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# Nye County

## Department of Natural Resources & Federal Facilities

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**Nye County, Nevada's Comments on the Yucca Mountain Preliminary Site Suitability Evaluation and the DOE Yucca Mountain Site Recommendation Hearing Process.**

Dear Ms. Hanlon:

I am enclosing with this letter Nye County's comments on the Department's Preliminary Site Suitability Evaluation (PSSE), as well as the Yucca Mountain Site Recommendation hearing process.

If you have any questions, please feel free to contact me at (775) 727-7727.

Very truly yours,  
NYE COUNTY, NEVADA

Les W. Bradshaw  
Department Manager

LB/js

Enclosures  
As stated

cc: BOC  
County Manager

**COMMENTS OF NYE COUNTY, NEVADA  
ON U.S.DEPARTMENT OF ENERGY  
YUCCA MOUNTAIN PRELIMINARY SITE SUITABILITY EVALUATION**

**Submitted by**

**Nye County Department of Natural Resources  
And Federal Facilities**

**Prepared for**

**U.S. Department of Energy**

Nye County, Nevada, submits the following comments on the U.S. Department of Energy's (Department) Preliminary Site Suitability Evaluation (PSSE) of the Yucca Mountain site in Nye County for development as a high-level nuclear waste repository. The comments are divided into two broad categories. First are comments of the amount of time afforded to Nye County and other interested units of government in Nevada, as well as the public to review and comment on the PSSE, and concerns related to the overall process the Department is following in reaching a determination on the suitability of Yucca Mountain and thus deciding whether or not to recommend its development as a repository to the President and Congress. Second are a series of technical and scientific concerns that Nye County continues to have with respect to the site itself, and the state of the Department's site characterization and repository design efforts to date.

Nye County also has very serious concerns about the short and long-term socioeconomic effects of locating a facility such as the Yucca Mountain repository within its borders. These concerns, and steps the County proposes that the Department and the nation take to recognize and deal with them, are set out in the Nye County Community Protection Plan (CPP). The CPP is attached to these comments and incorporated as though fully set forth herein. By these comments, and that incorporation, we ask formally that the Secretary support the actions set forth in that CPP, and include the CPP in any site recommendation report he submits to the President and Congress as "other information as the Secretary considers appropriate" under §114 (a)(1)(G) of the Nuclear Waste Policy Act (NWSA).

Nye County has always been, and remains, substantively neutral on the potential for the development of Yucca Mountain as a nuclear waste repository. The County has been given no choice to accept or reject the location of a nuclear waste repository within its borders. Aware of this, Nye County has chosen, in carrying out its duty to protect its residents, to carry out an objective but aggressive oversight program. Over the period of site characterization Nye County, through its Nuclear Waste Repository Project Office, has reviewed and commented on or critiqued many studies and other documents produced by the Department, its contractors, and other federal agencies. Nye County has initiated its own Independent Scientific Investigations Program (ISIP) including the Early

Warning Drilling Program (EWDP), and has made the data and analyses from those programs available to all interested parties through its website (nyecounty.com), and has made many suggestions for improved or additional scientific work. The underlying principle for Nye has always been, if the repository is to be located in Nye County, how should the County assure the health and safety of its current and future residents, receive fair treatment in return for the imposition of this federal program, and achieve an attractive economic future. It is in this spirit that these comments are submitted.

### **PROCESS CONCERNS**

The principal sitting document, the PSSE, was not made available until August 21, 2001. The period of time allotted Nye County, and everyone else, to review that document and formulate intelligent and scientifically defensible comments before the originally scheduled hearings was woefully inadequate. Even after the Nye County hearings were postponed because of the tragic events of September 11, 2001, the time available remains highly compressed in view of the magnitude of this decision. And if it is inadequate for those of us who work on a daily basis in this program it is much more so for the members of the public, who the Department expects to review and assimilate the information in this document, and compare it to the extraordinarily complicated and confusing information in the Scientific & Engineering Report (SER) and Supplemental Science & Performance Analysis (SSPA) which support it. The original one-month period between the release of the PSSE on August 21 and the date on which comments were to close, September 20, was in our view so insufficient as to be preposterous. Thus while we certainly appreciate the extensions which the Secretary has granted, we remain unsatisfied with the amount of time the Department has set aside for public review and comment on this momentous decision.

