ensuring the development and implementation of adequate, effective WIPP transportation accident prevention measures in New Mexico.
- I. State activities under this task include the following:

- A. Monitor and/or participate in relevant activities of the Commercial Vehicle Safety Alliance (CVSA); Cooperative Hazardous Materials Enforcement Development (COHMED) National Conferences; New Mexico Hazardous Materials Safety Board; National Conference of State Legislatures; Interim joint Radioactive and Hazardous Materials Committee of the New Mexico Legislature; Radioactive Waste Consultation Task Force; U.S. Departments of Energy and Transportation; and other appropriate organizations.

Deliverable: Documentation of relevant information from monitoring and/or participation in activities of the preceding entities. Such documentation will be included in Progress Reports required under Appendix D of this amendment to the Agreement.

- B. Meet with appropriate personnel at the federal, state, tribal, and local levels of government, as well as with interested and affected members of the general public, to establish and/or maintain effective communications and coordination regarding WIPP transportation accident prevention.

- C. Develop, implement, and, as necessary, revise plans, procedures and protocols for the prevention of WIPP transportation accidents. The referenced plans and procedures are identified in the subsections C (1) through C (6). Consult with appropriate personnel at the federal, state, tribal, and local levels of government, particularly the DOE/CBFO and the WGA Advisory Group, as well as with interested and affected members of the general public, in the development, implementation and revision of such plans, procedures and protocols. The "accident prevention" component of the State's WIPP Transportation Safety Program includes:

Record Keeping Audits to ensure high-quality drivers and carrier compliance with contract/regulatory requirements. These audits are currently being conducted by the State of Colorado on a periodic (quarterly/semi-annual) basis using a checklist developed in consultation with DOE and the WGA Advisory Group. The State will review and comment on the audit checklist and audit findings and make recommendations.

Deliverable: Provide DOE/CBFO a copy of any review comments on the audit checklist or on actual audit findings and recommendations.

Independent Inspections (mechanical and radiological) of WIPP shipments. These inspections will utilize the most current version of "Recommended National Procedures for the CVSA Level VI Inspection for HRCQ and Transuranics (Enhanced North American Standard)" and CVSA Level II

developed under contract by the Commercial Vehicle Safety Alliance (CVSA) in coordination with DOE and the WGA Advisory Group. In New Mexico, point-of-origin CVSA Level VI inspections will occur at Los Alamos National Laboratory (and possibly Sandia National Laboratories); in route CVSA Level II and Level VI inspections will occur at Ports-of-Entry (POE); CVSA Level VI inspections will occur at roadside in the event of a WIPP vehicle mechanical breakdown; and CVSA Level VI point-of-destination inspections may occur at the WIPP site. CVSA Certified Enhanced Inspectors that have been granted state authority to perform inspections of motor carrier vehicles will conduct the CVSA Level VI inspections at the locations listed.

Deliverable: Documentation of review, testing and evaluation results will be provided DOE/CBFO. Certified CVSA Enhanced Refresher Training Instructors will assure all NM requirements are in compliance and implemented, as required by CVSA criteria.

Bad Weather / Road Procedures for handling adverse driving conditions. These procedures, developed initially by the WGA Advisory Group and then modified for application in New Mexico, will continue to be reviewed, tested and evaluated as opportunities arise.

Deliverable: Documentation of review, testing and evaluation results will be provided to DOE/CBFO.

Safe Parking Criteria for selection of appropriate areas to temporarily park WIPP vehicles in an emergency. These

criteria, developed initially by the WGA Advisory Group and then modified for application in New Mexico, will continue to be reviewed, tested and evaluated as opportunities arise.

Deliverable: Documentation of review, testing and evaluation results will be provided DOE/CBFO.

- (5) Advance Shipment Notification to allow adequate time for necessary preparations. The TRANSCOM system will be used as the primary mechanism for such notifications from DOE. Existing regional notification procedures, developed by the WGA Advisory Group, as well as specific protocols agreed to by the State and DOE/CBFO (i.e. living document entitled "WIPP Shipment Notification to New Mexico") will continue to be reviewed, tested and evaluated as opportunities arise.

Deliverable: Documentation of review, testing and evaluation results will be provided DOE/CBFO.

Shipment Monitoring using the TRANSCOM system to provide for near real-time tracking of WIPP shipments. TRANSCOM will continue to be tested and evaluated as opportunities arise.

Deliverable: Documentation of testing and evaluation results will be provided DOE/CBFO.

In general, regional plans, procedures and protocol developed by the WGA Advisory Group for WIPP Transport for the prevention of WIPP transportation accidents have been tailored for application in

New Mexico. The State will continue to actively participate in meetings and other activities of the WGA Advisory Group.

- D. Provide DOE/CBFO and other interested/affected entities copies of all final plans, procedures and protocol, or revisions thereto, for the prevention of WIPP transportation accidents in New Mexico.
 - E. Provide accurate and timely information on issues surrounding the State's WIPP transportation accident prevention activities, as requested by DOE/CBFO.
- II. DOE/CBFO activities under this task include the following:
- A. Monitor and/or participate, as deemed appropriate by DOE/CBFO in relevant activities of the Commercial Vehicle Safety Alliance (CVSA); Cooperative Hazardous Materials Enforcement Development (COHMED) National Conferences; N.M. Hazardous Materials Safety Board; National Conference of State Legislatures; Interim Joint Radioactive and Hazardous Materials Committee of the New Mexico Legislature; Radioactive Waste Consultation Task Force; and other appropriate organizations.
 - B. Provide accurate and timely information on issues surrounding DOE/CBFO's WIPP shipment campaign planning and transportation accident prevention activities, as requested by the State.
 - C. Cooperate with the State in establishing and/or maintaining effective communications and coordination within DOE/CBFO manpower and funding limits in the area of WIPP accident

prevention; and in reviewing plans, procedures and protocols for the prevention of WIPP transportation accidents.

Task 2. Transportation Emergency Response Planning Activities

Completion of this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health and the environment from those risks posed by a WIPP transportation emergency.
- Addressing and resolving any outstanding WIPP transportation emergency preparedness and response issues, including the clarification of roles and responsibilities among entities that may be involved in WIPP incident response and mitigation.
- Improving coordination and communications among affected entities in the area of WIPP emergency preparedness.
- Ensuring the existence of an adequate and effective WIPP transportation emergency response capability in New Mexico.

I. State activities under this task include the following:

- A. Monitor and/or participate in relevant activities of the N.M. State Emergency Response Commission (SERC); Hazardous Materials Safety Board; Washington TRU Solutions and its contractors; interim joint Radioactive and Hazardous Materials Committee of the New Mexico Legislature; Radioactive Waste Consultation Task Force; and other appropriate emergency preparedness organizations.

Deliverable: Documentation of relevant information from monitoring and/or participation in activities of the preceding entities. Such documentation will be included in the Progress Reports required under Appendix D of this amendment to the Agreement.

- B. Meet with appropriate emergency response personnel at the federal, state, tribal, and local levels of government, including those involved in emergency medical preparedness, to establish and/or maintain effective communications and coordination regarding WIPP transportation emergencies.
- C. Develop, implement and, as necessary, revise plans, procedures and protocols for the effective assessment, monitoring, and mitigation of a WIPP transportation emergency in New Mexico. Consult with appropriate personnel at the federal, state, tribal, and local levels of government, particularly the DOE/CBFO, as well as with interested and affected members of the general public, in development, implementation and revision of such plans, procedures and protocols. Relevant documents to the "emergency response preparedness" component of the State's WIPP Transportation Safety Program include:
- (1) New Mexico Hazardous Materials Emergency Response ("HMER") Plan. This plan includes guidance, which is appropriate for responding to a WIPP transportation emergency; it will be reviewed annually and revised as necessary.
 - (2) New Mexico Emergency Response Guide. A section of the Guide pertains specifically to hazardous, radiological, and

WIPP transportation emergencies; it will be reviewed annually and revised as necessary.

- (3) New Mexico State Agency WIPP Transportation Operations Procedures Manual. This Manual, which provides contacts and procedures for handling both routing and emergency transportation conditions involving WIPP shipments, will be reviewed annually and revised as necessary.
- (4) WIPP Transportation Safety Program Implementation Guide. Elements of this Guide, prepared cooperatively by DOE/CBFO and the WGA Advisory Group, will be reviewed and revised as required.

Deliverables: Revised versions of the preceding documents, as necessary. Provide DOE/CBFO a copy of the revised documents, and document the revision(s) in the Progress Report.

- D. Continue to perform characterization studies of background radionuclide concentrations and exposure rates along the WIPP route in New Mexico.
 - E. Provide DOE/CBFO and other interested / affected entities copies of all final plans, procedures and protocols, or revisions thereto, for the effective assessment, monitoring, and mitigation of a WIPP transportation emergency in New Mexico.
- II. DOE/CBFO activities under this task include the following:
- A. Monitor and/or participate, as deemed appropriate by the CBFO, in relevant activities of the N.M. State Emergency Response

Commission, N.M. Hazardous Materials Safety Board; interim joint Radioactive and Hazardous Materials Committee of the New Mexico Legislature; Radioactive Waste Consultation Task Force; and other appropriate emergency preparedness organizations.

- B. Provide accurate and timely information on issues surrounding DOE/CBFO's WIPP transportation emergency preparedness and response activities, as requested by the State.
- C. Cooperate with the State in establishing and/or maintaining effective communications and coordination in the area of WIPP emergency preparedness and response; and in reviewing plans, procedures and protocols for the effective assessment, monitoring, and mitigation of a WIPP transportation emergency.
- D. Investigate the possibility of establishing a "safe-haven" parking area in Springer, and produce a written evaluation of this possibility. The written evaluation should include a recommendation and a plan on carrying out that recommendation.

Task 3: TRANSPORTATION EMERGENCY RESPONSE TRAINING AND EXERCISES

Completing this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health, property, and the environment from those risks posed by a WIPP transportation emergency.

- Clarifying the various roles and responsibilities of affected state, local and tribal emergency response entities in the area of WIPP transportation emergency preparedness and response.
 - Informing affected state, local and tribal emergency response entities of the appropriate procedures for response to and mitigation of a WIPP transportation emergency.
 - Train and rehearse emergency response personnel at the federal, state, tribal, and local levels of government in New Mexico to safely and effectively respond to and assist in mitigating a WIPP transportation emergency.
- I. State activities under this task include:
- A. Reviewing, as appropriate, the content of the States and Tribal Education Program (STEP) WIPP training courses on a biennial basis. Providing any state comments on those training courses to the DOE/CBFO and to the federal Occupational Safety and Health Administration (OSHA) during or subsequent to reviews of the WIPP training.
 - B. Utilizing the experience and expertise of the Department of Health and associated groups in reviewing and commenting on WIPP training courses, particularly those pertaining to emergency medical preparedness and response.
 - C. Scheduling and securing training locations; providing DOE/CBFO copies of all training schedules.

- D. Selecting and notifying students of training; performing all administrative functions pertaining to student selection, notification, and participation in the WIPP-related training.

- E. Providing for the implementation and performance of hazardous materials training courses and exercises as specified below. The "WIPP Transportation Emergency Training Program" will continue to be developed, implemented, and refined during the New Mexico FY 2007-2008 budget cycle of this Cooperative Agreement amendment. As currently structured, this training program consists of the following components:

Fixed Site Training. A module of WIPP-specific information which is included in training presented by state or state-contracted personnel each year at the N.M. Law Enforcement Academy in Santa Fe, the N.M. Firefighters Training Academy in Socorro, and the N.M. Emergency Medical Institutions located in Albuquerque, Roswell and Las Cruces.

Community-Based Training. This component of the State of New Mexico's program has two parts, each of which will provide WIPP emergency response training in the communities requesting the training.

STEP Training. One or more of the suite WIPP-specific States and Tribal Education Program (STEP) courses identified in the next section are or will be made available for presentation by state or state-coordinated personnel in

communities located along the WIPP transportation routes in New Mexico.

ALERT Training. A module of WIPP-specific information, extracted from STEP training course materials and other sources, is or will be included in each of the various Annual Local Emergency Response Training (ALERT) courses presented by state or state-contracted personnel in New Mexico communities each year. These training courses include, but are not limited to, the following:

- Hazardous Materials Awareness (Level I)
- Hazardous Materials Operations (Level II)
- Hazardous Materials Technician (Level III)
- Critical Incident Command (Level IV)
- HAZMAT Level V – Incident Command
- Hospital Emergency Department Management of Radiation Accidents
- EMS/Hazardous Materials Operations Course
- Radiological Emergency Operations (REO) Course or its equivalent, as available from DOE

Full-scale WIPP emergency response exercises (WIPPTRAX), preceded by classroom training, drills, and a functional exercise, will be conducted in at least 2 New Mexico communities.

- F. Administering a continuing program to train individuals in New Mexico who may be involved in responding to or mitigating a WIPP transportation emergency to appropriate levels as defined in OSHA 29 CFR 1910.120 and NFPA 471-473. Such individuals may

include fire protection, law enforcement, emergency medical and radiological health personnel.

- G. Maintaining administrative records of emergency response personnel in New Mexico who have satisfactorily participated and completed any WIPP-related training conducted by or on behalf of the State; providing DOE/CBFO with summaries of these records in a mutually acceptable format.
- H. Advising DOE/CBFO of programs, courses, exercises and other joint training opportunities, which the State sponsors, related to radiological transportation safety training.

II. DOE/CBFO activities under this task include the following:

- A. Providing, when requested by the State, the existing and approved States and Tribal Education Program (STEP) materials (i.e., student handouts, instructor manuals, viewgraphs and slides) for those WIPP emergency response courses outlined below. All new or revised DOE/ Washington STEP training materials will be coordinated between the State and DOE/CBFO as necessary.

Courses:

- First Responder Course
- First Responder Refresher Course
- Command and Control Course
- Train-the-Trainer Course
- Medical Emergency Management Course (RMC)
- Handling of Radiation Accidents by Emergency Response Personnel (RMC)

Audience:

First Responder/First Responder Refresher Course: First state/local/tribal responders on the scene.

Command/Control Course: State/local/tribal emergency response officers, Fire Marshal representatives, including local fire department personnel and emergency medical services representatives.

Train-the-Trainer Course: Certified instructors in emergency medical, fire and law enforcement topics.

Medical Emergency Management Course (RMC): Hospital staff, including radiation safety officers; health physicists; other emergency medical personnel.

Handling of Radiation Accidents by Emergency Response

Personnel (RMC): Physicians, nurses, and others who may be called upon to provide emergency medical services to radiation accident victims.

Course Content Summary

- First Responder Course: An overview of general hazardous materials classifications, shipping papers, placarding, and transportation regulations. Special attention will be paid to radioactive materials, their containers, and exposure and decontamination of radioactive material (RAM). Scene security and the first responder's role in the incident command system will be emphasized. Successful completion of this course will provide the first responder with the necessary knowledge to respond safely to a WIPP-related RAM incident and protect him, the public, and environment from unnecessary exposure or damage.

- Command/Control Course: Emphasis will be placed on the establishment of a command post, identification of the hazardous material(s), conformance with state and local emergency plans, and the establishment of protective zones around the scene if radioactive contamination occurs. A simulated RAM incident is included. Critiques, tests, and evaluations are included within the course content.

- Train-the-Trainer Course: This course is presented to classes of up to fifteen (15) students. Students attending this course must be certified as instructors within their state or local jurisdiction. The First Responder Course lesson plan and 35 mm slides about WIPP can be integrated into the existing hazardous materials training.

- Hospital Medical Emergency Management Refresher Course: This eight-hour course has been developed by Radiation Management Consultants (RMC) for instruction in treating radiologically induced injury. It covers techniques of contamination control, radiological and clinical laboratory assessment, use of chelating drugs for transuranic uptake, and the role of professional health physicists in the hospital setting. This training includes revisions and update assistance of emergency medical plans, and staging of in-hospital drills and exercises.

- Handling of Radiation Accidents by Emergency Response Personnel: This three and one-half day course has been developed by RMC. It emphasizes the practical aspects of handling a radiation contaminated victim by discussing the fundamentals of radiation; how to detect and measure

radiation; how to prevent the spread of contamination; how to reduce the radiation dose and dose rate to the victim and attending hospital emergency room personnel; and the role of the medical/health physicist in caring for contaminated accident victims. Lectures are enhanced by demonstrations, laboratory exercises, and a radiation accident drill.

- B. Review and revise, as necessary, the content of all WIPP training courses. Consult with the State and other required entities in such review and revision.
- C. Conduct the Train-the-Trainer Course for state instructors, as requested by the State of New Mexico. Class size generally runs between five (5) and ten (10) people. The Train-the-Trainer program will include participation in the eight-hour First Responder course; WIPP-specific instructor skills and materials training; and a WIPP facility tour.
- D. Make the necessary arrangements for a total of twenty (20) individuals from New Mexico to attend the Radiological Emergency Operations (REO) courses scheduled at the Nevada Test site in each fiscal year during the New Mexico FY 2007-2008 budget cycle, subject to the availability of these courses.
- E. Arrange for two "Radiological Emergency Training for Local Responders (RETLR)" courses to be conducted (for the benefit of local responders in New Mexico) in each fiscal year during the New Mexico FY 2007-2008 budget cycle.
- F. Coordinate with state personnel to establish training dates, times, and locations for presentations of the three and one-half day RMC

course entitled "Handling of Radiation Accident Patients" or its equivalent as determined by the State. This course will be presented at a mutually agreed upon location and facility at a maximum of four (4) times during the New Mexico FY 2007-2008 budget cycle by RMC or approved DOE/ Washington contract personnel deemed appropriate by the State. DOE/CBFO will provide funding to the State for reimbursement of all travel, per diem, and other allowable costs incurred by up to eighty (80) appropriate state selected individuals involved in WIPP emergency medical preparedness activities in New Mexico.

- G. Coordinate with appropriate state personnel to establish training dates, times, and locations for presentation of the eight-hour Medical Emergency Management Refresher course. The Medical Emergency Management Refresher course will be presented by RMC personnel (or other RMC -- contracted individuals whose qualifications meet with the approval of the State). DOE/CBFO will provide funding to the State for reimbursement of all allowable costs relating to the training incurred by or on behalf of the State.

- H. Cooperate with the State in its planning, development, and implementation of WIPP emergency preparedness and response drills and exercises. Fully support up to two full-scale state-sponsored WIPPTRAX exercises (as scheduled by the State) each fiscal year during the New Mexico FY 2007-2008 budget cycle. Provide technical support and other resources, including but not limited to the WIPP TRUPACT-II and/or 72-B Cask tractor/trailer, its drivers, and empty TRUPACT-II containers, as well as DOE Radiological Assistance Program (RAP) team personnel (as such resources are available) for such WIPP transportation emergency

exercises and drills. Estimated annual requirements of the State include:

Full-scale exercises.....	2
Functional exercises	2
Drills.....	4
Training Courses/practical Exercises.....	24
TOTAL TRAINING EVENTS	32*

*Excludes Public Awareness and Participation activities; see Task 5

State and DOE/CBFO deliverables for each full-scale exercise, functional exercise, drill, and practical exercise will be negotiated between the parties prior to the training event.

- I. Advise the State of programs, courses, exercises and other joint training opportunities which DOE/CBFO sponsors related to radiological transportation safety training.
- J. Maintain administrative records of emergency response personnel in New Mexico participating in WIPP related training conducted by DOE/CBFO; provide the State summaries of these records in a mutually acceptable format.
- K. Review and provide comments/recommendations on WIPP-specific materials introduced into the state training program.

- L. Monitor twenty percent (20%) per year of the courses taught by the State of New Mexico that includes WIPP-specific information. A report of the reviews will be provided to the State.

New Mexico Medical Facilities for WIPP Transport Emergencies

Acoma Hospital – Acoma
Artesia General Hospital – Artesia
Cibola General Hospital – Grants
Miners' Colfax Medical Center --- Raton
Eastern New Mexico Medical Center – Roswell
Española Hospital – Espanola
Ft. Sumner Hospital – Ft. Sumner
Gallup Indian Medical Center – Gallup
Guadalupe County Hospital – Santa Rosa
Carlsbad Medical Center – Carlsbad
Columbia Lea Regional Hospital – Hobbs
Los Alamos Medical Center – Los Alamos
Lovelace Medical Center – Albuquerque
Kaseman Presbyterian Hospital – Albuquerque
Northeastern Regional Hospital – Las Vegas
Presbyterian Hospital – Albuquerque
Rehoboth McKinley Christian Hospital – Gallup
St. Joseph Hospitals – Albuquerque
St. Vincent Hospital – Santa Fe
University of New Mexico Hospital – Albuquerque
Veterans Administration (VA) Medical Center – Albuquerque

**Task 4: TRANSPORTATION EMERGENCY RESPONSE EQUIPMENT
AND SUPPLIES**

Completing this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health, property, and the environment from those risks posed by a WIPP transportation emergency.
- Determining the adequacy of existing emergency response equipment and supplies in responding effectively to a WIPP transportation emergency.
- Ensuring appropriate emergency response personnel at the state and local levels of government in New Mexico are properly equipped to safely and effectively respond to, abate and control, and assist in the mitigation of a WIPP transportation emergency.
- Avoiding duplication of effort among emergency response organizations at the federal, state, tribal, and local levels of government regarding the procurement of WIPP equipment.

I. State activities under this task include:

- A. Consulting with appropriate emergency response personnel at the federal, state, tribal, and local levels of government in determining adequate types and levels of emergency response equipment and supplies for the various categories of responders that would be involved in a WIPP transportation emergency.
- B. Inventory on an ongoing basis existing emergency response equipment and supplies of affected state and local government emergency response organizations.