The PSSE is not even required by the NWPA. It has no legal significance. But the Final Environmental Impact Statement (FEIS) is. It must accompany any site recommendation to the President and Congress, and the Department should have available to it the comments from all interested parties on that final document. But there is no FEIS, and the Department cannot say when one will be made available. Seeking comments now on site recommendation, regardless of the

schedule, without the benefit of a Final EIS, will inevitably produce an incomplete record, and can only serve to further erode public confidence in the entire siting process.

The absence of a Final EIS is not the only flaw in the timing of this process. Any siting decision must be based upon and apply the Department's own siting guidelines which are required by the NWPA, and must take into account and measure the suitability and licensability of the site against the Nuclear Regulatory Commission's (NRC) licensing regulations. But the guidelines and licensing regulations against which Yucca Mountain is evaluated in the PSSE do not yet exist. They are merely proposed guidelines, and proposed regulations. The currently existing and effective guidelines and regulations are ignored in the PSSE, because the Department assumes that the new, proposed ones will be adopted. That is putting the cart before the horse. The affected parties, from Nye County and the State of Nevada to the affected members of the public, are entitled to know with absolute certainty what yardsticks will be used to measure the suitability of Yucca Mountain to host a repository, and to tailor their comments, if they so choose, to the validity of any proposed or potential decision under the final effective guidelines and regulations. That is not yet the case, and to expect Nye County, other interested governmental entities, and the public, to react to a potential siting determination when the substance of these absolutely essential regulatory measures is not yet certain is entirely unreasonable.

## **TECHNICAL CONCERNS**

### LIMITED ANALYSIS OF NATURAL BARRIERS

The PSSE, like the latest version of the Total System Performance Analysis (TSPA), places a great deal of emphasis on the analysis and potential benefits of the waste package and drip shield barriers and comparatively little on the analysis and potential benefits of natural barriers. Although preliminary results regarding the waste package and drip shield are promising, we do not as yet have sufficient data over a sufficiently long time period to confirm or deny the ultimate efficacy of the waste

package and drip shield. This is recognized in the PSSE at the top of p. xxix:

"The most important residual uncertainty in the TSPA analyses may be in projecting the long-term performance of engineered barriers using data derived from short-term (multi-year) laboratory tests."

On that same page the Department lists the five largest contributors to uncertainty, which together account for nearly two-thirds of the total variance in annual doses. The four most significant factors cited deal with uncertainties regarding the stress state and/or corrosion rate near welds on the waste package; it is only in the fifth factor (uncertainty in the flux in the saturated zone) that the natural barrier system enters in. The Department has not evaluated the effects of the natural barrier system as completely as those of the engineered barrier, so it is not clear what the impact would be if the waste packages are not effective.

#### REGIONAL GROUNDWATER/AGRICULTURAL USAGE

The SER (p. 4-363) states that 15 to 25 farms in Amargosa Valley would use an average of 2,000 acre feet per year, with a range of 887 to 3,367 acre feet per year. In evaluating the groundwater usage by a hypothetical farming community of 100 persons and 15 to 20 individual farms, the Department's investigators have used a convoluted approach that has no basis in reality. Rather than use simple assumptions concerning the irrigated acreages and irrigation rates, the investigators used a statistical historic water use approach in the basin and generated water use rates that are far too small. For example, the Department's approach produced the following results:

Number of farms	Expected Use (Acre-feet per year)	Range (Acre-feet per year)
15	1,454	887 – 2,020
20	1,938	1,183 – 2,694
25	2,423	1,479 – 3,367

Under this analysis, the average farm size is only about 20 acres, and ranges from 12 to 27 acres per farm (based upon an application rate of 5 feet of water per acre, the norm in southern Nevada). A farmer in Nevada cannot make a living on a 12, 20, or 27-acre farm unless the farm product is a high value crop such as garlic, pistachios, or grapes. In reality, the farmers in Amargosa Valley grow forage crops to support the local dairy industry, for export out-of-state or out-of-country, or for beef production. As correctly noted in the AMR for this evaluation, most agriculture in the valley employs pivot center irrigators to grow forage crops, primarily alfalfa and sordan grass. If each farm has only one pivot center irrigator, an application rate of five feet of water per acre, and an average of 120 acres per irrigator, then the demand for water would be as follows:

Number of farms	Irrigated Acres (120 per farm)	Expected Use (Acre-feet per year)
15	1800	9,000
20	2400	12,000
25	3000	15,000

These values should be considered as minimum water demands for the hypothetical farming community, as some farms may have as many as 6 irrigators. Further, the analysis assumes by omission that only residences exist in the community, and no businesses, services, parks or recreational lands, churches, schools, etc. Since businesses, including restaurants, gas stations, and RV parks etc., already exist in the area of the hypothetical community; this assumption is of course incorrect.