- C. Identify emergency response equipment and supplies that are needed to establish adequate levels of preparedness in affected state and local government emergency response organizations.
- D. Purchase and distribute the emergency response equipment and supplies identified. The State must obtain DOE/CBFO's concurrence to purchase any emergency response equipment or supplies not identified or not previously approved by DOE/CBFO as appropriate for use in a WIPP transportation emergency.
- E. Provide for the maintenance and calibration of distributed equipment and supplies, as appropriate.
- F. Revise and update the listing of all equipment purchased with funding provided under this amendment to the Cooperative Agreement and its distribution in New Mexico.

Deliverable: Revised and updated listing of purchased equipment and its location will be included as an attachment to the final quarterly Progress Report required under Appendix D of this amendment to the Agreement.

II. DOE/CBFO activities under this task include:

- A. Providing technical assistant and expertise to the State, as requested, in its effort to determine adequate types and levels of emergency response equipment and supplies for the various categories of responders that would be involved in a WIPP transportation emergency.

- B. Providing, as requested by the State and as it is made available to DOE/CBFO, accurate and timely information on existing emergency response equipment and supplies available at the federal level for response to a WIPP transportation emergency in New Mexico.
- C. Monitoring the procurement and distribution of emergency response equipment and supplies by the State.
- D. Providing compatible radio communications equipment to New Mexico state personnel for on-scene command and control at the time of a WIPP transportation emergency. The communications equipment is to be compatible with the radio equipment of responding DOE Radiological Assistance Program teams.
- E. Replace anti-contamination clothing and materials consumed through WIPP-related emergency response activities. In this context, "WIPP-related emergency response activities" include any training, exercise, or drill in preparation for or in response to an actual WIPP transportation emergency.
- F. Ensure that the appropriate containers, in adequate numbers, are brought to the scene of an actual WIPP-related transportation emergency.

**TASK 5: PUBLIC AWARENESS AND PARTICIPATION IN WIPP
TRANSPORTATION SAFETY PROGRAM ACTIVITIES**

Completing this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health and the environment from those risks posed by a WIPP transportation emergency.

Deliverable: Revised WIPP public information materials, as necessary. Provide DOE/CBFO copies of all revised materials, and document the revision in the Progress Report.

- II. DOE/CBFO activities under this task include:
 - A. Monitor and/or participate in relevant activities of the N. M. State Emergency Response Commission (SERC); the N.M. Hazardous Materials Safety Board; the interim joint Legislative Radioactive and Hazardous Materials Committee; the N.M. Radioactive Waste Consultation Task Force; and other appropriate emergency preparedness organizations.
 - B. Cooperate with and support the State in its planning, development, and implementation of public awareness programs that address WIPP transportation activities; and in its preparation and dissemination of informative materials on such activities. Such coordination and support may include participation in two-day WIPP Public Awareness Workshops for public officials conducted as needed. It is estimated that the WIPP "road show" vehicle will be requested for at least two such public awareness activity each year during the NM FY 2007-2008 budget cycle of the Cooperative Agreement.
 - C. Provide timely and accurate information on issues surrounding DOE/CBFO's WIPP transportation activities, as requested by the State.

- D. Furnish to the State advance notice of all DOE/CBFO WIPP-related public outreach activities within New Mexico, particularly those activities involving the WIPP "road show" vehicle.

TASK 6: WIPP LONG-TERM PERFORMANCE ASSESSMENT ACTIVITIES

Completing this task will meet the following specific goals/aims:

- Ensuring adequate protection of human health and the environment from those risks posed by the WIPP repository, its operations, and corresponding activities.
- Facilitating the resolution of issues surrounding WIPP performance and regulatory compliance.
- Improving coordination and communications among affected entities in the area of WIPP performance and regulatory compliance.
- Enhancing the State of New Mexico's capability to address its WIPP off-site concerns pertaining to repository performance and regulatory compliance.

Special Terms and Conditions

RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award for guidance.

PAYMENT PROCEDURES – REIMBURSEMENT THROUGH THE AUTOMATED CLEARING HOUSE (ACH) VENDER INQUIRY PAYMENT ELECTRONIC REPORTING SYSTEM (VIPERS)

- a. Method of Payment. Payment will be made by advance or reimbursement through ACH.
- b. Requesting Advances or Reimbursements. Requests for advances or reimbursements must be made electronically through Department of Energy's Oak Ridge Financial Service Center (ORFSC) VIPERS. To access and use VIPERS, you must enroll at <https://finweb.oro.doe.gov/vipers.htm>. Detailed instructions on how to enroll are provided on the web site.

For non-construction awards, you must submit a Standard Form (SF) 270, "Request for Advance or Reimbursement" at <https://finweb.oro.doe.gov/vipers.htm> and attach a file containing appropriate supporting documentation. The file attachment must show the total federal share claimed on the SF 270, the non-federal share claimed for the billing period if cost sharing is required, and cumulative expenditures to date (both Federal and non-Federal) for each of the following categories: salaries/wages and fringe benefits; equipment; travel; participant/training support costs, if any; other direct costs, including subawards/contracts; and indirect costs.

- c. Timing of submittals. Submittal of the SF 270 should coincide with your normal billing pattern, but not more frequently than every two weeks. Requests for reimbursement must be limited to the amount of disbursements made during the billing period for the federal share of direct project costs and the proportionate share of any allowable indirect costs incurred during that billing period.
- d. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE.

- e. Payments. The DOE approving official will approve the invoice as soon as practicable but not later than 30 days after your request is received, unless the billing is improper. Upon receipt of an invoice payment authorization from the DOE approving official, the ORFSC will disburse payment to you. You may check the status of your payments at the VIPER web site. All payments are made by electronic funds transfer to the bank account identified on the ACH Vendor/Miscellaneous Payment Enrollment Form (SF 3881) that you filed.

INCREMENTAL FUNDING AND MAXIMUM OBLIGATION

If at any time during the award a budget period is funded on an incremental basis, the maximum obligation of the DOE is limited to the amount shown in Block 16.b.(3) "CUMULATIVE DOE OBLIGATIONS Project Period to Date" on the Notice of Financial Assistance Award. You are not obligated to continue performance of the project beyond the total amount shown in Block 16.b.(3) and your pro rata share of the project costs, if cost sharing is required. Subject to the availability of additional funds, DOE anticipates obligating the total amount shown in Block 16.a.(4) for the current budget period.

REBUDGETING AND RECOVERY OF INDIRECT COSTS

a. If actual allowable indirect costs are less than those budgeted and funded under the award, you may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, you must refund the difference.

b. Recipients are expected to manage their indirect costs. DOE will not amend an award solely to provide additional funds for changes in indirect cost rates (See "Incremental Funding and Maximum Obligation article). DOE recognizes that the inability to obtain full reimbursement for indirect costs means the recipient must absorb the underrecovery. Such underrecovery may be allocated as part of the organization's required cost sharing.

USE OF PROGRAM INCOME

If you earn program income during the project period as a result of this award, you may add program income to the funds committed to the award and use it to further eligible project objectives.

STATEMENT OF FEDERAL STEWARDSHIP

DOE will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to insure that the award objectives have been accomplished.

SITE VISITS

DOE's authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. You must provide, and must require your subawardees to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work.

REPORTING REQUIREMENTS

a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

b. Dissemination of scientific/technical reports. Scientific/technical reports submitted under this award will be disseminated on the Internet via the DOE Information Bridge (www.osti.gov/bridge), unless the report contains patentable material, protected data or SBIR/STTR data. In addition, these reports must not contain any limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release. Citations for journal articles produced under the award will appear on the DOE Energy Citations Database (www.osti.gov/energycitations).

PUBLICATIONS (OCT 2004)

a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.

b. An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: "This material is based upon work supported by the Department of Energy [National Nuclear Security Administration] [add name(s) of other agencies, if applicable] under Award Number(s) [enter the award number(s)]."

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS

You must obtain any required permits and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

INTELLECTUAL PROPERTY PROVISIONS AND CONTACT INFORMATION

a. The intellectual property provisions applicable to this award are found at 10 CFR 600.136 (a) and (c) and are copied below:

(a) Recipients may copyright any work that is subject to copyright and was developed, or for which ownership was purchased, under an award. DOE reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish or otherwise use the work for Federal purposes and to authorize others to do so.

(c) The DOE has the right to:

(1) Obtain, reproduce, publish or otherwise use the data first produced under an award; and

(2) Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

b. Questions regarding intellectual property matters should be referred to the Patent Counsel designated as the service provider for the DOE office that issued the award. The IP Service Providers List is found at <http://www.gc.doe.gov/gcmain.html>. Click on Intellectual Property and Laboratory Partnering, and then click on IP Service Providers List.

CONTINUATION APPLICATION AND FUNDING

a. Continuation Application. A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least 90 days before the end of each budget period, you must submit to the DOE Project Officer identified in Block 11 and the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award your continuation application, which includes the following information:

1. A report on your progress towards meeting the objectives of the project, including any significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.

2. A detailed budget and supporting justification for the upcoming budget period if additional funds are requested, a reduction of funds is anticipated, or a budget for the upcoming budget period was not approved at the time of award

3. A description of your plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved application.

b. Continuation Funding. Continuation funding is contingent on (1) availability of funds; (2) substantial progress towards meeting the objectives of your approved application; (3)

submittal of required reports; or (4) compliance with the terms and conditions of the award.

LOBBYING RESTRICTIONS

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

1. Identification Number: DE-FC29-88AL53813	2. Program/Project Title: Waste Isolation Pilot Plant Project Enhancement of the State of New Mexico's Emergency Response Capability
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3. Recipient:
 State of New Mexico, Radioactive Waste Consultation Task Force

4. Reporting Requirements:	Frequency	No. of Copies	Addressees												
A. MANAGEMENT REPORTING <input checked="" type="checkbox"/> Progress Report <input checked="" type="checkbox"/> Special Status Report (as needed)	Q	2	A, B												
B. SCIENTIFIC/TECHNICAL REPORTING (Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/etlink .) <table style="width:100%; border: none;"> <tr> <td style="width:35%;">Report/Product</td> <td style="width:35%;">Form</td> <td style="width:30%;"></td> </tr> <tr> <td><input type="checkbox"/> Final Scientific/Technical Report</td> <td>DOE F 241.3</td> <td rowspan="4" style="vertical-align: top; padding-left: 10px;"> http://www.osti.gov/etlink-2413 http://www.osti.gov/etlink-2413 http://www.osti.gov/etstsc/241-4pre.jsp </td> </tr> <tr> <td><input type="checkbox"/> Conference papers/proceedings*</td> <td>DOE F 241.3</td> </tr> <tr> <td><input type="checkbox"/> Software/Manual</td> <td>DOE F 241.4</td> </tr> <tr> <td><input type="checkbox"/> Other (see special instructions)</td> <td>DOE F 241.3</td> </tr> </table> <p>* Scientific and technical conferences only</p>	Report/Product	Form		<input type="checkbox"/> Final Scientific/Technical Report	DOE F 241.3	http://www.osti.gov/etlink-2413 http://www.osti.gov/etlink-2413 http://www.osti.gov/etstsc/241-4pre.jsp	<input type="checkbox"/> Conference papers/proceedings*	DOE F 241.3	<input type="checkbox"/> Software/Manual	DOE F 241.4	<input type="checkbox"/> Other (see special instructions)	DOE F 241.3	A	2	A, B
Report/Product	Form														
<input type="checkbox"/> Final Scientific/Technical Report	DOE F 241.3	http://www.osti.gov/etlink-2413 http://www.osti.gov/etlink-2413 http://www.osti.gov/etstsc/241-4pre.jsp													
<input type="checkbox"/> Conference papers/proceedings*	DOE F 241.3														
<input type="checkbox"/> Software/Manual	DOE F 241.4														
<input type="checkbox"/> Other (see special instructions)	DOE F 241.3														
C. FINANCIAL REPORTING <input type="checkbox"/> SF-259, Financial Status Report <input checked="" type="checkbox"/> SF-269A, Financial Status Report (Short Form) <input type="checkbox"/> SF-272, Federal Cash Transactions Report	Q	2	A, B												
D. CLOSEOUT REPORTING <input type="checkbox"/> Patent Certification <input checked="" type="checkbox"/> Property Certification <input type="checkbox"/> Other	F	1	B												
E. OTHER REPORTING <input checked="" type="checkbox"/> Annual Indirect Cost Proposal <input type="checkbox"/> Annual Inventory of Federally Owned Property, if any <input type="checkbox"/> Other	Y	2	B, C												

FREQUENCY CODES AND DUE DATES:

- A - Within 5 calendar days after events or as specified.
- F - Final; 90 calendar days after expiration or termination of the award.
- Y - Yearly; 90 days after the end of the reporting period.
- S - Semiannually; within 30 days after end of reporting period.
- Q - Quarterly; within 30 days after end of the reporting period.

5. Special Instructions:

Addressees for the reports above are identified as:

- A E. Ralph Smith, U. S. Department of Energy, P. O. Box 3090, Carlsbad, NM 88220
- B Stanley T. Colt, Contracting Officer, U. S. Department of Energy, P. O. Box 3090, Carlsbad, NM 88220
- C Cognizant Agency

Federal Assistance Reporting Instructions (5/06)

A. MANAGEMENT REPORTING

Progress Report

The Progress Report must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award number and name of the recipient.
2. The project title and name of the project director/principal investigator.
3. Date of report and period covered by the report.
4. A comparison of the actual accomplishments with the goals and objectives established for the period and reasons why the established goals were not met.
5. A discussion of what was accomplished under these goals during this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
6. Cost Status. Show approved budget by budget period and actual costs incurred. If cost sharing is required break out by DOE share, recipient share, and total costs.
7. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variance. You may use your own project management system to provide this information.
8. Any changes in approach or aims and reasons for change. Remember significant changes to the objectives and scope require prior approval by the contracting officer.
9. Actual or anticipated problems or delays and actions taken or planned to resolve them.
10. Any absence or changes of key personnel or changes in consortium/teaming arrangement.
11. A description of any product produced or technology transfer activities accomplished during this reporting period, such as:

- A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award.
- B. Web site or other Internet sites that reflect the results of this project.
- C. Networks or collaborations fostered.
- D. Technologies/Techniques.
- E. Inventions/Patent Applications
- F. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTS

Final Scientific/Technical Report

Content. The final scientific/technical report must include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. Identify the DOE award number; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
2. Display prominently on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports.
3. Provide an executive summary, which includes a discussion of 1) how the research adds to the understanding of the area investigated; 2) the technical effectiveness and economic feasibility of the methods or techniques investigated or demonstrated; or 3) how the project is otherwise of benefit to the public. The discussion should be a minimum of one paragraph and written in terms understandable by an educated layman.
4. Provide a comparison of the actual accomplishments with the goals and objectives of the project.
5. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, problems encountered and departure from planned methodology, and an assessment of their impact on the project results. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the conclusions.
6. Identify products developed under the award and technology transfer activities, such as:
 - a. Publications (list journal name, volume, issue), conference papers, or other public releases of results. If not provided previously, attach or send copies of any public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award;
 - b. Web site or other Internet sites that reflect the results of this project;
 - c. Networks or collaborations fostered;
 - d. Technologies/Techniques;
 - e. Inventions/Patent Applications, licensing agreements; and
 - f. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.
7. For projects involving computer modeling, provide the following information with the final report:
 - a. Model description, key assumptions, version, source and intended use;
 - b. Performance criteria for the model related to the intended use;

- c. Test results to demonstrate the model performance criteria were met (e.g., code verification/validation, sensitivity analyses, history matching with lab or field data, as appropriate);
- d. Theory behind the model, expressed in non-mathematical terms;
- e. Mathematics to be used, including formulas and calculation methods;
- f. Whether or not the theory and mathematical algorithms were peer reviewed, and, if so, include a summary of theoretical strengths and weaknesses;
- g. Hardware requirements; and
- h. Documentation (e.g., users guide, model code).

Electronic Submission. The final scientific/technical report must be submitted electronically-via the DOE Energy Link System (E-Link) accessed at <http://www.osti.gov/mlink-2413>.

Electronic Format. Reports must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. Materials, such as prints, videos, and books, that are essential to the report but cannot be submitted electronically, should be sent to the Contracting Officer at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. The report must be accompanied by a completed electronic version of DOE Form 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI)." You can complete, upload, and submit the DOE F.241.3 online via E-Link. You are encouraged not to submit patentable material or protected data in these reports, but if there is such material or data in the report, you must: (1) clearly identify patentable or protected data on each page of the report; (2) identify such material on the cover of the report; and (3) mark the appropriate block in Section K of the DOE F 241.3. Reports must not contain any limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release. Protected data is specific technical data, first produced in the performance of the award that is protected from public release for a period of time by the terms of the award agreement.

Conference Papers/Proceedings

Content: The recipient must submit a copy of any conference papers/proceedings, with the following information: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor.

Electronic Submission. Scientific/technical conference paper/proceedings must be submitted electronically-via the DOE Energy Link System (E-Link) at <http://www.osti.gov/mlink-2413>. Non-scientific/technical conference papers/proceedings must be sent to the URL listed on the Reporting Checklist.

Electronic Format. Conference papers/proceedings must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. If the proceedings cannot

be submitted electronically, they should be sent to the DOE Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. Scientific/technical conference papers/proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on E-Link at <http://www.osti.gov/elink-2413>. This form is not required for non-scientific or non-technical conference papers or proceedings.

Software/Manual

Content. Unless otherwise specified in the award, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts.

Electronic Submission. Submissions may be submitted electronically-via the DOE Energy Link System (E-Link) at <http://www.osti.gov/estsc/241-4pre.jsp>. They may also be submitted via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

Submittal Form. Each software deliverable and its manual must be accompanied by a completed DOE Form 241.4 "Announcement of U.S. Department of Energy Computer Software." The form and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4pre.jsp>.

C. FINANCIAL REPORTING

Recipients must complete the financial reports identified on the Reporting Checklist in accordance with the report instructions. These standard forms are available at <http://www.whitehouse.gov/omb/grants/index.html>. Fillable forms are available at <http://grants.pr.doe.gov>.

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The recipient must provide a DOE Form 2050.11, "PATENT CERTIFICATION." This form is available at <http://www.directives.doe.gov/pdfs/forms/2050-11.pdf> and <http://grants.pr.doe.gov>.

Property Certification

The recipient must provide the Property Certification, including the required inventories of non-exempt property, located at <http://grants.pr.doe.gov>.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs.

Cognizant Agency. The recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving indirect costs. If the DOE awarding office is the cognizant agency, submit the annual indirect cost proposal to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award.

Annual Inventory of Federally Owned Property

Requirement. If at any time during the award the recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the recipient must submit an annual inventory of this property to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award no later than October 30th of each calendar year, to cover an annual reporting period ending on the preceding September 30th.

Content of Inventory. The inventory must include a description of the property, tag number, acquisition date, location of property, and acquisition cost, if purchased with project funds. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

ATTACHMENT C
SECURITY

Waste Isolation Pilot Plant
Hazardous Waste Permit
November 25, 2002

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ATTACHMENT C
SECURITY
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Waste Isolation Pilot Plant
Hazardous Waste Permit
November 25, 2002

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ATTACHMENT C

SECURITY

1 Introduction

2 This Permit Attachment describes the security measures taken at the Waste Isolation Pilot
3 Plant (WIPP) during the Disposal Phase. It describes the security equipment and procedures in
4 place at the WIPP facility that continuously monitor and control entry onto the active portion¹ of
5 the facility, including 24-hour security surveillance, fencing, and signs.

6 C-1 Security

7 The security requirements contained in Title 20 of the New Mexico Administrative Code,
8 Chapter 4, Part 1 (20.4.1.500 NMAC (incorporating 40 CFR §264.14)), and in 20.4.1.900 NMAC
9 (incorporating 40 CFR §270.14(b)(4)), require that security be provided by 24-hour surveillance
10 or that a barrier be provided to control entry to the active portion of the facility at all times.

11 C-1a Security Procedures and Equipment

12 The WIPP facility has been designed and will be operated to fully meet the security
13 requirements contained in 20.4.1.500 NMAC (incorporating 40 CFR §264.14(b) and (c)). The
14 WIPP facility has 24-hour security surveillance and the means to control entry to the active
15 portion of the facility. In addition, warning signs are provided. These security requirements are
16 discussed below.

17 C-1a(1) 24-Hour Surveillance System

18 The WIPP facility's 24-hour surveillance system is comprised of security officers that provide
19 protection 24 hours per day, 365 days per year. Security officers work to written procedures that
20 require visitors, contractors, and vendors to log in before they are allowed to proceed to the
21 Main Gate for access into the Property Protection Area (PPA) and require continuous
22 monitoring of the active portion of the facility. This system will be maintained to fulfill the
23 requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.14(b)(1)).

24 The major duties of the security officers are to control personnel, vehicle, and material
25 access/egress 24 hours per day, 365 days per year. During non-operational hours, the security
26 officers conduct documented security patrols outside of the PPA, at a minimum rate of two per

¹The active portion of the facility is the Property Protection Area (PPA) as described in Permit Module III. Within this area, the only area where transuranic (TRU) mixed wastes are handled outside of the Contact Handled Packaging is inside the Waste Handling Building (WHB), the waste hoist, and the underground. Whenever TRU mixed waste is handled, a Controlled Area (CA) is established, for the purpose of radiation protection, which limits access to only trained personnel or to untrained personnel (visitors) who are continuously under the escort of trained personnel. CAs are established in accordance with the WIPP Radiation Safety Manual and are managed to limit the radiation exposure to personnel to less than 100 millirem per year. The CA is initially set at the entrances to the Parking Area Container Storage Unit (Parking Area Unit), Waste Handling Building Container Storage Unit (WHB Unit) Bay, and portions of the underground. The boundary of the CA is posted with signs as specified by the Permittees.

1 12-hour shift. Whenever scheduled security patrols cannot be made, for situations such as
2 inclement weather or an emergency, the reason for missing the patrol will be documented in the
3 security logbook. In addition to the security officers, WIPP facility employees are called upon to
4 challenge any person in the WIPP facility who is not wearing a badge or who is not under escort
5 when an escort is required. Further physical protection is provided by fences, protective lighting,
6 and locked buildings.

7 C-1a(2) Barrier and Means to Control Entry

8 The existence of a barrier and a means to control entry demonstrates compliance with
9 20.4.1.500 NMAC (incorporating 40 CFR §264.14(b)(2)). Each is discussed in detail in the
10 following sections.

11 C-1a(2)(a) Barrier

12 The surface portion of the WIPP facility PPA is contained within a 35 acre (14 hectare) fenced
13 area. This area is surrounded by a permanent 7 foot (ft) (2.13 meter [m]) high chain-link fence
14 that is topped by three strands of barbed wire, for a total height of 8 ft (2.44 m). The fence
15 encloses major surface structures. The regularly inspected chain-link fencing at the WIPP
16 facility completely surrounds the active portion of the facility, thereby complying with 20.4.1.500
17 NMAC (incorporating 40 CFR §264.14(b)(2)(i)). Access is normally through the Main Gate on
18 the west side of the PPA. Two other gates are available for emergency use. One of these gates
19 is opened to allow salt trucks access to the salt pile. Use of all gates is under the supervision of
20 security.

21 C-1a(2)(b) Means to Control Entry

22 Entry into the PPA, whether by personnel or vehicles, is through controlled gates and doors.
23 WIPP-facility access-control procedures are designed to ensure that only properly identified
24 and authorized persons, vehicles, and property are allowed entrance to and exit from the
25 facility. A personnel identification and access control system is maintained within the facility.
26 Employees identify themselves with an identification badge when entering or leaving the
27 premises. Security officers require visitors to show proper authorization prior to allowing them to
28 enter the facility. In addition, visitors are required to wear a temporary badge and may require
29 an authorized escort. Because the WIPP facility controls entry to the active portion of the facility
30 at all times, the requirements of 20.4.1.500 NMAC (incorporating 40 CFR §264.14(b)(2)(ii)), are
31 met.

32 For the purposes of entry control to areas where wastes are being handled, the Waste Handling
33 Building Container Storage Unit (WHB Unit), the boundaries of the Parking Area Unit south of
34 the WHB, and those portions of the underground where wastes are disposed are posted as
35 Controlled Areas (CAs). The WIPP allows access to a CA by anyone who has successfully
36 completed General Employee Radiological Training, which is included in the General Employee
37 Training Course. Access for visitors can also be arranged with proper training.

38 Areas within the CA, however, may have further access restricted. Smaller areas may be
39 designated as Radiological Buffer Areas, Radiation Areas, and Radioactive Materials Area.
40 These smaller areas are generally within the direct vicinity of waste handling activities or waste

1 storage or disposal areas. They are sized and posted in accordance with strict guidelines.
2 Activities in these areas are performed under a Radiological Work Permit (RWP), and
3 personnel must be listed on the RWP before they are allowed to enter. To be listed on the
4 RWP, personnel must have the appropriate radiological and hazardous waste worker training
5 and must have available radiation dose for the task. In addition, the individuals must sign the
6 RWP acknowledging that they intend to comply with the radiological controls that are in place.
7 Personnel may be escorted into the smaller areas if they are escorted by a person who meets
8 all of the above requirements and is not performing any work in the area.

9 The WHB Unit, the Parking Area Unit, and the underground Hazardous Waste Disposal Units
10 (HWDUs) will be posted with a sign that states: "Danger: Authorized Personnel Only" in both
11 English and Spanish.

12 C-1a(3) Warning Signs

13 The permanent chain-link fence surrounding the PPA is posted at approximately 50 ft (15.24 m)
14 intervals with "No Trespassing" signs and with "Danger: Authorized Personnel Only" signs in
15 English and Spanish. The signs are legible from a distance of 25 ft (7.62 m) and can be seen
16 from any approach to the facility. These same signs, plus security and traffic signs, are also
17 located on the controlled gates. The fence and gate signs at the WIPP facility fully comply with
18 20.4.1.500 NMAC (incorporating 40 CFR §264.14(c)). Warning signs with "Controlled Area" and
19 "Hazardous Waste Management Unit" will be posted at entrances to the HWDUs prior to the
20 emplacement of waste.

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

1. Identification Number: DE-FC29-88AL53813	2. Program/Project Title: Waste Isolation Pilot Plant Project Enhancement of the State of New Mexico's Emergency Response Capability																																	
3. Recipient: State of New Mexico, Radioactive Waste Consultation Task Force																																		
4. Reporting Requirements: A. MANAGEMENT REPORTING <input checked="" type="checkbox"/> Progress Report <input checked="" type="checkbox"/> Special Status Report (as needed) B. SCIENTIFIC/TECHNICAL REPORTING (Reports/Products must be submitted with appropriate DOE F 241. The 241 forms are available at www.osti.gov/etlink .) <table style="width:100%; border: none;"> <tr> <td style="text-align: left;">Report/Product</td> <td style="text-align: left;">Form</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Final Scientific/Technical Report</td> <td>DOE F 241.3</td> <td>http://www.osti.gov/etlink-2413</td> </tr> <tr> <td><input type="checkbox"/> Conference papers/proceedings*</td> <td>DOE F 241.3</td> <td>http://www.osti.gov/etlink-2413</td> </tr> <tr> <td><input type="checkbox"/> Software/Manual</td> <td>DOE F 241.4</td> <td>http://www.osti.gov/etstg/241-4pre.jsp</td> </tr> <tr> <td><input type="checkbox"/> Other (see special instructions)</td> <td>DOE F 241.3</td> <td></td> </tr> </table> <p>* Scientific and technical conferences only</p> C. FINANCIAL REPORTING <input type="checkbox"/> SF-269, Financial Status Report <input checked="" type="checkbox"/> SF-269A, Financial Status Report (Short Form) <input type="checkbox"/> SF-272, Federal Cash Transactions Report D. CLOSEOUT REPORTING <input type="checkbox"/> Patent Certification <input checked="" type="checkbox"/> Property Certification <input type="checkbox"/> Other E. OTHER REPORTING <input checked="" type="checkbox"/> Annual Indirect Cost Proposal <input type="checkbox"/> Annual Inventory of Federally Owned Property, if any <input type="checkbox"/> Other	Report/Product	Form		<input type="checkbox"/> Final Scientific/Technical Report	DOE F 241.3	http://www.osti.gov/etlink-2413	<input type="checkbox"/> Conference papers/proceedings*	DOE F 241.3	http://www.osti.gov/etlink-2413	<input type="checkbox"/> Software/Manual	DOE F 241.4	http://www.osti.gov/etstg/241-4pre.jsp	<input type="checkbox"/> Other (see special instructions)	DOE F 241.3		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">No. of Copies</th> <th style="text-align: center;">Addressees</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Q</td> <td style="text-align: center;">2</td> <td style="text-align: center;">A, B</td> </tr> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">2</td> <td style="text-align: center;">A, B</td> </tr> <tr> <td style="text-align: center;">Q</td> <td style="text-align: center;">2</td> <td style="text-align: center;">A, B</td> </tr> <tr> <td style="text-align: center;">F</td> <td style="text-align: center;">1</td> <td style="text-align: center;">B</td> </tr> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">2</td> <td style="text-align: center;">B, C</td> </tr> </tbody> </table>	Frequency	No. of Copies	Addressees	Q	2	A, B	A	2	A, B	Q	2	A, B	F	1	B	Y	2	B, C
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FREQUENCY CODES AND DUE DATES: A - Within 5 calendar days after events or as specified. F - Final; 90 calendar days after expiration or termination of the award. Y - Yearly; 90 days after the end of the reporting period. S - Semiannually; within 30 days after end of reporting period. Q - Quarterly; within 30 days after end of the reporting period.																																		
5. Special Instructions: Addressees for the reports above are identified as: A. E. Ralph Smith, U. S. Department of Energy, P. O. Box 3090; Carlsbad, NM 88220 B. Stanley T. Colt, Contracting Officer, U. S. Department of Energy, P. O. Box 3090; Carlsbad, NM 88220 C. Cognizant Agency																																		

Federal Assistance Reporting Instructions (5/06)

A. MANAGEMENT REPORTING

Progress Report

The Progress Report must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award number and name of the recipient.
2. The project title and name of the project director/principal investigator.
3. Date of report and period covered by the report.
4. A comparison of the actual accomplishments with the goals and objectives established for the period and reasons why the established goals were not met.
5. A discussion of what was accomplished under these goals during this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
6. Cost Status. Show approved budget by budget period and actual costs incurred. If cost sharing is required break out by DOE share, recipient share, and total costs.
7. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variance. You may use your own project management system to provide this information.
8. Any changes in approach or aims and reasons for change. Remember significant changes to the objectives and scope require prior approval by the contracting officer.
9. Actual or anticipated problems or delays and actions taken or planned to resolve them.
10. Any absence or changes of key personnel or changes in consortium/teaming arrangement.
11. A description of any product produced or technology transfer activities accomplished during this reporting period, such as:

- A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award.
- B. Web site or other Internet sites that reflect the results of this project.
- C. Networks or collaborations fostered.
- D. Technologies/Techniques.
- E. Inventions/Patent Applications
- F. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTS

Final Scientific/Technical Report

Content. The final scientific/technical report must include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. Identify the DOE award number; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
2. Display prominently on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports.
3. Provide an executive summary, which includes a discussion of 1) how the research adds to the understanding of the area investigated; 2) the technical effectiveness and economic feasibility of the methods or techniques investigated or demonstrated; or 3) how the project is otherwise of benefit to the public. The discussion should be a minimum of one paragraph and written in terms understandable by an educated layman.
4. Provide a comparison of the actual accomplishments with the goals and objectives of the project.
5. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, problems encountered and departure from planned methodology, and an assessment of their impact on the project results. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the conclusions.
6. Identify products developed under the award and technology transfer activities, such as:
 - a. Publications (list journal name, volume, issue), conference papers, or other public releases of results. If not provided previously, attach or send copies of any public releases to the DOE Project Officer identified in Block 11 of the Notice of Financial Assistance Award;
 - b. Web site or other Internet sites that reflect the results of this project;
 - c. Networks or collaborations fostered;
 - d. Technologies/Techniques;
 - e. Inventions/Patent Applications, licensing agreements; and
 - f. Other products, such as data or databases, physical collections, audio or video, software or netware, models, educational aid or curricula, instruments or equipment.
7. For projects involving computer modeling, provide the following information with the final report:
 - a. Model description, key assumptions, version, source and intended use;
 - b. Performance criteria for the model related to the intended use;

- c. Test results to demonstrate the model performance criteria were met (e.g., code verification/validation, sensitivity analyses, history matching with lab or field data, as appropriate);
- d. Theory behind the model, expressed in non-mathematical terms;
- e. Mathematics to be used, including formulas and calculation methods;
- f. Whether or not the theory and mathematical algorithms were peer reviewed, and, if so, include a summary of theoretical strengths and weaknesses;
- g. Hardware requirements; and
- h. Documentation (e.g., users guide, model code).

Electronic Submission. The final scientific/technical report must be submitted electronically-via the DOE Energy Link System (E-Link) accessed at <http://www.osti.gov/elink-2413>.

Electronic Format. Reports must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. Materials, such as prints, videos, and books, that are essential to the report but cannot be submitted electronically, should be sent to the Contracting Officer at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. The report must be accompanied by a completed electronic version of DOE Form 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI)." You can complete, upload, and submit the DOE F.241.3 online via E-Link. You are encouraged not to submit patentable material or protected data in these reports, but if there is such material or data in the report, you must: (1) clearly identify patentable or protected data on each page of the report; (2) identify such material on the cover of the report; and (3) mark the appropriate block in Section K of the DOE F 241.3. Reports must not contain any limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release. Protected data is specific technical data, first produced in the performance of the award that is protected from public release for a period of time by the terms of the award agreement.

Conference Papers/Proceedings

Content: The recipient must submit a copy of any conference papers/proceedings, with the following information: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor.

Electronic Submission. Scientific/technical conference paper/proceedings must be submitted electronically-via the DOE Energy Link System (E-Link) at <http://www.osti.gov/elink-2413>. Non-scientific/technical conference papers/proceedings must be sent to the URL listed on the Reporting Checklist.

Electronic Format. Conference papers/proceedings must be submitted in the ADOBE PORTABLE DOCUMENT FORMAT (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematic, graphs, and charts. If the proceedings cannot

be submitted electronically, they should be sent to the DOE Administrator at the address listed in Block 12 of the Notice of Financial Assistance Award.

Submittal Form. Scientific/technical conference papers/proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on E-Link at <http://www.osti.gov/mlink-2413>. This form is not required for non-scientific or non-technical conference papers or proceedings.

Software/Manual

Content. Unless otherwise specified in the award, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts.

Electronic Submission. Submissions may be submitted electronically-via the DOE Energy Link System (E-Link) at <http://www.osti.gov/estsc/241-4pre.jsp>. They may also be submitted via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

Submittal Form. Each software deliverable and its manual must be accompanied by a completed DOE Form 241.4 "Announcement of U.S. Department of Energy Computer Software." The form and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4pre.jsp>.

C. FINANCIAL REPORTING

Recipients must complete the financial reports identified on the Reporting Checklist in accordance with the report instructions. These standard forms are available at <http://www.whitehouse.gov/omb/grants/index.html>. Fillable forms are available at <http://grants.pr.doe.gov>.

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The recipient must provide a DOE Form 2050.11, "PATENT CERTIFICATION." This form is available at <http://www.directives.doe.gov/pdfs/forms/2050-11.pdf> and <http://grants.pr.doe.gov>.

Property Certification

The recipient must provide the Property Certification, including the required inventories of non-exempt property, located at <http://grants.pr.doe.gov>.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs.

Cognizant Agency. The recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving indirect costs. If the DOE awarding office is the cognizant agency, submit the annual indirect cost proposal to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award.

Annual Inventory of Federally Owned Property

Requirement. If at any time during the award the recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the recipient must submit an annual inventory of this property to the DOE Award Administrator identified in Block 12 of the Notice of Financial Assistance Award no later than October 30th of each calendar year, to cover an annual reporting period ending on the preceding September 30th.

Content of Inventory. The inventory must include a description of the property, tag number, acquisition date, location of property, and acquisition cost, if purchased with project funds. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

APPENDIX A

Laws, Directives, Policy Documents, and Orders Possibly Pertaining to Repository Areas of Public Safety, By Area

DOCUMENTS REVIEWED FOR PREPARATION OF THIS REPORT

Note – DOE Order HQ 250.1 exempts OCRWM from requirements in directives that duplicate or overlap NRC requirements. All documents referenced in this appendix have not been specifically reviewed for duplicate or overlapping requirements or directives, as it was anticipated that a detailed review would be part of a Phase II follow-on report.

Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (DOE/EOS-0250) February 2002

10 CFR 20 (*NRC Standards for Protection Against Radiation*), establishes standards for radiation safety at an NRC-licensed facility.

10 CFR 63 *Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada*. this part prescribes rules governing the licensing (including issuance of a construction authorization) of the U.S. Department of Energy to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated at Yucca Mountain.

10 CFR 71 *Packaging and Transportation of Radioactive Material*, implements Department of Transportation requirements for packaging and transporting spent nuclear fuel and high-level radioactive waste.

10 CFR 72 *Licensing Requirements for the Independent Storage of Spent Fuel and High-Level Radioactive Waste*, sets forth technical requirements for licensing private storage facilities to receive, ship, and store spent nuclear fuel, and outlines procedures by which the Department of Energy is licensed to receive, ship, and store spent fuel at a temporary facility. The specific requirements for an emergency plan and its contents are delineated in 10 CFR 72.32(b) as referenced in 10 CFR 63.161.

10 CFR 73 *Physical Protection of Plants and Materials*, This part prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used. The requirements of 73.51 apply to a Yucca Mountain repository as referenced in 10 CFR 63.21(b)(3).

10 CFR 851 *Worker Safety and Health Program*, contractors, both indemnified and non-indemnified, must submit their worker safety and health (WSH) programs to DOE for approval by February 26, 2007.

10 CFR 961 (*DOE Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste*), outlines the contract with utilities to receive, ship, and dispose of spent nuclear fuel and high-level waste.

40 CFR 191 (EPA) Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes.

40 CFR 197 *Public Health and Environmental Radiation Protection Standards for Yucca Mountain*. This subpart covers the storage of radioactive material by DOE in the Yucca Mountain repository and on the Yucca Mountain site.

49 CFR 171-179 (DOT) *Hazardous Materials Regulations*, specifies general Department of Transportation requirements for the transportation of radioactive materials.

Mandatory Requirements (General Safety)

DOE Order 420.1A, *Facility Safety*, contains the basic requirements for the overall repository fire protection program as a whole. Relative to firefighting capabilities, the Order requires that the program have “Access to a qualified and trained fire protection staff, including...fire fighting personnel to implement the requirements” of the Order. At the highest level, the goal of the fire protection program is to “to support a level of fire protection and fire suppression capability sufficient to minimize losses from fire and related hazards consistent with the best class of protected property in private industry”. Applicable NFPA codes and standards are Mandatory as stipulated by DOE Orders 420.1A. DOE Order 420.1A also requires nuclear facility safety analysis reports to identify those systems, structures, components, and programs that are important to the safety basis assumptions and consequences.

The DOE Implementation Guide G-420.1/B-0 G-440.1/E-0, *Implementation Guide for DOE Orders 420.1 and 440.1: Fire Safety Program* provides more detailed information in implementing the desired programmatic elements for the Fire Department into the Fire Protection Program. The individual requirements have been considered, and are interspersed amongst the requisite sections in this document.

DOE Order 151.1C, *Comprehensive Emergency Management System*, has many references that address the requirement of the emergency response organization in all types of emergencies. Primarily it establishes policy to assign and describe roles and responsibilities for the Department of Energy (DOE) Emergency Management System. The Emergency Management System provides the framework for development, coordination, control, and direction of all emergency planning, preparedness, readiness assurance, response, and recovery actions. It also addresses the issue of having an Incident Command Structure within the organization.

DOE Order 450.1, *Environmental Protection Program*, Requires DOE elements to establish an Environmental Management System (EMS) that is integrated into DOE's Integrated Safety Management System (ISMS). It has requirements for implementation of a wildland fire management program, through guidance in DOE G 450.1-4, *Implementation Guide, Wildland Fire Management Program for Use With DOE O 450.1*.

10 CFR 835, Section 1302, *Emergency Exposure Situations*, stipulates that the risk of injury to individuals involved in rescue and recovery operations shall be minimized and provides dose limit guidelines for control of emergency exposures.

29 CFR 1910, Section 38, *Employee Emergency Plans and Fire Prevention*, requires pre-planning for fire emergencies and the training of employees in fire prevention plus portable fire extinguisher training.

29 CFR 1910, Section 134, *Respiratory Protection*, addresses all the requirements relating to respiratory protection.

Environmental Protection Agency (EPA) *Superfund Amendment and Reauthorization Act (SARA) Title III*, requires that employers, building and Site managers make Material Safety Data Sheets (MSDS) information available for Fire Department use.

Adherence to the provisions of the *Nevada Administrative Code* relative to medical response is expected on the repository and within the County.

Underwriters Laboratories (UL) – 827 *Central – Station Alarm Services*, provides requirements for central alarm monitoring services to maintain certification as a UL Listed service.

Recommended Practices (Emergency Management)

Federal Emergency Management Agency (FEMA) *Integrated Emergency Management System (IEMS)* addresses Incident Command.

American National Standards Institute (ANSI) 3.8.4 criteria address maintaining emergency response capabilities.

ANSI 3.8.3 criteria relates to emergency response plans and implementing procedures.

National Wildland Coordinating Group (NWCG) requirements and training guides address wildland fire mitigation, incident command, and other facets of response.

Mandatory Requirements (Emergency Medical Service)

DOE Order 151.1C, *Comprehensive Emergency Management System*, has several issues that address response to operational emergencies and the necessity to be prepared to handle these.

29 CFR 1910, Section 119, *Process Safety Management of Highly Hazardous Chemical*, addresses the need for planning emergency response to accidents.

29 CFR 1910, Section 120, *Hazardous Waste Operations and Emergency Response*, requires medical personnel on the scene of hazardous material emergency response operations.

29 CFR 1910, Section 134, *Respiratory Protection Requirements*, includes a number of drivers for firefighters, both in training and performance.

29 CFR 1910, Section 151, *Medical Service and First Aid*, addresses medical services and first aid requirements for a Site such as the repository.

29 CFR 1910, Section 1030, *Occupational Exposure to Bloodborne Pathogen*, addresses how to handle bloodborne pathogen.

The Nevada State Department of Health (NV-DOH), *Public Health Division, Injury Prevention and Emergency Medical Services Bureau* provides the State's administrative requirements for the level of training required for emergency medical service personnel.

The Nevada Administrative Code (NAC) 4.2 provides regulatory guidance for certified ambulance services.

Mandatory Requirements (Hazardous Material Mitigation)

DOE Order 420.1A *Facility Safety*, requires contractors to establish a capability to ensure that there not be an on-site or off-site release of radiological and other hazardous material that will threaten the public health and safety or the environment.

DOE Order 151.1C, *Comprehensive Emergency Management System*, requires all DOE Sites to plan for and declare an operational emergency when an event or condition requires time urgent response from outside the immediate/affected Site/facility or area of incident. Mitigation of incident is part of the planning effort.

29 CFR 1910, Section 120, *Hazardous Waste Operations and Emergency Response*, provides protection for workers who respond to hazardous materials events from their regular workstations (fire brigades, emergency medical teams, etc.) by requiring response personnel to be trained to a particular level. According to the regulation, a facility must have an emergency response training program for emergency responders.