The net result of this flawed analysis is an underestimation of water demands by the hypothetical farming community that are at least one full order of magnitude less than that which would actually be used by the community for agricultural, domestic, and quasi-municipal purposes.

#### REGIONAL GROUNDWATER CHARACTERIZATION/ THE MIXING PLUME

The PSSE still contains the assumption, inaccurate in Nye's judgment, that the radioactive plume will be mixed with the entire quantity of water pumped per year in Amargosa Valley ( PSSE pp. xxx, 3-12). This

assumption fails to recognize that the plume may be concentrated into one or more farms or small locales, or that flow barriers of the type demonstrated by the Nye County EWDP wells may channel flow into very narrow paths. A similar problem could occur in the Calico Hills, where it is assumed that fewer fractures would further slow radionuclide movement ( PSSE p. 3-103) when it may in fact channel it.

### CARBONATE AQUIFER CHARACTERIZATION

The carbonate aquifer has not been properly characterized. The PSSE notes that potentiometric levels in the carbonate aquifer at one location (UE-25#p1) near Yucca Mountain are higher than the levels in the lower volcanic aquifer. The presence of upward gradients in the volcanic aquifers in other wells is also noted. To reach any conclusions based on a single data point is non-conservative, to say the least; nonetheless a conclusion is reached:

*"From these discussions of the unsaturated zone and the saturated zone, it is apparent that many properties of the hydrologic system at Yucca Mountain could be expected to contribute as hydrologic barriers to the transport of radionuclides from Yucca Mountain to a potential receptor including:*

...

- *Vertical gradients between the carbonate aquifer and the volcanic aquifer that would tend to produce upward flow from the carbonate aquifer, thereby restricting potential radionuclide transport and contamination to the volcanic and valley-fill aquifers." (PSSE p. 3-113)*

### THERMAL EFFECTS

The measurement, modeling, and analysis of thermal effects are flawed. There is still no adequate overall understanding of thermal effects on the operation of the repository. This is dramatically shown in the Department's own presentations on and explanations of tests underlying some of the conclusions drawn in the PSSE.

At the September 2001 Nuclear Waste Technical Review Board (NWTRB) meeting, during a presentation by a Department representative on the drift scale heater test, the statement was made that a simulation was "in good agreement" with the observed data. A member of the NWTRB challenged that statement by asking what would happen if you extrapolated those matches to 1000's of years. The [incorrect] answer was that the match had a mean error of about 2°C, compared to temperature measurement errors of perhaps 1°C, so that the match was good. This answer indicates the Department's responsible scientists may not understand that the shape of the measured temperature response and the model response diverged substantially, and would diverge even more at greater times. Measurement errors are irrelevant to this larger problem of missing the shape of the response curves.

The confusion was compounded when another Department representative interjected that the drift scale heater test is an accelerated test, compressing 100's of years of future performance into about 40 months. That argument is also invalid, because heat flow has not been dimensionally scaled. It is physically impossible to scale temperature effects in the manner stated. Perhaps the temperature level reached in the test was that expected to be reached hundreds of years from now, but the process and the time scale involved have not been scaled, nor could they have been. Thermal conduction pulses move at a speed dependent on the thermal diffusivity, which was not changed during the test, so that time was not scaled. Convective and radiative flux, each has different relevant time constants. With three heat flow processes operative, it is not possible to dimensionally scale such a test.

These tests should be continued, but will require a much longer time to reach reasonably dependable results on the repository time scale.

#### WASTE PACKAGE WATER CHEMISTRY

The corrosion testing program has relied extensively on the presence of beneficial anions in the aqueous solutions contacting the waste package. For example, all of the "simulated" solutions used for corrosion testing

contain elevated concentrations of nitrate. The PSSE describes the test program, in part, e.g. as follows:

*"These test environments all contain realistic concentrations of one or more beneficial buffer ions (nitrate, sulfate, carbonate, and silicate) which are expected to be always present along with chloride ions in the solutions contacting the waste package surface." PSSE p. 3-189*

Because of physical and biological separation processes that will be active in the subsurface at Yucca Mountain these beneficial ions are not likely to be present at all times in the waters contacting waste packages. Failure by to fully test in waters lacking these beneficial ions could result in a delay in the licensing process and/or in inadequate materials choices.

#### Nitrate and Biological Activity

Nitrate is assumed to be present in all the simulated Yucca Mountain waters in the Long-Term Corrosion Test Facility. The presence of nitrate is based upon current measured nitrate concentrations in ground water and pore water samples. Simple extrapolation of nitrate concentrations into the future is problematic because of its large role as a major and frequently limiting nutrient for plant growth. In many forests, lakes, rivers, and soil waters around the world nitrate is present at very low concentrations because it is frequently the major nutrient limiting plant and microbial growth. For example, many scientists have studied the chemistry of saline lakes leading to the "chemical divide" concept of brine evolution. Why do none of the saline lakes around the world have nitrate as a major ion? What will happen to the nitrate concentrations in infiltration if a slight change in climate increases plant growth at the surface? What if acid rain (a major source of the nitrate present in precipitation) is reduced? What would significant microbial activity in the repository do to nitrate concentrations near the microbial colonies? What if denitrification occurs in localized anaerobic pockets under a thick scale deposit on the container?

If all the Department's corrosion estimates are to rely on the universal presence of nitrate, these questions should be answered, probably before site recommendation but at the least before a license application is filed.

### Physical Separation of Corrosive and Beneficial Ions

The current model for the chemical evolution of waste package water has a conceptual error. The result of the error is that water dissolved species present are assumed not to physically separate. Assumptions of this importance should be demonstrated not assumed. Water contacting the waste package in the model is treated with a static stirred tank reactor paradigm, meaning that any ions that precipitate from solution as water evaporates can later dissolve back into the same solution when water is more plentiful (e.g., when relative humidity increases). In actuality water will frequently move dynamically through environments where net evaporation is occurring. Movement of water during evaporation leads to physical separation of dissolved species based upon relative solubility and kinetics.

A thought experiment can perhaps best demonstrate a likely situation. Water drips onto the surface of the drip shield from a fracture during a period of low relative humidity in the drift. The slow drip spreads out on the top and runs down the sides of the drip shield as it evaporates. The least soluble ions precipitate first and are left at the top. Moderately soluble ions precipitate in the next band farther from the drip location. Finally the most soluble ions precipitate in a final band; or perhaps run onto the drift floor. The drip was an initial transient phenomenon and dries up. The salts remain separated in their bands. Many years later the relative humidity in the repository rises and the salts begin to attract water – except now the chloride (and perhaps the fluoride) has been separated from the beneficial ions.

Temperature changes can also result in physical separation of dissolved species. Silica and sodium sulfate solubilities are very dependent on temperature. For example, temperature differences (generally below boiling) are used by the mining industry to separate sodium sulfate and sodium chloride from mixed solutions pumped from wells. Kinetics may also separate ions. Some mineral phases precipitate and dissolve slowly, while others react rapidly. Differences in kinetics can separate the dissolved species when water is flowing during the precipitation and/or dissolution steps.

In summary, as water moves through temperature and evaporation gradients physical separation of salts will occur.

## Other Corrosion Issues

### Galvanic Corrosion of Drip Shield

The SER, at p. 4-207, states that galvanic coupling of the titanium drip shield in combination with less corrosion resistant materials will be prevented by an Alloy 22 foot separating the drip shield from the carbon steel invert structure. Since Alloy 22 is a conductor of electricity the statement is not technically correct. All that would be required for galvanic corrosion is a continuous water film spanning from the drip shield across the foot into the carbon steel.

### Cladding Degradation Model

The cladding degradation model assumes that huge volumes of water (2,400 m<sup>3</sup>/waste package, SER, p. 4-268) – enough to fill an Olympic sized swimming pool! – are required prior to degradation. This model is neither realistic nor conservative. Only a film is required for aqueous corrosion, not a tank. Films are likely because changes in wetted areas tend to increase evaporation rates, making the exact balance of dripping and evaporating water likely. Salts are not consumed by zircaloy or steel corrosion, they are only complexed. Depending upon the dynamics of the system, complexed ions can be freed up, for example, when metal oxides precipitate from solution but not salts.