40 CFR 300-311, *Comprehensive Environmental Response and Liability Act*, (CERCLA) is commonly known as "Superfund". The main thrust of CERCLA is to ensure proper response to and cleanup of hazardous material spills and to restore abandoned hazardous waste disposal sites.

40 CFR 350-372 SARA Title III, *Emergency Planning and Community Right-to-Know Act*, is often referred to as EPCRA or SARA Title III. SARA Title III contains four major sections. It specifies requirements for state and local governments that impact fire departments.

40 CFR 240-280, *Resource Conservation and Recovery Act*, is intended to be a "cradle to grave" concept for hazardous waste that includes recycling, conservation, and minimization. Subtitle C of RCRA states standards and regulations for proper management of hazardous wastes by the generator and transporter. It includes standards for the treatment, storage and disposal of the wastes; for contingency planning; for emergency response equipment; and for emergency response organizations.

49 CFR 171-195, *Hazardous Material Transportation Act*, regulates transportation by all modes except bulk shipments on waterways. Regulations provide guidance in the area of placarding and labeling of vehicles and containers, preparation of shipping papers and manifests, and packaging requirements. Emergency responders need to be knowledgeable of the placarding and labeling of vehicles and containers required in this act in the event they respond to a transportation event involving hazardous material.

Mandatory Requirements (Environmental)

40 CFR 68, *Risk Management Program for Chemical Accidents Release Prevention*, addresses training requirements for all emergency response personnel who may respond to an accidental release.

29 CFR 1910, Section 146, *Confined Space*, requires employers to prepare for emergency rescue of confined space workers.

Mandatory Requirements (Emergency Management)

29 CFR 1910 *Rules and Regulations*, state “The Incident Command System shall be established by those employers for the incidents that will be under their control and shall be interfaced with the other organizations or agencies who may respond to such an incident”.

National Standards and Recommended Practices

In general, applicable NFPA codes, standards, guides, and recommended practices (codes and standards) are mandatory as stipulated by DOE Orders 420.1A for the repository.

Federal and State requirements pertaining to fire and emergency response in the off-site vicinity are applicable. These include the *Code of Federal Regulations and Nevada Revised Statutes* reciprocal sections (with the exception of 10 CFR 835). These regulations dictate a range of requirements for the Department, particularly those for medical service and hazardous materials response. National standards - such as those published by the NFPA, the NWCG, the *International City/County Management Association*, and others – become applicable, although they may not be specifically adopted, through precedence in court decisions throughout the country. Since these standards are often created by either consensus organizations or expert opinion, it is generally assumed that service providers will voluntarily conform to the requirements contained therein. A number of court decisions across the United States have indicated that an expectation of compliance exists despite a lack of specific adoption.

Since compliance to all such documents cannot be achieved as a result of some conflict between documents, a specific set is generally identified for implementation. For this report, those standards published by the NFPA are used as the benchmark for fire and rescue services.

Mandatory Requirements (Communications)

ISO/IEC 7498-4 International Standards Organization, Open Systems Interconnect Reference Model

ANSI, TIA/EIA Standards, American National Standards Institute, Telecomm wiring Standards.

Buildings Industry Consulting Service, Telecomm Distribution Methods Manual.

**DOCUMENTS APPLICABLE TO SPECIFIC AREAS OF REPORT,
NOT ALL REVIEWED FOR THIS REPORT**

3.1 Site Security

Atomic Energy Act of 1954 as amended

Department of Energy Manuals

Department of Energy (DOE) Manual (M) 360.1B-1 Federal Employee Training Manual

DOE M 452.4-1A Protection of Use Control Vulnerabilities and Designs

DOE M 470.1-1 Safeguards and Security Awareness Program

DOE M 471.1-1 Chg 1 Identification and Protection of Unclassified Controlled Nuclear Information Manual

DOE M 471.2-1C Classified Matter Protection and Control Manual, 4-17-01

DOE M 471.2-3A Special Access Program Policies, Responsibilities, and Procedures

DOE M 471.2-4 Technical Surveillance Countermeasures

DOE M 472.1-1B Personnel Security Program Manual

DOE M 474.1-1A Manual for Control and Accountability of Nuclear Materials

DOE M 474.1-2 Chg 2 Nuclear Materials Management and Safeguards System Reporting and Data Submission

DOE M 473.2-1A Firearms Qualification Courses Manual

DOE M 473.2-2 Chg 1 Protective Force Program Manual

DOE M 475.1-1A Identifying Classified Information

Department of Energy Notices

DOE N 470.2 Reporting Unofficial Foreign Travel

DOE N 473.9 Security Conditions

DOE Notice 142.1 Unclassified Foreign Visits and Assignments (7-14-99)

Department of Energy Orders

DOE O 142.3 Unclassified Foreign Visits and Assignments

DOE O 200.1 Information Management Program

DOE O 440.1 A, CRD, Attachment 2, Paragraph 21 Motor Vehicle Safety

DOE O 461.1 Packaging and Transfer or Transportation of Materials of National Security Interest

DOE O 470.1 Chg 1 Safeguards and Security Program

DOE O 470.2B Independent Oversight and Performance Assurance Program

DOE O 471.2A Information Security Program

DOE O 471.4 Incidents of Security Concern

DOE O 473.2 Protective Force Program

DOE O 471.1A Identification and Protection of Unclassified Controlled Nuclear Information

DOE O 471.2A Information Security Program
DOE O 5610.2, Chg 1 Control of Weapon Data
DOE O 474.1A Control and Accountability of Nuclear Materials
DOE O 551.1B Official Foreign Travel
DOE O 5670.1A Management and Control of Foreign Intelligence
DOE O 551.1B Official Foreign Travel

Department of Energy Publications

DOE P 470.1 Integrated Safeguards and Security Management Policy
DOE/IN-0003 DOE Procedures for Intelligence Activities

Executive Orders

Executive Order 12829 National Industrial Security Program
Executive Order 12958 Classified National Security Information
Executive Order 12968 Access to Classified Information (8-2-95)

Federal Laws and Regulations

10 Code of Federal Regulations (CFR) 706 Security Policies and Practices Relating to Labor Management Relations
10 CFR 707 Workplace Substance Abuse Programs at DOE Sites
10 CFR 709 Polygraph Examination Regulations
10 CFR 710 Criteria and Procedures for Determining Eligibility for Access to Classified Matter or SNM
10 CFR 712 Human Reliability Program
10 CFR 860 Trespassing on Department of Energy Property
10 CFR 1046 Physical Protection of Security Interests
10 CFR 1047 Limited Arrest Authority and Use of Force by Protective Force Officers
32 CFR 2004 Safeguarding Directive
42 United States Code (USC) 2001, et seq. Atomic Energy Act of 1954

National Security Documents

National Security Directive (NSD) 47 Counterintelligence and Security Countermeasures
NSD 63 Single Scope Background Investigation
National Security Decision Directive (NSDD) 19 Protection of Classified National Security Council and Intelligence Information
NSDD 84 Safeguarding National Security Information
NSDD 197 Reporting Hostile Contacts and Security Awareness
NSDD 298 National Operations Security Program
NV O 470.X Intruder Interdiction

NV N 473.8 SECON IMPLEMENTATION POLICY FOR NNSA/NSO

Presidential Decision Directive/National Security Council (PDD/NSC) 12 Security Awareness and Reporting of Foreign Contacts

PDD 39 U.S. Policy on Counterterrorism

PDD 62 Combating Terrorism

PDD-63 Critical Infrastructure Protection (5-22-98)

Privacy Act of 1974

3.2 Worker Safety and Health

3.2.1 Fire and Rescue

National Fire Codes (NFC) National Fire Protection Association (NFPA)

DOE Guide (G) 440.1-5, Fire Safety, Guide 9/30/95, EH Fire Department Operations

DOE O 420.1A, CRD, Facility Safety, Section 4.2 Fire Protection

DOE O 440.1A, CRD, paragraph 15(c) Worker Protection Management for Federal Contractor Employees

DOE-STD-1066-99 Fire Protection Design Criteria.

DOE-STD-1088-95 Fire Protection for Relocatable Structures

National Fire Protection Association, National Fire Codes Applicable Standards

Nevada Administrative Code (NAC) 477 State Fire Marshall

Uniform Fire Code (1997) Volumes 1 & 2

14 CFR 139.325 Airport Emergency Plan

29 CFR 1910.1030 Blood Borne Pathogens

29 CFR 1910.120 Hazardous Waste Operations and Emergency Response

29 CFR 1910.132 Personal Protective Equipment, General Requirements

29 CFR 1910.134 Respiratory Protection, Personal Protective Equipment

29 CFR 1926 Safety and Health Regulations for Construction

29 CFR, Subpart L Fire Protection

29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

KKK-A-1822 Federal Specification for Ambulance Design (including minimum requirements and optional equipment), or as Approved by the State of Nevada EMS Representative

National Fire Protection Association (NFPA) 1581 Fire Department Infection Control Program

3.2.2 Radiological Monitoring

DOE M 473.2-2, CRD Protective Force Program Manual

DOE O 474.1 CRD Control and Accountability of Nuclear Materials

DOE/NV-325 NTS Waste Acceptance Criteria

Federal Facilities Agreement and Consent Order (FFACO) of 1996

Federal Facilities Compliance Act Consent Order (May 1995)

Mutual Consent Agreement for the Storage of Low-Level Mixed Waste (June 1995 and modified November 1998)

Mutual Consent Agreement for the Storage of Low-Level Mixed Waste

Nevada Administrative Code 444.842-444.976 Facilities for the Management of Hazardous Waste

Settlement Agreement for Transuranic (TRU) Mixed Waste Storage Issues at the Nevada Test Site (June, 1992)

Nevada Administrative Code (NAC) 444.570 - 444.7499 Solid Waste Management

Nevada Administrative Code (NAC) 444.850 - 444.8746 Disposal of Hazardous Waste

Nevada Revised Statutes (NRS) 444.440 - 444.465 Collection and Disposal of Solid Waste

Nevada Revised Statutes (NRS) 459.400 - 459.600 Disposal of Hazardous Waste

SARA Title III The Emergency Planning and Community Right-to-Know Act of 1986 (also known as SARA Title III or EPCRA)

10 CFR 20 (*NRC Standards for Protection Against Radiation*), establishes standards for radiation safety at an NRC-licensed facility.

10 CFR 63 *Disposal of High-Level Radioactive Wastes in a Geologic Repository at Yucca Mountain, Nevada*. this part prescribes rules governing the licensing (including issuance of a construction authorization) of the U.S. Department of Energy to receive and possess source, special nuclear, and byproduct material at a geologic repository operations area sited, constructed, or operated at Yucca Mountain.

10 CFR 830.120 Quality Assurance Requirements for Nuclear Facilities

10 CFR 835 Radiation Protection for Occupational Workers

29 CFR 1910.120(p) Hazardous Waste Operations

40 CFR 191 Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive Waste

40 CFR 260 Through 270 Federal Hazardous Waste Management Program Department of Defense (DoD) Ordinance Disposal Criteria Department of Defense (DoD) Ordinance Disposal Criteria

42 USC 2011, et seq. Atomic Energy Act of 1954, as amended

42 USC 20216 Low-Level Waste Policy Amendments Act

49 CFR 171-178 General Information, Regulations, and Definitions; Hazardous Materials Table, Special Provisions, Hazardous Materials; .etc.

3.2.3 Medical Services and Occupational Health

National Fire Protection Association (NFPA) 1582 Medical Requirements for Fire Fighters

NFPA Standard 1582 Fire Department Occupational Safety & Health Program, Physical Fitness Requirement

NRS 450.b. Emergency Medical Services

DOE N 441.1 Radiological Protection for DOE Activities

DOE O 440.1A "Occupational Medical," Attachment 2, Section 19

DOE O 440.1A, Attachment 2, Section 19 Worker Protection Management for DOE Federal and Contractor Employees

10 CFR 711, Subpart A Personnel Assurance Program (PAP), PAP Certification/Recertification, Temporary Removal/Reinstatement, and Revocation of PAP Certification

10 CFR 711, Subpart B Medical Assessments for PAP Certification Recertification

10 CFR 835 Radiation Protection for Occupational Workers

10 CFR 1046 Physical Protection of Security Interests

29 CFR 1910.1001 and 29 CFR 1926.1101 Asbestos

29 CFR 1910.1020 and 29 CFR 1926.33 Access to Employee Exposure and Medical Records

29 CFR 1910.1025 and 29 CFR 1926.62 Lead

29 CFR 1910.1030 Blood Borne Pathogens

29 CFR 1910.48 and 29 CFR 1926.1148 Formaldehyde

29 CFR 1910.95 and 29 CFR 1926.52 Occupational Noise Exposure

29 CFR 1910.120 and 29 CFR 1926.65 Hazardous Waste Operations and Emergency Response

29 CFR 1910.132 Personal Protective Equipment, General Requirements

29 CFR 1910.134 and 29 CFR 1926.103 Respiratory Protection

3.2.4 Worker Safety

American Conference of Governmental Industrial Hygienists - Threshold Limit Values (TLVs) for Chemical Substances and Physical Agents and Biological Exposure Indices

American National Standards Institute (ANSI) Z88.2 Practices for Respiratory Protection

ANSI Z49.1, Sections 4.3 and E4.3 Safety in Welding, Cutting and Allied Processes

Center for Disease Control and Prevention (CDC) Hantavirus Infection - Southwestern United States: Interim Recommendations for Risk Reduction

DOE M 231.1-1, Chg. 2, CRD Environmental Safety and Health Reporting Manual

DOE O 420.1A, CRD Facility Safety

DOE O 425.1B, CRD Startup and Restart of Nuclear Facilities

DOE O 433.1, CRD Maintenance Management Program for DOE Nuclear Facilities

DOE O 440.1A, CRD Worker Protection Management for DOE, Federal, and Contractor Employees (Worker Protection Program)

DOE O 5480.19 Chg 2 Conduct of Operations Requirements for DOE Facilities

DOE O 5480.20A Chg 1 Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities

National Fire Protection Association (NFPA) 70 National Electrical Code (NEC)

National Fire Protection Association (NFPA) 70E Electrical Safety Requirements for Employee Workplaces

NV M 421.X Nuclear Facility Safety Management Standard 1073-93 Guide for Operational Configuration Management

10 CFR 830 Nuclear Safety Management

29 CFR 1904 Record Keeping for Occupational Injuries/Illnesses

29 CFR 1905 Subpart B Applications for Variances, Limitations, Variations, Tolerances, Exemptions and Other Relief

29 CFR 1910 Occupational Safety and Health Standards

29 CFR 1910.1000 Air Contaminants

29 CFR 1910.1020 Access to Employee Exposure and Medical Records

29 CFR 1910.1025 Lead

29 CFR 1910.1048 Formaldehyde

29 CFR 1910.1200 Hazard Communication

29 CFR 1910.134 Respiratory Protection, Personal Protective Equipment

29 CFR 1910.95 Occupational Noise Exposure

29 CFR 1926 Safety and Health Regulations for Construction

29 CFR 1926.103 Respiratory Protection

29 CFR 1926.1148 Formaldehyde

29 CFR 1926.33 Access to Employee Exposure and Medical Records

29 CFR 1926.59 Hazard Communication

29 CFR 1926.62 Lead

29 USC 651 Occupational Safety and Health Act

3.3 Other

3.3.1 Communications

Automated Digital Network (Autodin) Operating Procedures Joint Army, Navy, and Air Force Publication

Bell Telephone Standards Maintenance, Installation and Operation

General Services Administration (GSA) Federal Information Resources

Management Regulation (FIRMR 101.35) Applicable Standards

Manual of Regulations and Procedures for Federal Radio Frequency Management

Security Telecommunications and Information Systems Security Publications

Publication (Automated Digital Network (Autodin) Operating Procedures), and Department of Energy Publications

29 CFR 1910.268 Telecommunications

3.3.2 Training

DOE Handbook 1074-95 Alternative Systematic Approaches to Training, January 1995

DOE Handbook 1078-94 Training Program Handbook, A Systematic Approach to Training

10 CFR 707 Workplace Substance Abuse Programs at DOE Sites

APPENDIX B

The Los Alamos Experience Fire and Emergency Medical Response Contracting

THE LOS ALAMOS EXPERIENCE FIRE AND EMERGENCY MEDICAL RESPONSE CONTRACTING

Prepared by Fred Brueggeman, Los Alamos City and County:
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Community Development Director 1989 - 1995

PURPOSE:

The purpose of this document is to relate the Los Alamos County, New Mexico Fire and Emergency Medical Response experience in contracting with the U.S. Department of Energy (DOE); and to identify issues and lessons of potential relevance to Nye County, Nevada's assessment of Emergency Response (ER) and related services at the Yucca Mountain Project (THE REPOSITORY) and its offsite vicinity.

BRIEF HISTORY OF LOS ALAMOS NATIONAL LABORATORY (LANL) AND LOS ALAMOS COUNTY

WW II – The Manhattan Project

When the Federal government moved onto the Parjarito Plateau in New Mexico in March 1943, there was no existing community at Los Alamos, no local government, and no municipal services. The Los Alamos facility was from the start a government-owned, contractor-operated laboratory (GOCO), as are most DOE laboratory facilities. While the University of California (UC) has been the contractor since 1942, the responsible federal agency has moved from the Army, to the Atomic Energy Commission, to the Energy Research and Development Administration, to the Department of Energy, and now to the National Nuclear Security Administration. Under a GOCO contracting arrangement, the government owns all of the land, facilities, and equipment and defines the work; the contractor provides the personnel to manage and operate the facility and complete the work (M&O Contract).

The Early Cold War

As a temporary facility during WW II and then as a permanent complex starting in 1946 until 1966, the government owned, not only the Laboratory, but also the community and all of its housing, shopping facilities, churches, infrastructure, etc. Thus, there was no local government, and the Federal government provided police, fire, and emergency medical services to the Laboratory and the community. Los Alamos County was created by the State in 1949, but with no local government structure.

THE ATOMIC ENERGY COMMUNITY ACT (AECA)

When the Incorporated County of Los Alamos government was created by a home rule charter in 1966, the County Police Department took over law enforcement in the community and DOE tasked UC with subcontracting LANL security to the Mason & Hanger Company, but kept Laboratory fire and emergency medical services as a direct Federal function with all fire and emergency medical personnel as Federal government employees. The Los Alamos community started as a government-owned "company town," and after nearly forty years, the movement of the community to be "independent" or "normal" is still evolving. From WW II up to the present, the fire and emergency medical services have continued to serve both the Laboratory and the community with one unified service corps. The term "incorporated county" reflects Los Alamos's unique role in New Mexico as having both county and municipal functions. This is appropriate for the state's smallest county in geographical area, and one where the Federal government still owns 85% of the land.

TRANSITION FROM DOE TO LOS ALAMOS COUNTY

Self-Sufficiency

In the early 1980's, as part of a move towards the self-sufficiency required in the Atomic Energy Communities Act (AECA), the DOE and Los Alamos County began to explore the idea of eliminating the DOE-owned and operated fire and emergency service function, and of contracting with the County to provide those services under a GOCO contract with the DOE. The County had a study prepared in 1985 titled "A Concept for Operation of the Los Alamos

Fire Department by Los Alamos County.” The report examined the history of the Fire Department, alternatives for future operation, and made a recommendation for the most desirable option. The study also recommended that a further study be made on the feasibility of transferring the fire department from DOE to Los Alamos County. The DOE contracted for the subsequent study, and the study produced a report titled “A Feasibility Study on the Possible Transfer of the Los Alamos Fire Department from the Department of Energy to the Incorporated County of Los Alamos.” The study reviewed the Fire Department’s staffing, risk analysis, fire protection planning, organization, facilities, and equipment. The study further compared benefits and personnel policies of the DOE and the County, and examined the County’s ability to manage the Fire Department. Finally, the study reviewed a transition process, and the transition costs to both the DOE and the County. “The consultants concluded that, all things considered, the planned transfer of the Fire Department is the most feasible and the most economical method of continuing the top-quality fire prevention and protection service which have been provided to Los Alamos (both LANL and the Community) since its establishment.”

Initial DOE-County Contract

Based on that report, the DOE and Los Alamos County proceeded to negotiate a transition agreement and transition plan. During that period, the County hired a fire chief and other fire management personnel, and made preparations for the transfer date of September 24, 1989. The transition agreement was in many respects a trial period. The “Five Year Fire Contract” signed in December, 1992 states in its preamble that “DOE and the County have now determined that it is to their mutual benefit for the County to continue operating the DOE-owned Fire Department.” The estimated cost of the contract was in excess of \$39 million for five years. The County’s actual cost to manage the contract (finance, HR, legal, county manager, etc.) was established by an independent company and was reimbursable through an indirect cost ratio. In addition, the County received a 4% management allowance, which was phased-in in 20% increments over five years starting in year 3 of the contract. Conversely, the County committed to contribute a fixed share of the costs based on the ratio of County property value to Laboratory property value. This “County contribution” was also phased-in in 20% increments starting in year 3.

Thus the estimated year 7 contract amount was about \$9 million, with the County contributing about \$600,000 and receiving a management fee of \$360,000. The end result would have been that the County received excellent fire and emergency medical services for a net cost of \$240,000 per year, which from a cost perspective is approximately equal to what other communities of a similar size in northern New Mexico pay for fire protection. The big difference is that similar communities are served by a volunteer fire department, while Los Alamos enjoys the benefits of a world-class, full-time, paid fire service. DOE retained ownership and responsibility for the six fire stations and all of the operating equipment.