The major function of the assumption that huge volumes of water are required for cladding corrosion is to put a filter into the TSPA code that ensures that new releases can only begin when sufficient water is present to supply dilution. The cladding degradation model prevents waste exposure if salt film corrosion is the only form of corrosion present. Instead of, in essence, assuming that waste form exposure cannot occur, the analysis should more accurately consider the potential for waste exposure in this likely case of salt film corrosion.

### Location and Fate of Drips

An important but rarely discussed model assumption is the location of drips onto containers. The current TSPA model assumes that drip locations do not shift over time. Dripping always occurs onto the same containers. This is a very important assumption that appears to lack adequate justification.

Common sense would suggest that as stresses change over time from heating and cooling of the repository, local roof collapses, rock bolt corrosion, precipitation and dissolution of minerals, and other phenomena, the locations of the drips would shift, causing different containers to be subject to dripping and most containers to see drips during some time periods.

The current dripping assumption is not conservative, and at a minimum requires better justification.

#### Exact Balance of Water Inflow and Evaporation

The SER (p. 4-234, p. 4-267) states that highly corrosive salt films are only possible when there is an exact balance between water inflow and evaporation. While that statement is strictly correct, it is presented in a way that implies this would be a very rare circumstance. On the contrary, when drip rates are low there is a dynamic feedback between evaporation and drip rates. When dripping increases, relative to evaporation, the wetted area (and thus the evaporation rate) increases. The exact balance situation will be very common.

#### Percolation Rates and Dilution of Peak Dose

Throughout the TSPA models excess water percolating through the engineered barriers and higher relative humidities are assumed to be present.

Of the important processes for release of radionuclides, many (e.g. corrosion, spent fuel alteration) can occur in salt-water films without the presence of percolating (i.e. dripping) water. Corrosion processes occurring in salt films can result in concentrations of the high solubility radionuclides (technetium, iodine, neptunium) increasing over time. An ephemeral increase in percolation rates (e.g., from a climate change) leading to dripping on multiple containers and increases in diffusional mass transport could release the accumulated weathered out radionuclides in an impulse or spike release, leading to peak doses.

The above-described potential worst-case scenario, from the viewpoint of peak dose, is effectively removed from TSPA consideration by the continual overestimation of water percolation, relative humidity, unsaturated diffusion, and cladding reliability.

#### Treatment of Uncertainty

The treatment of uncertainty lacks a clear technical basis. Two problem areas are explained below. The "one off" analyses do nothing to address concerns of this type.

### "Conservative" Assumptions

Throughout the TSPA process individual investigators make many decisions concerning what is "conservative". A prime example is the continual assumption that more water moving through the mountain is conservative. Increasing the water flux has several effects, including dilution and time spreading of releases, thereby potentially decreasing peak dose. This is not a conservative result, of course.

The problem is that the uncertainty ranges and model assumptions in the PSSE and SER all contain a bias derived from what the personnel developing the sub-models believe to be conservative. When a mistake is made, non-conservative assumptions that were believed to be conservative are propagated throughout the calculations. The percolation and dilution comment above illustrates the point. The entire project seems to believe that more water is conservative. We suggest that may be a modeling artifact. Peak dose depends upon combinations of release history, transport, and dilution. When dilution is maximized and artificially tied to release (e.g., with the cladding model) the conditions for peak dose disappear. Presenting non-conservative assumptions as being conservative destroys public confidence in the scientific basis of the project.

### Uncertainty in Corrosion Rates

The database for C-22 corrosion is very limited. The current uncertainty distribution is based upon this limited information, using an empirical model rather than a statistical fit (e.g., a normal distribution) to the data. Since a limited corrosion database can provide only a limited circumscribed range of corrosion rates, the Department is in effect taking performance credit for an inadequate corrosion database.

### DRIP SHADOW

The drip shadow is still a hypothetical concept, which has not as yet been shown to apply. It is stated to be the "most important change in the understanding of unsaturated zone flow" (PSSE, p. 3-31), but it has not yet even been proven that a drip shadow will exist in practice. Accordingly, its inclusion in the PSSE is premature.