DOE Transition to LANL Contract

However, the DOE and the County never reached year 7 of that agreement. In the mid-1990’s, the cold war was over, the future of the nuclear weapons complex was in doubt, and tight Federal budgets abounded. DOE found itself in a budgetary position where Congress was slashing its staffing budget to manage contracts for the complex, while funds for contractors were stable or increasing slightly. In the summer of 1997, DOE told the University of California that LANL would contract with the County for fire and emergency medical services through a sole-source procurement. Also, no funding would accompany this increased responsibility.

The Laboratory complied with the directive, and proceeded to develop a statement of work (SOW) which would represent a “deliverable” under a contract between the County and the Laboratory. As with many LANL projects, the SOW was developed by a number of Laboratory personnel representing organizations with an interest in fire protection. Thus, the first SOW represented a “kitchen sink” approach to solving a variety of operational issues, and placing additional responsibilities and liabilities on the County. The SOW was delivered to the County in September, 1997 with the expectation that the contract would be negotiated and executed in a few weeks.

Since then, thousands of hours have been spent by a few County staffers working with many LANL personnel to hammer out acceptable language for essential fire department services. Paramount to these discussions has been the job of convincing Laboratory staff that a local government provides many services to citizens in addition to providing the subcontractor services LANL is interested in. Now in early 2005, the County and the University have still not executed a contract, and the University is paying the County on the basis of 45 day, pre-contract authority.

The only change to the financial arrangement is that both the County contribution amount and the County management fee have been eliminated, so the County pays nothing for fire and emergency medical services. While negotiations were on hold for over three years as both institutions struggled to recover from the Cerro Grande Fire disaster, the basic issue is that two sovereign governments have not found a way to share responsibility without giving up a portion of their sovereignty. Other than that, it has been business-as-usual with the County providing fire and emergency medical service and the Laboratory paying the bills. During this period, Congress approved special legislation that permitted DOE to transfer title and responsibility to the County for the three fire stations located in the community. A fourth station has yet to be transferred pending clean-up of contaminants near the property. Many of the issues encountered during the 15 year period of County operation will be identified in detail below.

ISSUES AND LESSONS LEARNED

The sections below will recount the major issues faced by the DOE and Los Alamos County as they worked through the transition of fire and emergency medical services from DOE to County responsibility. Some of these issues and lessons may be more or less applicable to the Nye County experience, because in Los Alamos they were caused solely or mainly by the existence of a prior DOE-owned fire department. All are included, nevertheless.

Staffing Levels of the Fire Department

Staffing for the Fire Department is established by the DOE based on an independent needs analysis, but staffing is always limited by the availability of funds. The County could supplement staffing with its own funds, if needed, but has not found it necessary to do so, with the exception of a fire marshal position that will be paid partially by the County for performing fire prevention and inspection services within the community. The staffing needs analysis is performed by an independent contractor, initially under contract to the DOE and now to LANL. This can cause a dilemma, as exemplified by the most recent needs assessment. The Laboratory's needs analysis contractor found that recent increases to the risk to the LANL caused by new work and facilities and by terrorism threats after 9/11 have caused the Department to need to nearly double the number of trained firefighters. This would increase the budget by about 75%, for which DOE does not have the funding. Because budgets are again tight due to the war needs, requests for increased funding to meet this staffing level are falling on deaf ears from both the administration and the Congress. DOE is trying to force the Laboratory to pay for the increased needs out of Laboratory overhead, but no resolution to this issue is now in sight.

Standards for Fire Department Operation

The DOE has its own or adopted (NFPA) standards for personnel, training, facilities, equipment, etc. When DOE "owned" all aspects of the Department, budget constraints would sometimes force them to overlook some of the standards. When part of the responsibility is contracted, DOE can "order" the contractor to meet the standards and this results in a negotiation over how to pay. There is an example of how this works. An updated needs analysis five years ago showed that more firefighters were needed when the funding was not available to support them. DOE resolved the issue by downgrading the increased need and ordering the County to eliminate 50% of the administrative staff to pay for some of the increased firefighter need.

Unused Capacity or "Local Fair Share"

Because of the significant risks to nuclear facilities, staffing and equipment is based on the premise of "planning for the worst and hoping for the best." This means that most of the time there is unused capacity to just protect the Laboratory. Thus, service to protect the community does not degrade protection to the Laboratory, and, in fact, keeps the personnel at a higher level of response since they are more active. This has been an ongoing issue between the DOE Inspector General (IG) and the DOE administration and the County. Early in the contract, the IG looked only at the number of responses and found that nearly 50% were to the community, but the County was paying less than 2% of the costs. This, in effect, equates a response to an incident at a nuclear facility to the response to the oven fire I had in my house last month. Part of the DOE and County response was to indicate that, in case of emergencies at both the Laboratory and the community, all on-duty personnel and equipment would respond to the Laboratory. Community needs would be served by off-duty personnel and by mutual-aid responses from nearby communities. The IG has never accepted these arguments. During the Cerro Grande Fire when both the Laboratory and the community were affected, the County operated as any municipal fire department and assigned all personnel and

equipment on the basis of risk. The County requested assistance from surrounding areas through the State Fire Marshal's office, and received assistance from crews of 66 fire departments across the State. With the wild fire crews from the National Forest Service, there were an estimated 2,500 fire fighters involved in fighting the Cerro Grande Fire at its peak. Logistics and communication were the big issues, due to the large number of personnel spread out over 100 square miles of mountain (Los Alamos County has over one mile of vertical over its 30 miles from east to west border.)

Dispatch of Fire Resources

When DOE operated the Fire Department, fire and emergency medical services were announced to on-duty personnel by the Laboratory's security contractor. Actual dispatch of units was accomplished by the operations battalion chief. A 911 call from the community would come in to the County Police communication center, and, if the call were for fire or emergency medical services, the Police dispatcher would call the Laboratory dispatcher, who then announced the call to the fire department who ultimately dispatched available personnel and equipment. When the Fire Department moved over to County control, the fire dispatch remained with the Laboratory for several apparent reasons. There was an existing contractor doing fire dispatch, and neither the DOE nor the Laboratory wanted to take an action to lay off those employees. The County did not have capabilities (space or equipment) to accept fire dispatch at that time. The police dispatchers had other duties, such as backup jail personnel. Also, emergency medical dispatch requires a higher degree of training, which the existing County dispatch personnel did not possess. Since 1990, the DOE and the County have independently initiated actions to transfer the dispatch to the County, but on several occasions the other party was not in a position to move forward. On one occasion DOE even issued a letter for the County to proceed to purchase equipment and hire staff; but, the letter was rescinded within a month. After the Cerro Grande Fire, LANL constructed a facility that contains a space for the new County consolidated dispatch operation, and renewed discussions are underway between the DOE, the Laboratory, and the County.

Unionization of Firefighters

The firefighters were not unionized when they were Federal employees, but the International Association of Fire Fighters (IAFF) immediately targeted the new fire County organization. The County is not otherwise unionized, and the IAFF received support from AFSCME (Association of Federal, State, County, and Municipal Employees) who saw a firefighter union as "the camel's nose under the tent" to get other County groups to organize. The firefighters learned the benefits of banding together when they contributed money and selected a spokesperson in order to get special Federal legislation to adjust some pension inequities that were overlooked during the transfer from the DOE to the County. By 1997, after a change to State Law, the union was recognized by the County. The issue this raises is that all funds for salaries and benefits come from the DOE either directly or through the Laboratory. When the County chooses to settle with the union, there is always a risk that the DOE will not approve the funding necessary for the settlement. The County has to keep LANL informed of its bargaining position on pay issues. Thus, the DOE is, in effect, a silent partner in the union negotiations. However, the DOE and other elements of the Federal government are silent but not invisible, and the union has attempted to use DOE officials, the Congressional delegation, and even State legislators on everything from grievance and discipline matters to pay and benefit negotiations.

DOE Approvals to Use Fire Department Resources

Initially, DOE had retained the right to give prior written approval for use of personnel and equipment for other than strictly Laboratory and community protection. Use of the ladder truck to string Christmas decorations was not approved, nor was participation in parades in surrounding communities. On the other hand, participation in the Los Alamos high school's homecoming parade was approved so long as the units were involved together and could still respond as a unit. Similarly, a request for one high-angle rescue team to go to San Francisco after the 1989 earthquake was approved. These restrictions were removed in 1992, and the County has the sole authority to assign its resources just as does any municipal fire department. The Laboratory assumption of the contract in 1997 added a restriction that only Fire Department personnel and personnel doing business with the County are allowed to ride in the fire vehicles provided by the Laboratory.

Reimbursement of Indirect County Costs

Under the contract, the DOE and now the Laboratory reimburses the County for direct costs of the Fire Department, and 17% of the contract is paid for "indirect" costs of other County departments that support the Fire Department. Direct costs are established prior to each reporting period, and no other expenses are incurred except by written DOE authorization. Indirect costs are established each year by an independent firm specializing in the preparation of indirect cost allocation plans. The indirect cost identification for the first year or two was somewhat difficult, but the whole process is now routine. Things that can change the costs from year-to-year include labor negotiations or a significant number of new hires or retirements. Amounts received by the County from insurance companies for ambulance services are treated as credits to the contract amount. In return for making significant annual cost savings available to the DOE and the Laboratory, the County has asked that the Fire Department personnel be able to respond to emergency calls within the community.

DOE Assignment of the Fire Contract to Another Contractor

Neither the County nor the Laboratory were prepared when DOE made the decision to transfer the Fire Department contract to the Laboratory and gave them no additional funding to go with the responsibility. Both the contract with DOE and with the labor organization should have given some thought to that eventuality, no matter how remote it may have seemed. Most DOE contracts have a provision that all personnel, with the exception of a few key individuals, are transferred to the new contractor whenever the contractor is changed.

Fire Contract FARs, DEARs, Orders, and Requirements

Federal Acquisition Regulations (FARs) and Department of Energy Acquisition Regulations (DEARs) are voluminous and complex. The 1993 Los Alamos contract references sixty-six FARs and nineteen DEARs, and the County managed to have five of the eighty-five total references deleted and have substitute provisions inserted in the contract. In addition, the DOE has published "Orders" on specific issues, and LANL has procedural "requirements" on areas related to fire protection and emergency response. These requirements change from time-to-time, and new orders are issued to mitigate universal contract problems that arise. These referenced requirements were researched by the County during contract negotiations, changes were made for requirements that created issues for the County, and a rigorous contract management structure was installed to minimize unintended infractions and eliminate any intentional ones. The attention to these requirements is extremely important to ensure that costs claimed under the contract are indeed "allowable", and the County does not have to use its own funds to pay back "disallowed costs" to the DOE.

Fire Contract Management

While the DOE Manager and the County Administrator are the responsible parties for the contract, both sides need to have additional responsible parties and alternates. The Fire Chief has a unique role with responsibilities to the County who employs him, the DOE who pays for his department, and the Laboratory management who he is paid to protect. This unusual relationship has changed only slightly with the assignment of the contract from DOE to the Laboratory. Since the Fire Chief has a security clearance and the County Administrator may not, the Fire Chief often has operational information about his department that he cannot discuss with his superior.

Continuous Training of Fire Personnel

Because of the complex issues that could be faced in an emergency in a nuclear complex and because there are not a great number of responses relative to the staffing, continuous training is a major activity of personnel management. For example, all firefighters are certified in basic EMT, and advanced EMT certifications are required for at least one person on an ambulance run. Physical training is yet another aspect of the training program that has, at times, been contentious during labor negotiations...

Recruitment of Firefighters

Los Alamos generally recruits nationwide, and is able to attract very able personnel due to the challenges offered by the Laboratory. The DOE Fire Department was more of a locally-recruited organization as are most municipal fire departments, with many families having numerous members involved in the Department. As the Department became less local, the older personnel raised an issue with the DOE and the Congressional delegation. As a result, early in

the contract the County had to organize a recruitment geared to local candidates. Screening is very extensive, and each recruitment has a significant amount of testing, checking, and comparative analysis. Testing procedures are validated by an outside firm. All personnel are required to have security clearances after selection, and the DOE pays the cost of that process with the Office of Personnel Management. However, the County is required to prescreen candidates to try to eliminate security clearance failures. Prescreening is also important to reduce failures from the DOE's Human Reliability Program annual employee screening.

Cost Comparison – County Versus Private

Contracting with Los Alamos County offered the DOE significant cost savings over contracting with a private entity for fire and emergency medical services. The first category is "avoided" costs, such as the New Mexico Gross Receipts Taxes on services as well as goods; and which would have been over \$500,000 on the 1998 projected \$9 million contract. A second is Federal and New Mexico corporate income taxes which are difficult to hypothesize. By far the biggest cost avoidance was the County's exemption from overtime payments under the Fair Labor Standards Act (FLSA), nearly a \$4 million saving per year that cannot be enjoyed by a private contractor. The Contract Work Hours and Safety Standards Act (CWHSSA) requires Federal contractors to pay overtime over 40 hours, but permits the DOE to apply to the Department of Labor (DOL) for an exemption for a contract with a local government. The DOL exemption from the over 40 hour per week overtime requirement in FLSA required the County to only pay overtime for more than 53 hours. Los Alamos Firefighters work a 56 hours average week (24 hours on-duty and 48 hours off-duty), and receive regular pay for the first 53 hours and overtime pay for the last three hours. The last two savings are in avoided indirect costs and corporate profits – a significant savings per year to the DOE.

Finally, there are New Mexico state-shared revenues available to the County that are not available to a private contractor. The State shares fire insurance premium proceeds with local fire departments, and Los Alamos receives in excess of \$200,000 for facilities and equipment that is not available to a non-governmental fire unit. Also, the County receives a small amount of State funding for providing certified emergency medical services. The County estimates, and DOE has agreed, that the cost of a private contractor managing the Fire Department would be at least 50% higher than the County's cost.

Benefits to the County

There are several benefits to the County of the contract with the DOE for fire and emergency medical services. The first is a lower-cost, highly-professional level of service. Second are significant pre-fire planning activities. The third is the availability of the advanced equipment technology necessary to protect the Laboratory. The fourth is lower fire insurance premiums to citizens. The last is fiscal benefits to the County through the management fee allowance.

Fire Department Equipment

DOE continues to own and maintain the fire equipment, including fire and rescue trucks and command rolling stock needed by the Department to do its job. However, the DOE has had problems getting funding to update obsolete equipment. The County and the DOE discussed transfer of the Fire equipment that went with the three fire stations that were transferred to the County. All of the rolling stock was over or near its useful life, and the County required a significant amount of funding to complete the deal so that the units would all fit into the County's vehicle replacement fund. DOE could not come up with the cash, and that part of the deal fell through. The Cerro Grande Fire Compensation Act provided funding to DOE to replace all of the equipment, but no one is sure how the next round of replacements will be handled.

Emergency Medical Services

All firefighters have basic emergency medical training, so that there is not a special staffing needed for the ambulances. The EMS work is performed under the direction and license of a medical director under contract to the County and paid with funds under the fire contract. The Emergency Room Director of the Los Alamos Medical Center has been the contractor up to now.

Emergency Operations Center (EOC)

The County and the Laboratory have done joint and separate emergency exercises, and the Fire Department participates in all of them. However, the exercises never anticipated an incident that so significantly affected both the Laboratory and the community as did the Cerro Grande Fire. While there were hundreds of millions of dollars in property damage to both entities, there were no fatalities, and injuries to only three firefighters. There were significant lessons learned, and one of the major lessons was how difficult it is to communicate between two emergency operations centers. While the County tried to have a representative in the Laboratory center and the Laboratory tried to be represented in the County center, both organizations were stressed to the point that this necessary coordination wasn't always possible. One outcome of the Fire was funding for a \$21 million joint emergency operations center operated by the Laboratory for use by the Laboratory and/or the County, as well as by other major landowners as the National Forest Service and the National Park Service. The County is planning for a public safety complex in the White Rock portion of the County, and is planning on building a secondary EOC space with significantly different location parameters and with joint information center (JIC) capability. During the Fire, the JIC was forced to move three times due to threats, and its final location 35 miles away in Santa Fe was not usable by any of the media.

Emergency Services Communications

As most organizations involved in disasters have found, communication systems dissolve quickly in emergency situations. The canyon and mesa topography in Los Alamos and the one mile vertical drop across the County from west to east makes wireless communications difficult in non-emergency situations. Then, when sixty-six separate firefighting organizations with their individual communications systems are involved and the National Guard and five police and security entities with different systems are added, a serious issue can develop. As many local governments have found, amateur radio operators became invaluable by providing critical communications linkages. Communication may continue to be a problem as long as there are so many jurisdictions making independent communications system decisions among non-compatible commercial system providers.

Emergency Evacuation Options

The County successfully evacuated during the Cerro Grande Fire with the Laboratory being closed, and the Laboratory successfully evacuated on 9/11 with the community remaining in place. A forced evacuation of the two at the same time would create significant confusion due to the limited number of egress routes and the difficult topography. The County is now looking at shelter-in-place for certain types of incidents, and is making plans to prepare shelters for certain eventualities.

Downsides to the County

Assumption of the Fire Department into the County was a significant expansion of the organization and the County budget. Contracting with the DOE took some traditional local government decisions out of the control of the administration and the elected officials. Since the Federal regulations are complex and demanding, and the County needed to install rigorous legal, fiscal and management controls to minimize the risk to the County. Finally, the administrative support staff within the Fire Department is larger than in other County departments in order to meet the demanding contract provisions, and this has occasionally caused morale issues with the other departments.

Timing

Working with the DOE and its many regulations adds a new level of complexity to even simple issues. For example, security clearance investigations usually take over a year to complete, and the absence of a clearance restricts the new firefighter's ability to work in all facilities within the Laboratory. However, in a true emergency incident there are no restrictions so long as the personnel are escorted by cleared employees as per DOE regulations and are "debriefed" once the emergency is concluded.

Stability

Both the DOE and the Laboratory can only contract in five year increments, and the contracts are technically year-to-year since they are subject to the appropriation of funds by the Congress. Some potential employees find this unsettling, and the County must always keep in mind the "what if" of the contract being terminated.

Space

Neither the DOE nor LANL was able to provide office space for Fire Department administrative functions. The County did not and does not have any space available. The County has leased office space from a private owner, and the cost of the lease is reimbursable under the contract, although subject to prior approval. Also, after the County took ownership of the three stations in the community, they were upgraded using State Fire Marshal funds to improve living conditions and increase functionality for current operating requirements. The difference between the refurbished stations in the County and the barely functional facilities at the Laboratory has caused some morale issues within fire department personnel.

CONCLUSION

The County is happy with the benefit of receiving excellent fire and emergency medical services at little or no cost. To date, the issues of having extensive contract requirements and having significant oversight and direction of resources provided from outside the County, have not diminished the County's interest in pursuing this contract. The alternative of the County and the DOE having separate fire departments does not make economic sense and is not to the benefit of either party.

APPENDIX C

Energy Communities Alliance Peer Exchange: Emergency Services
Los Alamos County, New Mexico, July 13-15, 2005

**Energy Communities Alliance Peer Exchange:
Emergency Services
Los Alamos County, New Mexico
July 13-15, 2005**

Energy Communities Alliance (ECA) held a peer exchange in Los Alamos County, N.M., to discuss emergency services issues with representatives of Los Alamos County, the town of Pahrump and Nye County, Nev., and the city of Oak Ridge, Tenn. During pre-meeting planning, community representatives identified three broad issues that they wanted to discuss during the peer exchange: (1) fire services; (2) police services; and (3) medical services.

BACKGROUND

Los Alamos County is a consolidated city-county entity located on the eastern slope of the Pajarito Plateau. The county spans 108 square miles and has 18,500 residents. Only 13 percent of the land in the county is not owned by the federal government.

Los Alamos National Laboratory (LANL) was established in 1943 as a secret Manhattan Project site. The lab covers 39.5 square miles and is located entirely within Los Alamos County. LANL has more than 2,100 facilities containing more than 8 million square feet of space. The lab has 15,375 workers who will earn total salaries and benefits of nearly \$1.2 billion in 2005. The lab's operating budget for 2005 is \$2.2 billion.

Los Alamos County has provided fire services to LANL since September 1989. The Nevada participants were interested in how they could adapt the lessons learned at LANL to their embryonic plans to provide similar services at the planned Yucca Mountain nuclear waste repository. The Oak Ridge attendees wanted to apply those same lessons for their plans to provide services at part of the Oak Ridge National Laboratory (ORNL).

SUMMARY

Tour of Los Alamos Fire Department

The Los Alamos Fire Department (LAFD) was organized under the Manhattan Project in April 1943. It initially was staffed with seven civilian and 25 volunteer firefighters. In September 1943, firefighting functions were taken over by the military. The Fire Department was governed by the Atomic Energy Commission and the Department of Energy until the Incorporated County of Los Alamos took it over in September 1989.

Today, LAFD operates six fire stations, three of which are owned by the county and three of which that are owned by LANL. The department has 135 budgeted positions — 117 uniformed and 18 civilian. LAFD provides fire and emergency medical services throughout the county and at LANL under a contract between the county and the University of California, which manages the lab.

Fire Chief Douglas MacDonald explained that relationship-building between lab administrators and the county have allowed for each party to understand the other's priorities. For instance, he noted, DOE is looking at developing a maintenance plan for firefighting apparatus. This reflects an appreciation of what the fire department needs to fulfill its end of the contract.

All Los Alamos firefighters must obtain and maintain a "Q" security clearance with DOE. This allows firefighters to respond to calls on lab property. In the event of an alarm at the lab, LAFD is notified. Security at the lab then is alerted that firefighters will arrive on the scene shortly. Firefighters are allowed onto lab property immediately. A security check of the responders and the response vehicles is performed after the emergency is addressed.

The need for a "Q" security clearance requires a more thorough review of LAFD personnel than is done at typical fire departments. This means that LAFD personnel must be even more vigilant in maintaining a clean record.

While LAFD provides emergency fire coverage at LANL, the lab has a fire marshal of its own who performs fire code compliance inspections at the facility.

Frances Berting, Chair of the Los Alamos County Council, said the coordination of services between LANL and the county has allowed the county to provide more services to its residents than other communities of its size. In fact, most municipalities with less than 20,000 residents have volunteer fire departments.

While this is one of many advantages that have resulted from the county's contract with the lab, County Administrator Max Baker said communities must be aware of the ramifications of becoming a contractor for the federal government. He said the county had to become familiar with the complex Federal Acquisition Regulations and Department of Energy Acquisition Regulations that govern the contracting process. Having a federal contract places a greater demand for paperwork and record-keeping, he said. That has created a need to hire more administrative staff. Baker also said that the county had to add an accounting system that would allow it to keep track of indirect costs related to managing the fire contract.

Baker agreed with Berting that the fire contract has created a mutually beneficial relationship for the county and DOE. He said that any municipality interested in following Los Alamos County's example needs to be prepared to make its case to DOE and the facility that would be served. Compare the service that the site currently receives and how much more can be provided via a contract with the municipality.

Los Alamos County estimated that DOE and LANL save about \$9 million annually by contracting with the county for fire services. Nearly half of the savings, \$4 million, resulted from the county's exemption from overtime payments under the Fair Labor Standards Act. The Contract Work Hours & Safety Standards Act requires federal contractors to pay overtime above 40 hours per week, but permits DOE to apply to the Department of Labor for an exemption for a contract with a local government. The Labor exemption requires the county to only pay overtime for more than 53 hours. The county calculated that another \$2 million is saved because of the county's lower indirect cost rate.

Tour of Emergency Operations Center

The LANL Emergency Operations Center (EOC) was built in response to the devastating Cerro Grande fire in 2000. The fire emphasized the deficiencies of the LANL emergency operations center (EOC). It was cramped, had limited communications capabilities and sat in a vulnerable location. Before the fire, the county and LANL each had an emergency operations center. The fire showed the difficulties involved with communicating between the two centers.

Thanks to the New Mexico congressional delegation, LANL received \$21 million to build a new operations center that could become a model for new facilities at other DOE sites. The 38,000-square-foot center will be operated by LANL and used by the lab, the county, the Forest Service and National Park Service. The center has stores of food, water and fuel to operate in isolation for two weeks.

Whereas the county did not have a center like this of its own, the new center accommodates county emergency services personnel. The county police department is expected to move its 911 call center to the EOC in October. Ultimately, county police and fire operations will be run out of the center, providing for a joint dispatch center. The structure of the building allows county emergency workers to operate at the EOC without interfering with LANL operations and vice versa.

County Police Chief Wayne Torpy said more than \$1 million will be spent to equip the joint dispatch center. The police department is expected to move personnel there in October, with the fire department following suit later.

LANL is a challenging site for security. It has 7 million classified records, 200,000 classified weapons parts, 2,000 classified computers and 25,600 pieces of accountable classified electronic media. This is spread over a site that covers 40 square miles, or roughly two-thirds the size of Washington, D.C.

Darryl Overbay, Deputy Division Leader for Security & Safeguards at LANL, gave an overview of the security functions, contract guard services and law enforcement functions provided at the lab. The University of California, as the management contractor for the lab, has a 250-person staff that provides site security planning, physical security support, security systems, cyber security, personnel security and security training. Another 600 personnel constitute the combat security force. This group provides all uniformed guard services at LANL. They can be armed and unarmed security officers at access points, armed security officer patrols who respond to alarms and emergencies, and special response teams, who have SWAT capabilities. In that sense, they are trained to respond to hostage situations, terrorist incidents, bomb threats and demonstrations.

Law enforcement functions are provided by the Los Alamos Police Department via a series of memoranda of agreement. Police provide traffic control, accident response, criminal investigations and some emergency response services.

Tour of Occupational Medicine Facility

The final part of the Peer Exchange was a tour of the 21,000-square-foot LANL Occupational Medicine facility, which opened in mid-December 2003. Lab workers can come here for treatment of on-the-job injuries. New lab personnel also are given physicals at the center. About 100 people work at the medical center.

Dr. William Brady, director of the center, explained the philosophy of occupational medicine:

- Diagnosis and treatment of occupational injury or disease should be prompt, with emphasis placed on rehabilitation and return to work.
- Responsible first-line management and health and safety groups should be notified of unhealthy work situations.
- Employees should be encouraged to utilize services of a private physician or medical facility for care of non-occupational injuries or illnesses. The medical department should assist employees who become ill at work. Care should be available for what may be judged a short-term, self-limited condition.

Dr. Brady said that any lab worker with an occupation-related injury or illness should be evaluated before being cleared to return to work. When appropriate, work restrictions are communicated to an employee's management. The doctor added that clearances to return to work are required when an employee misses five or more consecutive workdays, has a procedure or treatment that would alter their ability to perform their job in a safe and reliable manner, or was hospitalized during that time.

The center also oversees an Employee Assistance Program that includes counseling, health promotion and injury/illness prevention components. Dr. Brady is responsible for all wellness programs as an essential component of the center's preventative medicine program.

Dr. Brady suggested that the medical site emergency and disaster plan should be part of a site's overall emergency and disaster preparedness plan. That plan, he said, should be integrated with surrounding community resources, such as off-site medical facilities, local emergency planning committees and local police. The medical portion of the plan should consider the type of operations at the site, number of employees, emergency response capabilities, and the type and severity of accidents and trauma.

The Pahrump and Nye County participants were interested in touring the medical center because they are considering the development of a medical facility near Yucca Mountain that could serve repository workers and area residents alike. Dr. Brady told the group that any facility serving lab workers and the community at large should feature a medical staff with a mixture of specialties, including internal medicine, family medicine and occupational medicine.

CONCLUSION

Based on the site tours and presentations from speakers, two overarching points came through that can apply to any DOE community that is considering providing contract services to the department and/or its sites:

1. Relationship-building between the county and laboratory has been instrumental in understanding each party's priorities.
2. Communities interested in providing emergency services to federal facilities must become familiar with federal and agency policies and acquisition regulations.

Peer Exchange Participants

Participating in the peer exchange were:

Los Alamos County — Max Baker, County Administrator; Frances Berting, County Councilor; Fred Brueggeman, former County Administrator; Douglas MacDonald, Fire Chief; Wayne Torpy, Police Chief; and Doug Tucker, Deputy Fire Chief.

City of Oak Ridge — Mack Bailey, Fire Chief; David Beams, Police Chief; Larry Lewis, Battalion Chief, Oak Ridge Fire Department; and Alan Massengill, Captain, Oak Ridge Police Department.

Town of Pahrump and Nye County — Gary Hollis, Nye County Board of Commissioners; Casimir Jaszczak; Rick Moore, Pronghorn Environmental Planning; David Richards, Town Manager; Gus Sullivan, Deputy Sheriff, Nye County; David Swanson, Interim Project Manager, Nye County Nuclear Waste Repository Project Office; and Jim Williams.

Los Alamos National Laboratory — Dr. William Brady, Director, Los Alamos National Laboratory Occupational Health; Gene Darling, Manager, Joint Emergency Operations Center; and Darryl Overbay, Deputy Director, Security & Safeguards Division.

ECA —Deputy Director Paul Kalomiris and Program Manager Sara Szyrwelski.

APPENDIX D

Agreement for Consultation and Cooperation
between Department of Energy and the State Of New Mexico
on the Waste Isolation Pilot Plant

APPENDIX E

Possible Nye County Support for 10 CFR 72.32(b)),
Radiological Accident Emergencies
(Working Draft)

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
(1) Facility Description							
1.1 Description of Licensed Activity		√					
1.2 Description of Facility and Site		√					
1.3 Description of Area Near the Site Include maps of general area (10-20 mile radius) and near-site area (1 mile radius)	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system	√	√	This is where Susan's inventory of Nye County emergency services will be very useful Possible item for Phase II contract could include completion of "911" mapping system for Nye County, and GIS/GPS home address system to enable emergency responders to identify homes with handicapped, elderly, and other special needs persons.
1.3.1 Locations of population centers (towns, cities, office buildings, factories, schools, arenas, stadiums, etc.)	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
1.3.2 Locations of facilities that could present potential protective action problems (schools, arenas, stadiums, prisons, nursing homes, hospitals, etc).	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
1.3.3 Identification of primary routes for access of emergency equipment or for evacuation, as well as potential impediments to traffic flow (rivers, railroad grade crossings, major intersections, etc).	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
1.3.4 Locations of fire stations, Sheriff's offices, hospitals, and other offsite emergency support organizations (specify whether qualified to handle exposure to radioactive contamination or toxic chemicals).	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
1.3.5 The sites of potential emergency significance (e.g. liquefied petroleum gas terminals, chemical plants, pipelines, electrical transformers, and underground cables).	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
1.3.6 Identification of the types of terrain and the land use patterns around the site.	√		Collect and compile information and develop the maps	Offsite Emergency Operations Center - GIS system		√	
(2) Types of Accidents							
		☐					

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
2.1 Radioactive materials accidents and non-radioactive hazardous material releases.		√					The types of accidents and accident scenarios for the repository need to be identified. This information is necessary in order for Nye County to fully identify possible support roles/services; to identify equipment, supplies, and personnel for building emergency response capabilities; and to assess emergency response training needs
(3) Classification of Accidents							
3.1 Alert	√	<input type="checkbox"/>	Notification and mobilization of offsite emergency responders (if required) Respond to onsite emergency with fire, medical, ambulance, law enforcement services.	Medical support facility Fire, ambulance, and paramedic station Sheriff's office Offsite Emergency Operations Center	√		An incident that has led or could lead to a release to the environment of radioactive or other hazardous material, but the release is not expected to have offsite consequences. An alert may require offsite response organizations to respond to an onsite accident. Events could include onsite fire; natural phenomena such as flood, earthquake, explosion; security compromise, etc.
3.2 Site Area Emergency	√	<input type="checkbox"/>	Notification and mobilization of offsite emergency responders Respond to onsite and offsite emergency with fire, medical, ambulance, law enforcement services.	Medical support facility Fire, ambulance, and paramedic station Sheriff's office Offsite Emergency Operations Center	√	√	An incident that has led or could lead to a significant release to the environment of radioactive or other hazardous material that could require a response by an offsite organization to protect persons offsite. A site area emergency may result in requests for offsite organizations to respond to the site. Events could include fire; severe natural phenomenon; other severe incident (e.g. aircraft crash into the facility or explosion);
(4) Detection of Accidents							
4.1 Means for detecting each type of accident		√			√		The plan requirement is directed to onsite detection, such as visual observations, radiation monitors, smoke or heat detectors, or process alarms. See Section 6 for discussion of offsite monitoring.
(5) Mitigation of Consequences							

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
5.1 Limiting Actions	√	□	Fire fighting assistance	Fire Station	√		The plan requirement is directed to address actions and systems to reduce the magnitude and /or reduce the effect of a radioactive or hazardous material release that has occurred. This includes systems such as sprinklers, fire suppression, fire detection, filtration, water sprays on airborne releases of radioactive material, automatic shutoffs, use of fire resistant building materials, and fire fighting.
5.2 Onsite Protective Actions	□						The plan requirement is directed to onsite protective actions, evacuation, use of protective equipment and supplies, and use of appropriate decontamination control measures.
5.2.1 Exposure Guidelines for Emergency Response Workers	√		Assistance with removing injured persons Providing onsite first aid Assisting with personnel decontamination Providing ambulance service or offsite medical treatment Notification of offsite emergency response personnel	Ambulance services Paramedic and Ambulance services Decontamination facility Ambulance and Medical support facility Offsite Emergency Operations Center	√		The plan requirement is directed to controlling and/or minimizing radiological exposures for emergency response workers. The onsite exposure guidelines should be consistent with the EPA Manual of Protective Action Guides used to control files, stop releases, or protect the facilities.
5.2.2 Onsite Personnel Evacuation	√		Notification of offsite emergency response personnel Search and rescue Offsite assembly areas Onsite personnel evacuation transportation Monitoring evacuees for contamination Evacuating and treating onsite personnel, including radiation	Offsite Emergency Operations Center Sheriffs Office Offsite Emergency Operations Center Offsite Emergency Operations Center Medical support facility	√		The plan requirement is directed to onsite personnel evacuation and accountability

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
			contamination	Medical support facility			
5.2.3 Radiation Exposure Dose Determinations	√		Assist with determining radiological dose exposures Assist with distribution of dosimeters, both self-reading and permanent record devices.	Medical support facility	√	√	The plan requirement is for provisions to determine the doses and dose commitments from external radiation exposure and internally deposited radioactive material received by emergency response personnel, including personnel from offsite emergency response organizations.
5.2.4 Hospital and Medical Services, both primary and backup	√		Assistance with evaluating and treating contaminated, injured persons and injuries involving radiation, radioactive materials, and other hazardous materials used with radioactive materials Provide medical facilities with capability to control contamination that may be associated with physical injuries Assist with providing medical transport for potentially contaminated injured personnel Provide ambulance and medical personnel with health physics support	Medical support facility	√	√	The plan requirement is for arrangements for hospital and medical services, both primary and backup. If Nye County is to embark on providing radiological medical services and facilities it would require expansion of current facilities with dedicated decontamination structure(s). Adequate space exists at the Desert View Regional Medical Center and physical plant was designed with such expansion in mind.

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
5.3 Emergency Response Equipment and Facilities	√		Provide Emergency Operations Center alternate location from which emergency control and assessment activities would occur and alternate communication system. Provide medical support facility to dispense potassium iodide (if required)	Offsite Emergency Operations Center Medical support facility	√	<input type="checkbox"/>	The plan requirement is for alternate emergency control and assessment center, which would be stocked with protective equipment and supplies, a means for distributing these items, and a means for dispensing potassium iodide, if required. The plan requirement is also directed to an alternate communication system (both onsite and offsite) to transmit and receive information throughout the emergency.
5.4 Offsite Protective Actions	√		Coordinate with DOE on the potential offsite protective action recommendations for each postulated accident	Offsite Emergency Operations Center	<input type="checkbox"/>	√	The plan requirement is for DOE to identify the conditions that would require protective actions offsite and list the postulated accidents that could meet any of the conditions. Protective action recommendations (PAR) should be discussed with the offsite authorities.
(6) Assessment of Releases							
6.1 Onsite sampling and monitoring	√		Assist with offsite sampling and monitoring Assist with projections of offsite radiation exposures	Offsite radiological and meteorological monitoring facility Offsite Emergency Operations Center - GIS analysis		√	The plan requirement is directed to determining the extent of the problem and what corrective actions may be required. Should identify the types and methods of onsite and offsite sampling and monitoring in the case of a release of radioactive or other hazardous material. The provisions for projections of offsite radiation exposures should be described.
(7) Responsibilities							
7.1 Identification of Emergency Response Organization Responsibilities	√		Coordinate development of emergency organization plan and procedures, organization charts, activation plans, interface for offsite emergency services support, records, and interface with other government (local, state and Federal) agencies or organizations having authority for radiological or other hazardous material emergencies.	Offsite Emergency Operations Center	√	√	The plan requirement is directed to the onsite emergency organization to be activated onsite for possible events, and offsite augmentation and support. The plan should delineate authorities and responsibilities of key positions and groups, identify the communication chain for notifying and mobilizing personnel during normal and non-working hours, and identifying interfaces with offsite response organizations.
(8) Notification and Coordination							
8.1 Activation of onsite emergency response organization	<input type="checkbox"/>	√			<input type="checkbox"/>	<input type="checkbox"/>	

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (Working Draft)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
8.2 Notification to offsite response organization of accident and communication of recommended offsite protective actions (if required).	√		Provide a single point-of-contact for notification	Offsite Emergency Operations Center		√	The plan requirement is directed to the notification of offsite response organizations (normally within 15 minutes of declaration of alert or Site Area Emergency)
8.3 Mechanism to request offsite response organization assistance	√		Provide a single point-of-contact for request for offsite emergency services	Offsite Emergency Operations Center	√	√	The plan requirement is directed to the means to promptly request offsite assistance, including medical assistance for the treatment of contaminated injured onsite workers.
8.4 Mechanism for notifying offsite response organization of termination of emergency or entering recovery mode	√		Provide a single point-of-contact for notification of emergency status changes.	Offsite Emergency Operations Center		√	
(9) Information to be communicated	<input type="checkbox"/>	<input type="checkbox"/>					
9.1 Information to be communicated for each postulated accident	√	<input type="checkbox"/>	Assist with the development of standard reporting checklist for types of information to be communicated for each postulated accident. This information should be developed in cooperation with the offsite emergency response officials to ensure the Nye County information needs are addressed.	Offsite Emergency Operations Center		√	The plan requirement is directed to development of information to be provided to the offsite emergency response organization. The information to be communicated includes status of the facility; if a release of radioactive material is occurring or could occur; and recommendations for protective actions that may be implemented by the offsite response organizations responsible for implementing protective actions.
(10) Training							
10.1 Onsite Personnel Training	√		Provide training facility for onsite emergency response personnel	Training Center	√		The plan requirement is directed to the description of required emergency response training.
10.2 Offsite Emergency Response Personnel Training	√		Provide training facility for offsite emergency response personnel	Training Center		√	The plan requirement is directed to the description of special instructions and orientations to be provided to offsite emergency response personnel.
(11) Safe Condition							
11.1 Onsite facility restoration procedures		√					The plan requirements are for procedures for restoring the facility to a safe status after an accident and recovery plans
11.2 Emergency and safety equipment readiness	√		Check and restore to normal operation all offsite safety and emergency equipment, and supplies used during an accident to a state of readiness	Offsite Emergency Operations Center Medical services center		√	The plan requirement is ensure a return to state of readiness after an accident.
(12) Exercises							
12.1 Periodic Drills and Exercises	√	<input type="checkbox"/>					The plan requirement is for provisions to conduct periodic drills and exercises. The Nye County Offsite Emergency Operations Center could be

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
							used in an accident scenario requiring an alternate command center
(13) Hazardous Chemicals							
13.1 Inventory of Hazardous Materials on the site		√					The plan requirement is for a list of all hazardous chemicals used at the site.
(14) Comments on Plan							
14.1 Comments from offsite response organizations	√						The plan requirement is directed to obtaining comments from offsite response organizations on the DOE initial emergency response plan prior to submittal to the NRC with the license application. There is also a provision for letters of agreement with offsite response organizations.
(15) Offsite Assistance							
15.1 Provisions and arrangements for assistance from offsite response organizations during and after an emergency	√		Provide for medical treatment, first aid, ambulance service, fire fighting, law enforcement, security and safeguards assistance, training and public information assistance, and alternate offsite emergency operations command center, offsite radiological and meteorological monitoring station.	Medical support facility Fire Station Sheriff's Office Emergency Operations Center Training Center Public Information Center Offsite monitoring station	√	√	The plan requirement is directed a provisions and arrangements for assistance from offsite response organizations during and after an emergency. The plan should identify the services to be performed, means of communication and notification, and types of agreements.
Under NUREG-1804 -Section 2.5.7 "Emergency Planning", Acceptance Criterion 1 (Section 2.5.7.3) for "An Adequate Emergency Plan for Responding to Potential Radiological Materials and Other Accidents at the Geologic Repository Operations Area is Provided", item 19, "Verify that plans for use of off-site assistance include":	□				□	□	
(a) Arrangements for requesting and effectively using off-site assistance and provisions for using other organizations that can augment the planned onsite response	√			Offsite Emergency Operations Center	□	√	

Possible Nye County Support for 10 CFR 72.32(b)), Radiological Accident Emergencies (*Working Draft*)

REQUIREMENT Emergency Plan - 10 CFR 72.32(b) Required as part of License Application	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
(b) Provisions for prompt communication among principal response organizations to off-site personnel who would be responding onsite	√			Offsite Emergency Operations Center	<input type="checkbox"/>	√	
(c) Provision of adequate emergency facilities and equipment to support the emergency response onsite	√			Medical support facility Fire Station Sheriff's Office Emergency Operations Center Training Center Public Information Center Offsite monitoring station	√	√	
(d) Specification of methods, systems, and equipment for assessing and monitoring consequences of radiological emergency conditions	√			Offsite monitoring station	<input type="checkbox"/>	√	
(e) Arrangements for medical services for on-site contaminated and injured individuals; and	√			Medical Support Facility	√	√	
(e) Training in radiological emergency response for off-site personnel who may be called to assist in an emergency	√			Training Center	<input type="checkbox"/>	√	
(16) Public Information							
16.1 Public Information during emergency	√		Press briefing room at the Offsite Emergency Operations Center for distribution of press releases Public information center with information for each emergency scenario	Offsite Emergency Operations Center - media room Public Information Center		√	The Plan requirement is directed to providing information to the public and media

APPENDIX F

Possible Nye County Support for DOE Order 440.1A,
Worker Safety and Health
(Working Draft)

Possible Nye County Support for DOE Order 440.1A, Worker Safety and Health (Working Draft)

REQUIREMENT Worker Protection Management for DOE Federal and Contractor Employees (DOE Order DOE O 440.1A) Attachment 2: Contractor Requirements Document, Section 19 "Occupational Medical"	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On-site"	Support to "Off-Site"	COMMENTS
19(c) Maintenance of a Healthful Work Environment		<input type="checkbox"/>					
Occupational medical physicians and selected medical staff knowledgeable about work-related or work site hazards and possible health effects to employees, identify potential or actual health effects resulting from worksite exposures, and communicate results of health evaluations to those responsible for mitigating worksite hazards.	√	<input type="checkbox"/>	Provide occupational medical physicians, nurses, and staff who have an ongoing familiarity and awareness of existing or potential work-related health hazards, employee job risks, and worksite environments.	Medical support facility	√		Under DOE G 440.1-4 "Contractor Occupational Medical Program Guide for use with DOE Order 440.1", Occupational medical services may be provided by private physicians or medical groups that are capable of fulfilling the requirements and intent of DOE O 440.1
19(d) Employee Health Examinations		<input type="checkbox"/>					
The following classes of examinations are required for the purpose of providing initial and continuing assessment of employee health: Preplacement in accordance with the Americans with Disabilities Act Qualification examinations Fitness for duty Medical surveillance and health monitoring Return to work evaluations Termination examinations	√		Provide facilities and staff resources to conduct medical examinations for onsite employees.	Medical support facility	√		Under DOE G 440.1-4 "Contractor Occupational Medical Program Guide for use with DOE Order 440.1", minimum elements of a comprehensive evaluation include: medical/occupational history physical examination laboratory studies review and evaluation of findings
19(e) Monitored Care							
The occupational medical program shall be responsible for the review of all monitored care of ill and injured employees to maximize their recovery and safe return to work. Contractor management shall notify the physician responsible for the delivery of medical services when an employee has been absent because of an injury or illness for more than 5 consecutive workdays or experiences excessive absenteeism	√		Provide occupational medical physicians, nurses, and staff who have an ongoing familiarity and awareness of existing or potential work-related health hazards, employee job risks, and worksite environments.	Medical support facility	√		A monitored care program will require coordination with managers, employee benefits programs, and human resources staff.
19(f) Employee Counseling and Health Promotion							

Possible Nye County Support for DOE Order 440.1A, Worker Safety and Health (Working Draft)

REQUIREMENT Worker Protection Management for DOE Federal and Contractor Employees (DOE Order DOE O 440.1A) Attachment 2: Contractor Requirements Document, Section 19 "Occupational Medical"	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On- site"	Support to "Off- Site"	COMMENTS
19(f)(1) Review and approve the medical aspects of contractor sponsored or supported employee assistance, alcohol, or other substance abuse rehabilitation programs	√		Provide program information to YMP workers at the Medical support facility Provide training facility	Training facility	√		
19(f)(2) Approve and coordinate all contractor sponsored or supported wellness programs	√	□	Provide program information to YMP workers at the Medical support facility Provide training facility	Training facility	√		
19(f)(3) Ensure that training and immunization programs are available for workers potentially at risk of exposure to blood borne pathogens.	√	□	Provide immunizations Provide program information to YMP workers at the Medical support facility Provide training facility	Medical support facility Training facility	√		
19(g) Medical Records							
Employee medical records shall be developed and maintained for each employee for whom medical services are provided; confidentiality maintained; and adequately protected and stored permanently.	√		Develop medical records for treated employees	Medical support facility - medical records	√		
19(h) Emergency and Disaster Preparedness							
19(h)(1) The physician responsible for the delivery of medical services shall be responsible for the medical portion of the site emergency and disaster plan	√		Provide medical support services for onsite emergencies	Medical support facility Fire and rescue station Ambulance services Offsite Emergency Operations Center	√		
19(h)(2) The medical portion shall be integrated with the overall site plan and with surrounding community emergency and disaster plan	√		Provide medical support services for offsite emergencies	Medical support facility Fire and rescue station Ambulance services Offsite Emergency Operations Center	√	√	
Additional guidance from Under DOE G 440.1-4 "Contractor Occupational Medical Program Guide for use with DOE Order 440.1" for Emergency and Disaster Preparedness							

Possible Nye County Support for DOE Order 440.1A, Worker Safety and Health (Working Draft)

REQUIREMENT Worker Protection Management for DOE Federal and Contractor Employees (DOE Order DOE O 440.1A) Attachment 2: Contractor Requirements Document, Section 19 "Occupational Medical"	Possible Nye County Support	No Nye County Support	NYE COUNTY POSSIBLE INVOLVEMENT	NYE COUNTY FACILITY	Support to "On-site"	Support to "Off-Site"	COMMENTS
1. Capabilities for medical aid, triage, and personnel decontamination by trained, qualified medical staff members	√		Provide facilities and staff resources	Medical support facility	√		
2. Capabilities for cardiopulmonary resuscitation, cardiac defibrillation, and advanced cardiac life support	√		Provide facilities and staff resources	Medical support facility	√		
3. Services of health physicists and industrial hygienists to evaluate any associated radiological or chemical hazards affecting the casualties, the general public, or the environment, and to assist rescue and medical personnel	√		Provide facilities and staff resources	Medical support facility Offsite Emergency Operations Center	√		
4. Arrangements for adequate offsite treatment of injuries and illnesses resulting from exposure to radiation and/or toxic materials, including internal and external contamination	√		Provide facilities and staff resources	Medical support facility	√		
5. Services of medical specialists and consultants	□	√			□		
6. Services of rescue squads, ambulances, and helicopters, as needed with the capability of handling radioactively contaminated casualties, as appropriate	√		Provide facilities and staff resources	Medical support facility Fire and rescue station / ambulance	√		
7. Medical aid coverage during evacuation operations from facilities and the site	√		Provide facilities and staff resources	Medical support facility Offsite Emergency Operations Center	√		
8. Communication links between medical aid and triage teams, fire and rescue units, hospitals and hospital teams, local and state police, and the DOE Emergency Operating Center	√		Provide facilities and staff resources	Offsite Emergency Operations Center	√		

Appendix G
Community Comments and Concerns

On April 10, 2007, Richard Spence, DOE, advised that DOE had approved the Draft Nye County Public Safety Report as written, and that a letter to that effect would be forthcoming.

On May 7, 2007, the Nye County Nuclear Waste Repository Project Office (NWRPO) received a letter from Mr. Allen B. Benson, Director, Office of External Affairs, Office of Civilian Radioactive Waste Management, DOE, which stated:

“The U.S. Department of Energy, Office of Civilian Radioactive Waste Management (OCRWM) personnel have reviewed the Draft Nye County Public Safety Report Phase I, dated October 2006, prepared under Cooperative Agreement DE-FC28-04RW12289. Based on the staff recommendations, OCRWM accepts the report as written. We understand you will be presenting this report to local communities and look forward to the final Public Safety Report that will incorporate community comments.”

Community outreach meetings were held during Town Advisory Board meetings at Amargosa Valley and Beatty (a combined meeting held in Amargosa Valley on April 24, 2007), Pahrump (June 12, 2007), and Tonopah (June 27, 2007), Nevada. During those meetings the following comments and concerns were received:

1. What effect would integration of public safety services have on the County's future County employee retirement? Would the County be required to fund additional retirement benefits at a later date?

Response: Any positions created as a result of integrating DOE and Nye County public safety services would be DOE funded, since they were created to meet DOE needs. Pension and other retirement benefits would be fully addressed at the time the agreements were created.

2. What effect would the development of the Repository have on schools?

Response: The question falls outside the purview of this report, since schools are not normally considered to be part of our public safety services. Schools are an aspect which is being studied by the County, but the question is difficult to answer until the Repository is being constructed and we know better where the people involved may decide to settle.

3. Will union and other Repository contract workers be bussed to work from Las Vegas, or would they be required to reside in Nye County.

Response: While the question falls outside the purview of this report, the subject is under consideration. It is primarily a question which would have to be resolved between DOE, the DOE contractors, and the persons they hire. Nye County may address the question with DOE on the basis of convenience and cost effectiveness, but it is difficult to tell someone where they must reside. It may be more feasible for people to reside in Nye County due to the difference in housing costs as compared to Las Vegas.

4. What will happen to communities if nuclear waste material is transported via highway, since most of the roads go through the center of the towns?

Response: DOE has indicated the preferred method of transport will be by rail, which is currently under study. This report is primarily focused on the development of the Repository

and its public safety functions. Transportation of waste material has not been directly included because it will not commence until some years after construction efforts have begun, and there may be many changes in the meantime. However, integration of the public safety services will give Nye County direct input and involvement into transportation requirements and issues from a standpoint it may not otherwise have. While transportation and possible road development issues are currently being addressed, the topic will not be fully addressed until it is much closer to becoming a reality. Much of the issue will be decided when the rail corridor has been settled. In any event, the public safety issues will be fully explored before transportation begins.

5. What impact will Tonopah see as a result of development of the Repository, other than the possible transportation of waste material through/by the town?

Response: The Nye Regional Medical Center is a possible resource in the event of injuries at or near the Repository. In addition, it is a possible training location for County and Repository firefighters, since it has its own fire training building and sufficient water resources for training.

6. What impact will the integration of the DOE and Nye County fire and rescue services (creation of a Nye County professional service) for the Repository have on the community volunteer services?

Response: The volunteer services will still be needed in the communities and will continue to provide important, necessary services. However, under the integrated concept, if volunteers meet the requirements to be hired as an interim county firefighter or Emergency Medical Technician, they may be able to rotate through positions at the Repository station(s). This could gain them experience and possibly training that they would not otherwise receive. It would also allow a professional to rotate through a volunteer department, receive experience not available on the Repository, and possibly participate in training the volunteers. Properly handled, this would be a win-win for both the volunteers and the professionals. Repository fire and rescue personnel will receive steady training, but will probably have a very narrow range of experience due to the limited number of activities on the site. Boredom will be a factor and rotation between locations would help to keep personnel aware and active.

FIGURES



Figure 1
Map of Nye County

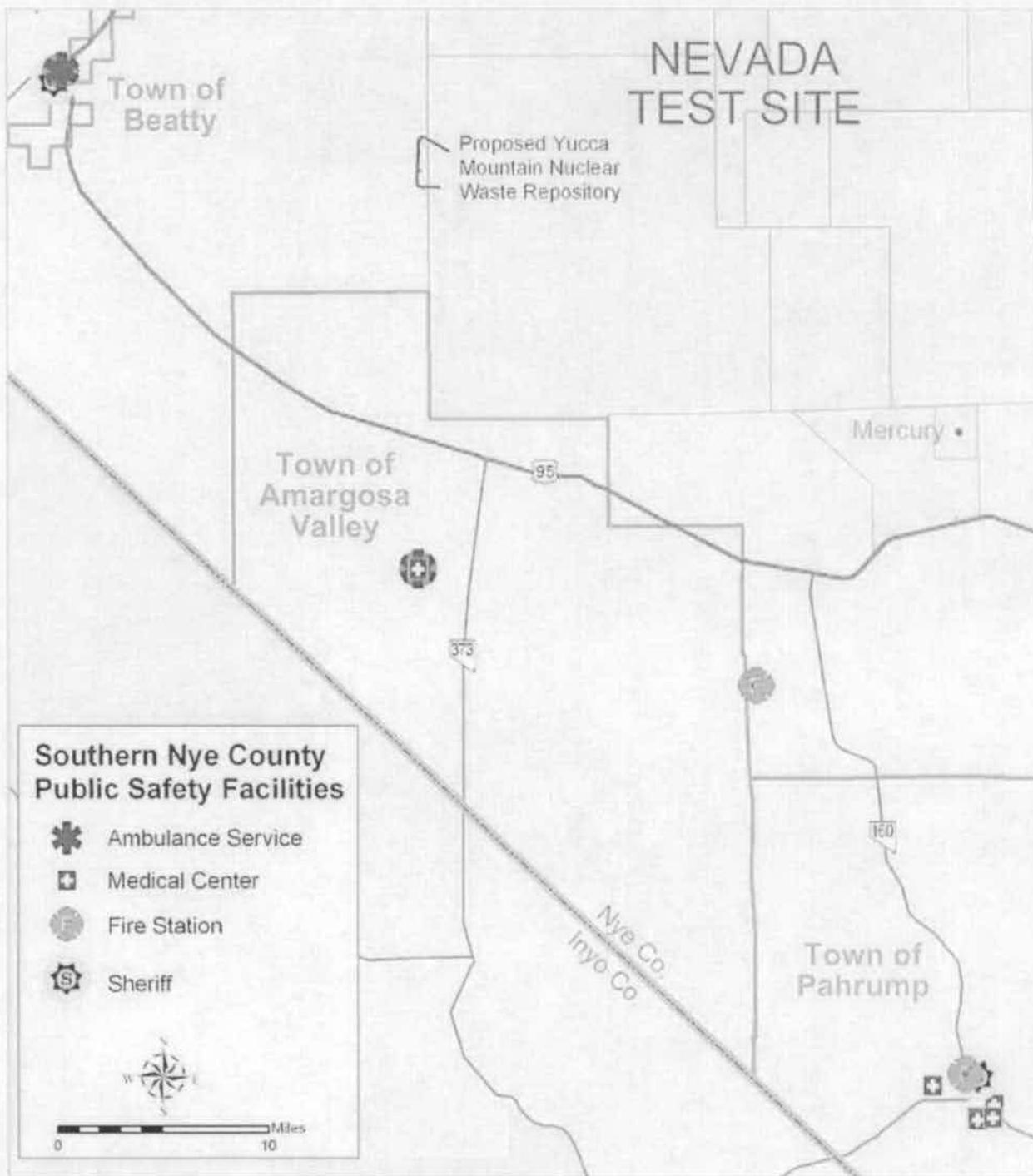


Figure 2
Locations of Nye County Public Safety Resources

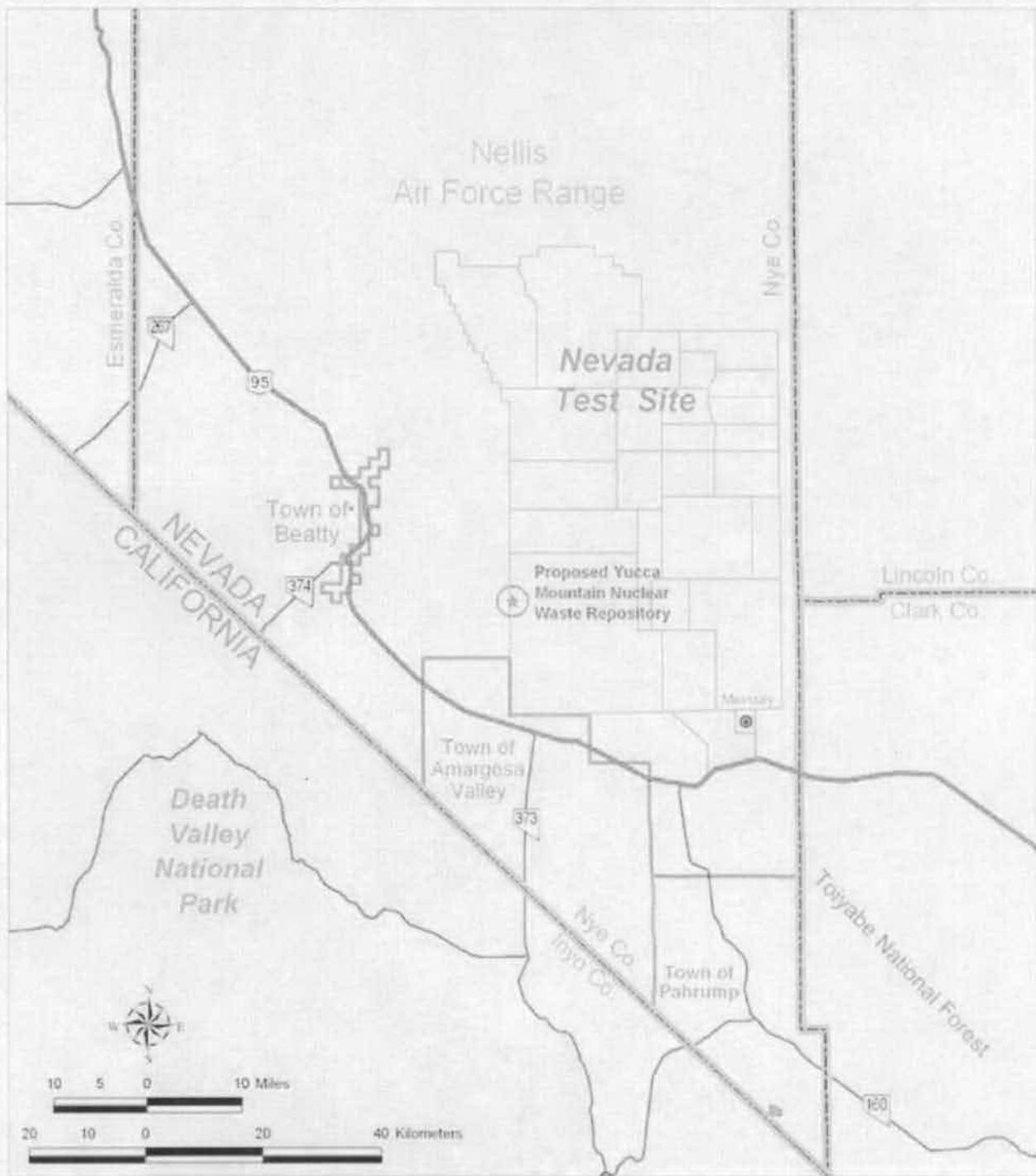


Figure 3
Overview of Project Site

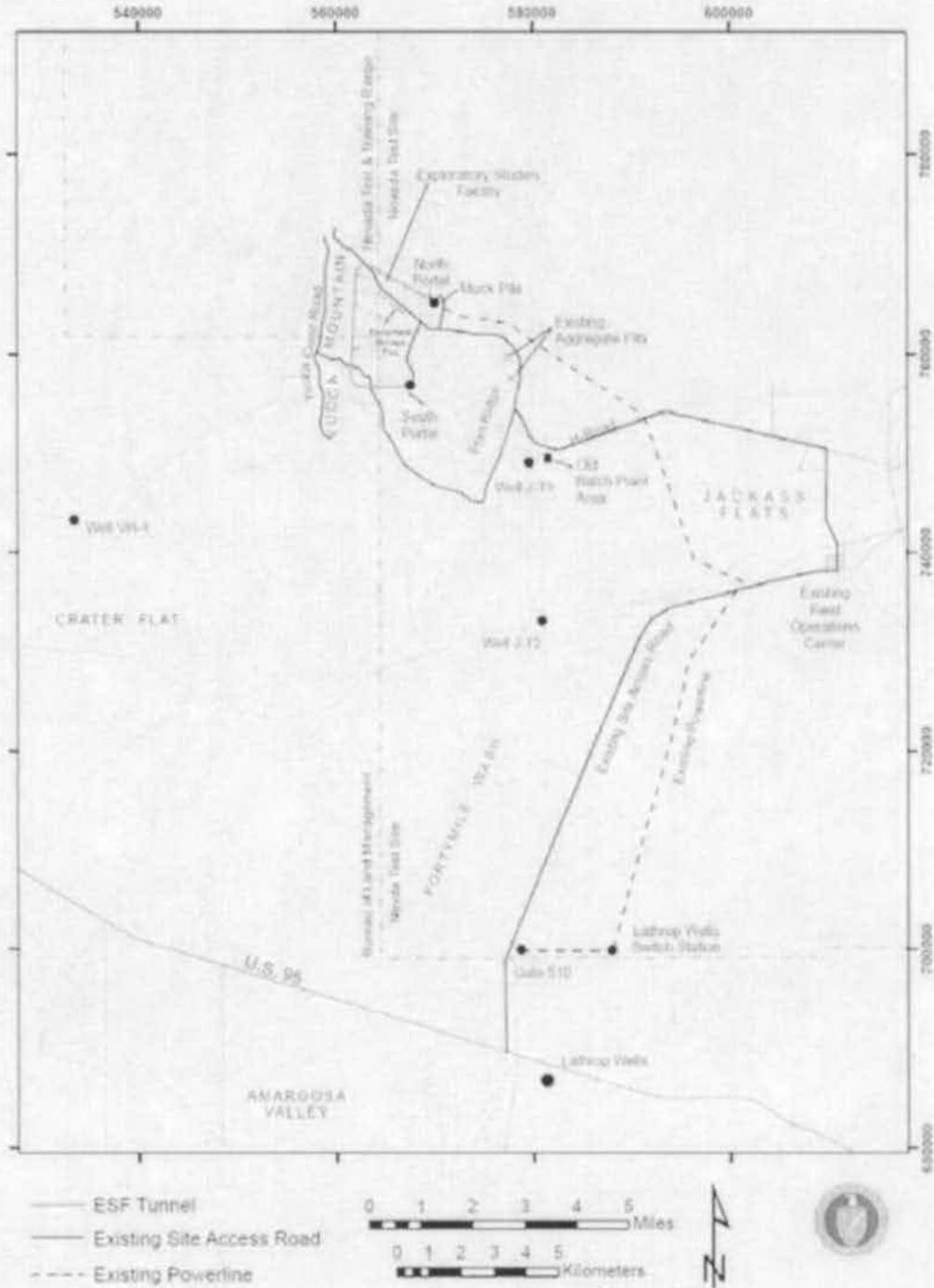


Figure 4
Repository Site Plan

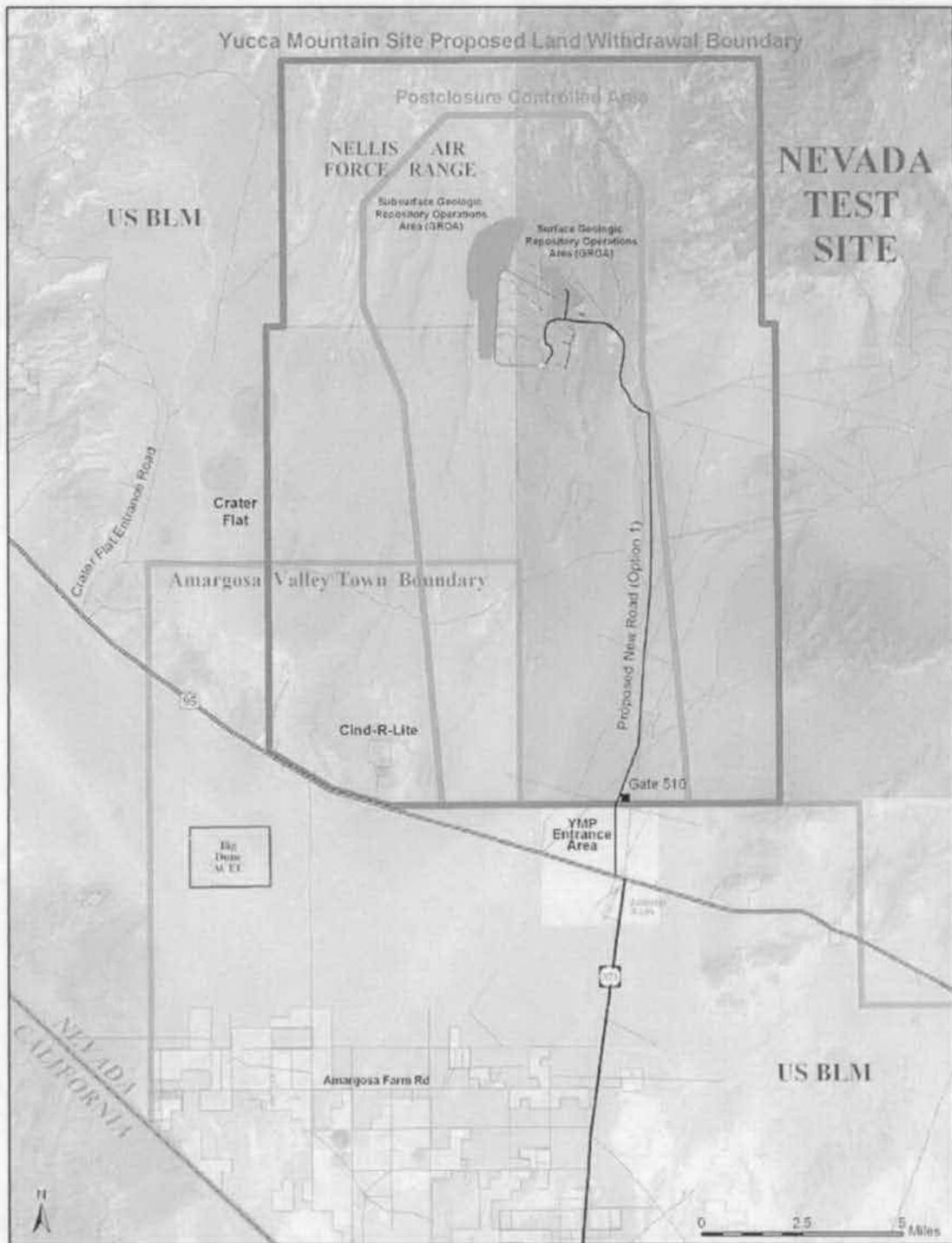
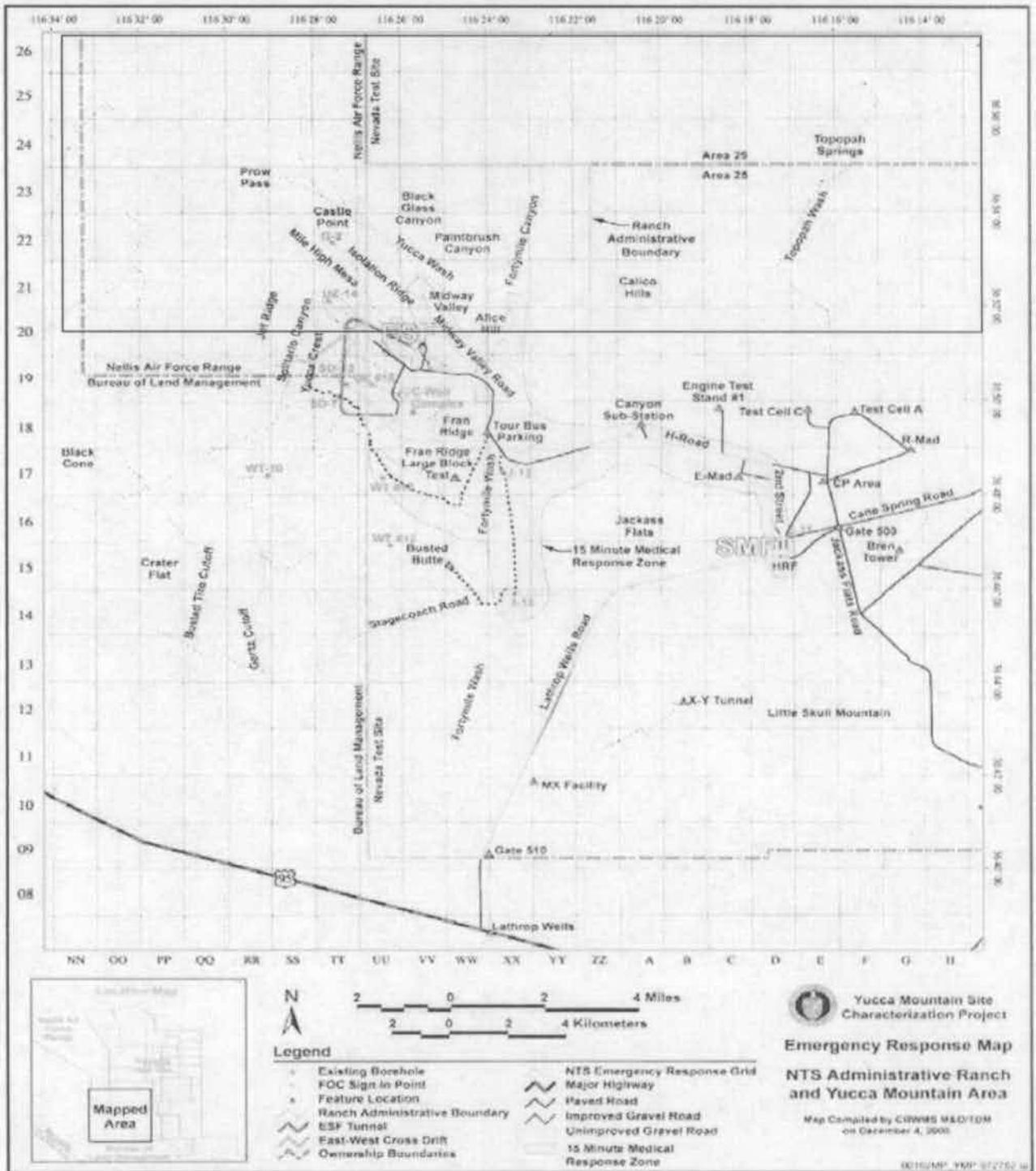
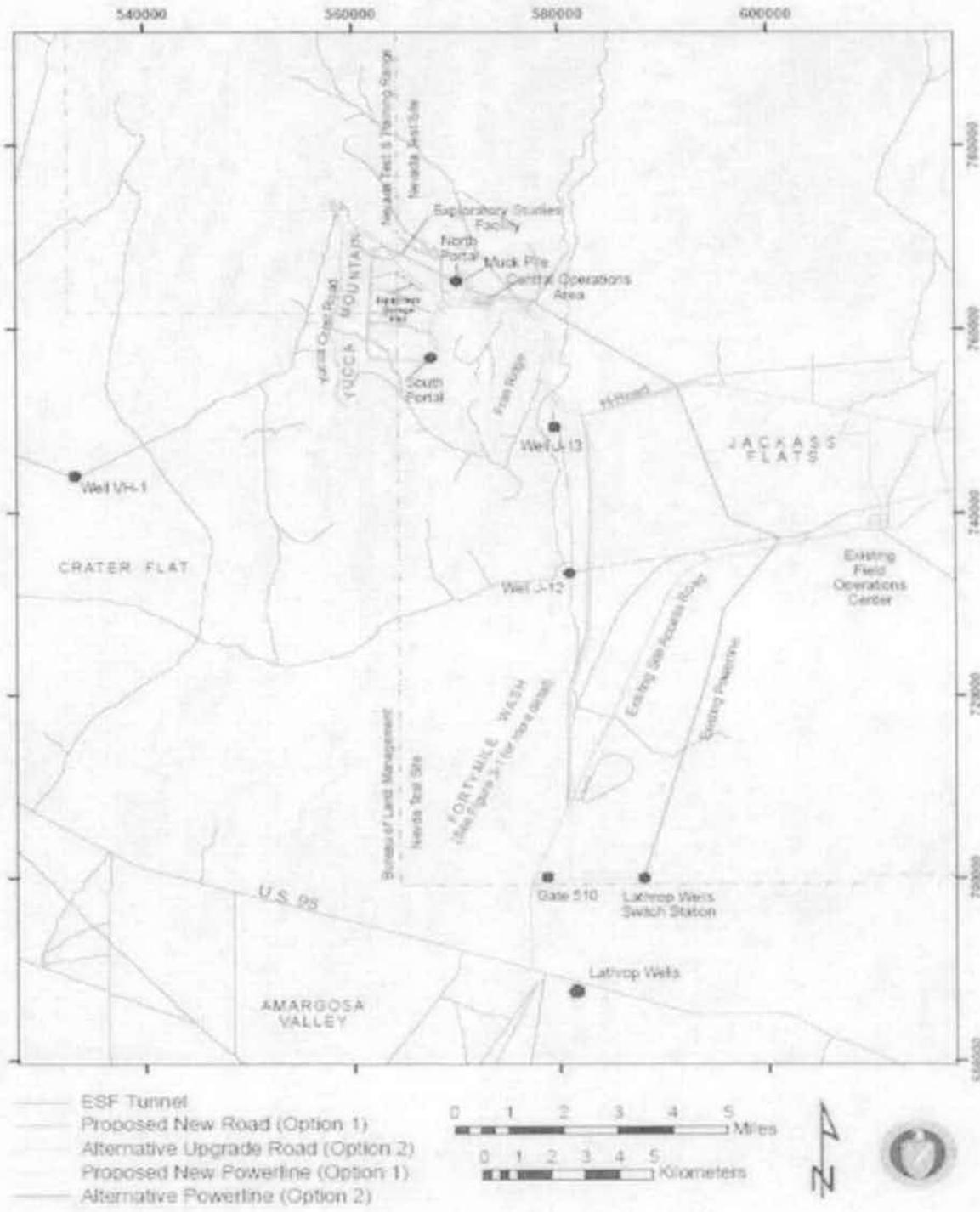


Figure 5
Area of Withdrawal for the Yucca Mountain Repository



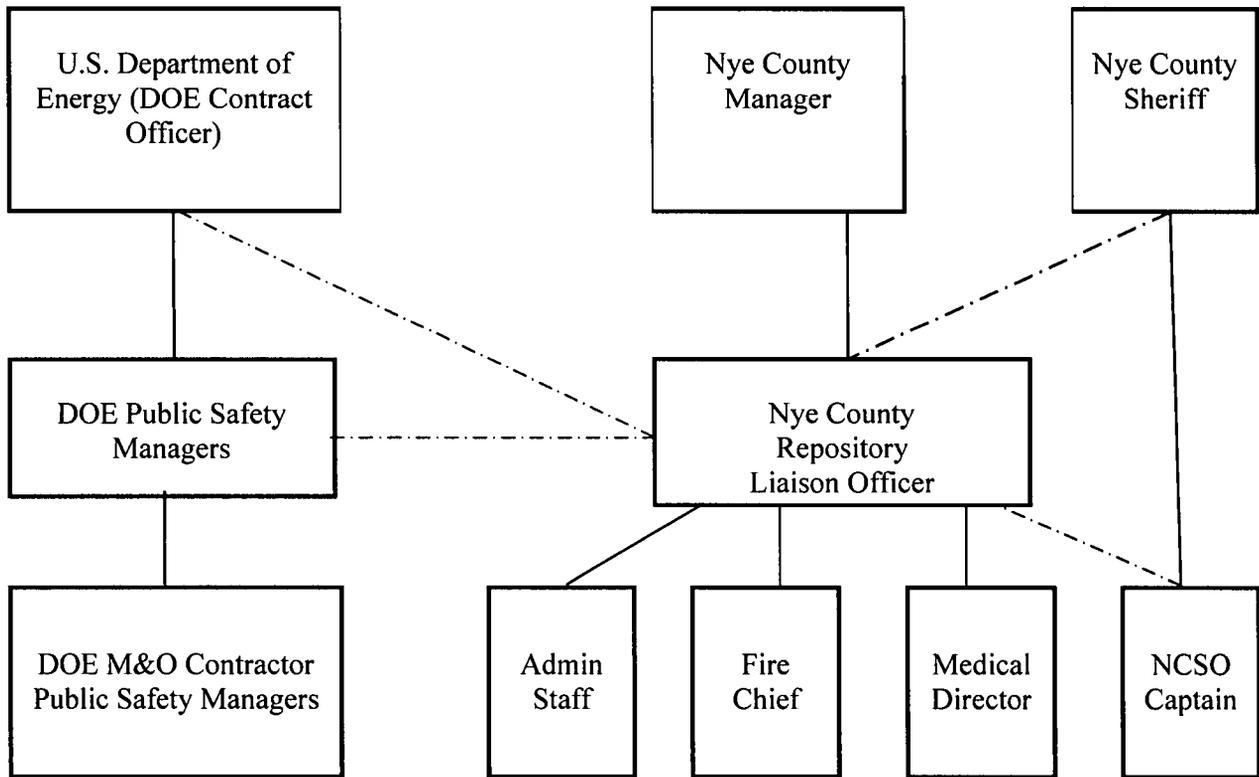
Source: DOE, 2000

Figure 6
Nevada Test Site Emergency Response Map



Source: DOE, 2006

Figure 7
Proposed Repository Road and Power line Infrastructure Changes



Supervisory relationship represented by solid line

Administrative/Liaison relationship represented by dashed line

Figure 8
 Organizational Chart of Possible Consultation and
 Cooperation Agreement Management Structure

TABLES

Table 1
Comparison of the Public Safety Capabilities and Benefits of Nye County versus the U.S. Department of Energy/Contractor

Activity	Nye County	DOE/Contractor	Comments/Conclusions
Site Security			
Emergency response	NCSO SWAT team	Contract team	NCSO knowledge of nuclear requirements limited. Contract cost probably higher. Seldom needed – team members can assist in patrol or other functions when not required for emergency response or training. NCSO SWAT personnel would have greater knowledge of and coordination with offsite assistance personnel. NCSO law enforcement authority is not as limited as a contractor would be.
Patrol	NCSO deputies	Contract team	NCSO can pursue and detain without jurisdictional involvement questions. Contract team has limited jurisdiction and authority. NCSO knowledge of nuclear requirements limited.
Sensor monitoring	NCSO unsworn personnel	Contract team	Contractor may have greater access to trained, experienced personnel. Nye County would have to locate and hire personnel, possibly at a lower pay rate.
Gate guards	NCSO deputies and unsworn personnel	Contract team	NCSO unsworn guards backed by sworn deputies. Steady work at same location/job leads to boredom and less effective observation. NCSO personnel may have a greater number of positions to rotate through over period of time, resulting in less boredom and greater involvement in the operation.
Administrative security (i.e., background investigations and badges)	NCSO unsworn personnel	Contract personnel	NCSO, although less experienced in specific DOE requirements, are experienced in similar requirements and operations. NCSO personnel possibly less costly.
Site law enforcement	NCSO sworn deputies	Contract personnel	Contractor has limited arrest capabilities. No limit to NCSO deputies' authority, who should have greater law enforcement training and experience.
Overall			NCSO personnel primarily responsible to Nye County Sheriff, secondarily to DOE. Contractor security personnel primarily responsible to DOE.

Table 1
Comparison of the Public Safety Capabilities and Benefits of Nye County versus the U.S. Department of Energy/Contractor

Activity	Nye County	DOE/Contractor	Comments/Conclusions
Safety and Health			
<i>Fire and Rescue</i>			
Emergency medical services	Could expand currently available facilities or build new facilities.	Would have to arrange for all personnel, equipment, and facilities to be brought in.	Nye County has some facilities already available - less expense to add since basic unit/function is already in place and personnel are familiar with area. Nye County would have to hire additional trained personnel.
Fire protection and suppression for areas immediately adjacent to site.	Already in place. Would have to expand as site expands.	Would have to arrange for everything to be brought in.	Nye County would initially only have to hire additional trained personnel.
Onsite fire protection			Both would have to bring in personnel and equipment. Nye County would expand from current facilities.
<i>Radiological Monitoring</i>			
Airborne, surface, and underground monitoring	.Could expand current Nye County program.	Would require setting up and supplying new program with personnel and equipment.	Nye County has established a scientific program in support of environmental monitoring of the groundwater medium – expansion for other media would only require expansion from an existing program.
Determination of methods of mitigating accidental release of radioactive material	Would tie into above monitoring function	Would require setting up and supplying new program with personnel and equipment.	Expansion of Nye County's scientific program in support of environmental monitoring to include determination of methods of mitigating accidental releases would have a major impact for public relations in the local and state areas. This would be reinforced by knowledge of Nye County's pre-planning for involvement in any transportation accidents involving radioactive materials. Contractor possibly more experienced.
Radiological exposure monitoring of site personnel	Would require expansion of current activities, an onsite office, and a contract with a laboratory to read badges.	Would require setting up and supplying new program with personnel and equipment.	Expanding the Nye County operation would be less expensive and have greater public acceptance, Contractor more experienced.

Table 1
Comparison of the Public Safety Capabilities and Benefits of Nye County versus the U.S. Department of Energy/Contractor

Activity	Nye County	DOE/Contractor	Comments/Conclusions
<i>Medical</i>			
Medical services for onsite contaminated and injured personnel.	Would require expansion and decontamination training of existing personnel and facilities.	Would require setting up and supplying new program with personnel and equipment.	Expansion of existing Nye County facilities and personnel/training could be accomplished over an extended period of time due to repository phasing, thus cutting immediate expense. Either solution requires construction and manning of facilities on site and contracting with private organizations.
Training in radiological emergency response for offsite emergency personnel		Would require setting up and supplying new program with personnel and equipment.	Essentially the same for either. Possibly greater acceptance and less expense if Nye County/DOE integrated training.
Transport of personnel to medical facilities for treatment beyond site facility capability			Essentially the same for either. Possibly better response times if dispatched by Nye County/DOE integrated dispatch service.
Care and treatment of site personnel for normal conditions and diseases	Would require expansion of existing facilities and personnel.	Would require setting up and supplying new program with personnel and equipment.	Overall treatment probably the same. Less expensive to expand current private facilities in county that to build complete new facility, and service as could expand with repository phases.
Maintenance of medical/exposure records for site personnel			Overall treatment probably the same, but it would be less expensive to expand current facilities in a phased approach than to build a new facility and service.
<i>Safety</i>			
Maintenance of safety training for site personnel			Essentially the same for either program.
Investigation of accidents to determine cause and prevention.			Essentially the same for either program.
Maintenance of safety records required by DOE, OSHA, or others.			Essentially the same for either program. However, a fully integrated Nye County/DOE function could provide one set of records rather than each organization maintaining its own for an overall savings.

Table 1
Comparison of the Public Safety Capabilities and Benefits of Nye County versus the U.S. Department of Energy/Contractor

Activity	Nye County	DOE/Contractor	Comments/Conclusions
Ensuring that utility service important to safety includes redundant systems to the extent necessary to maintain, with adequate capacity, the ability to perform their safety functions.			Essentially the same for either program.
Adequate emergency facilities and equipment to support onsite response.	Currently available facilities and equipment able to meet this requirement. Integrated facilities would provide this immediately and allow phased approach to reduce expense over time.	Would require new facilities and equipment.	Integrated approach with Nye County is already required in several aspects. Nye County would have to add trained personnel; DOE/Contractor would have to add personnel, equipment, and facilities.
Specification of methods, systems, and equipment for assessing and monitoring consequences to radiological emergency conditions.	To a large extent, this is already in place in the ISIP. Would require expansion of the program and possibly additional equipment and personnel.	Would require setting up new program plus equipment and personnel.	Expense to expand Nye County's existing program would be minimal, compared with setting up a new program. Public relations effect of integration would be beneficial.
Other Needs and Requirements			
<i>Communications</i>			
Arrange for requesting and effectively using off-site assistance through prompt communications	Integrated facilities would provide this immediately and allow a consistent phased approach, reducing expense.	Would require setting up program.	Integrated approach with Nye County already required in several aspects. Expense for required personnel and equipment, if integrated, could be phased over a period of time. Public relations effect of integrated activity would be beneficial.
Installation and maintenance of equipment to allow communications with local, state, and national agencies and headquarters.	Integrated facilities would provide this immediately, and allow consistent phased approach, which would reduce expense over time and require fewer personnel.	Would require setting up program with equipment and personnel.	Integrated approach would reduce personnel expense for both the DOE and Nye County, and increases could be done based on repository phasing.
Information to local, state, and tribal agencies concerning current activities and initiatives.			Essentially the same for either program Integrated approach would further enhance credibility.

Table 1
Comparison of the Public Safety Capabilities and Benefits of Nye County versus the U.S. Department of Energy/Contractor

Activity	Nye County	DOE/Contractor	Comments/Conclusions
Public Information Office activities.			Essentially the same for either program Integrated approach would further enhance credibility.
<i>Training</i>			
Training in radiological emergency response for offsite emergency response personnel.			Integrated facilities would reduce the amount of training required, since many of the personnel would already be involved through job rotation, and increase response capabilities.
Safety training for site personnel and contractors.			Essentially the same for either program. Integrated facilities would allow multiple uses of facilities and the lower expenses required for multiple, specialized facilities.
Job training and certification.			Essentially the same for either program.
Certification maintenance for workers and supervisors.			Essentially the same for either program.
Coordination of Communications			Would further emphasize and codify actions already undertaken by Nye County to ensure clear and complete communications between Nye County, DOE, DOE Contractors, and other federal, state, tribal, and local agencies.