## REPOSITORY DESIGN/VENTILATION

Significant uncertainties surrounding certain aspects of the geology and hydrology at Yucca Mountain remain, especially how the repository will operate to isolate waste under high temperatures far into the future. In addition great uncertainties exist, as noted above, regarding waste package corrosion and degradation, and the consequent ability to meet the performance requirements of both the EPA Standards and the NRC licensing regulations. In view of these uncertainties, and the obvious need to keep water from contacting the waste packages for as long as possible, there should be a firm commitment to long-term natural ventilation to cool the repository and prevent moisture from contacting the waste packages. The PSSE contains no such commitment.

## **MISCELLANEOUS CONCERNS**

### TSPA Code Debugging

One method employed by the Department for debugging the TSPA code is by examining the code for errors when it produces unanticipated results. This is well understood to be the primary method for code debugging. The potential problem is that it also introduces a bias into the debugging process. What happens when the code erroneously produces anticipated results? No one looks for an error because none is suspected. It is not obvious that any steps have been taken to prevent this bias in all the TSPA support codes.

### TERRORISM

In view of the tragic events of September 11, 2001 the Department has an affirmative responsibility to reexamine this issue, and fully disclose its analysis (with proper regard for safeguards information) in the site recommendation documents.

# **NYE COUNTY, NEVADA COMMUNITY PROTECTION PLAN**

**Protections for the Site County  
(Its Residents, Communities, and Future)**

**In the Event That the Federal Government  
Decides to Transfer the Nation's  
Highly Radioactive Waste to Yucca Mountain**

Nye County Board of County Commissioners



Revised August 2001

## PHOTO CREDITS

- Page vii. *Yucca Mountain -- U.S. Department of Energy photo.*
- Page 7. *Conceptual model of the unsaturated zone flow at Yucca Mountain -- from U.S. Department of Energy Yucca Mountain Site Characterization Project Office (00003DC-M&Ographics/LVT/SPA-SR-23 Rev 1.ai)*
- Page 10. *U.S. Highway 95: a rural two-lane highway in Nye County -- photo taken by Bob Regan of the Nye County Nuclear Waste Repository Project Office (NWRPO).*
- Page 18. *A new community in southern Nye County -- photo taken by TerraSpectra Geomatics (10/26/00).*
- Page 19. *U.S. Highway 95 through Beatty, Nevada and U.S. Highway 95 through Goldfield, Nevada -- photos taken by Bob Regan (NWRPO).*
- Page 21. *Mercury, the main base camp, at the Nevada Test Site (NTS) -- U.S. Department of Energy photo (NF-2711). Fighters over the Nellis Air Force Range, northwest of Las Vegas -- from website daily.webshots.com.*
- Page 22. *Nye County Government Complex in Pahrump, Nevada -- photo taken by TerraSpectra Geomatics (10/26/00).*
- Page 25. *Yucca Mountain, the north portal area -- U.S. Department of Energy photo (BNN-9677-79). Pahrump Dairy in southern Nye County -- photo provided by Ed Goldhart of the Ponderosa Dairy.*
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- Page 33. *Yucca Flat testing area at the NTS -- U.S. Department of Energy photo.*
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- Page 41. *Nye County Emergency Services - Specialized Emergency Response Team vehicle -- photo taken by TerraSpectra Geomatics (10/26/00).*
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## EXECUTIVE SUMMARY

The federal government's proposals for Yucca Mountain involve the transfer of the nation's entire inventory of highly radioactive wastes to a single local community -- Nye County, Nevada. Nye County's Community Protection Plan has three broad purposes. First, it attempts to explain the perspective of the site county regarding this latest in a series of extraordinary federal impositions. Second, it describes the potential effects of the imposition from the site county's point of view, and the site county's understanding of its relationships with its state and federal governments. Third, it outlines in general terms what should be done to protect the site county, and the objectives of these protections.

Of 3,141 counties among the 50 states, Nye County is the single local jurisdiction selected by the federal government to receive the nation's entire inventory of highly radioactive commercial and defense wastes. No community wants to be singled out to accept this intensely unwanted material. Other states and regions have made strenuous and successful political efforts over two decades to avoid selection as a location for interim or permanent storage of highly radioactive wastes. Nye County also would clearly prefer a future without these wastes. Nye County does not want its future defined by its selection as the nation's single recipient of these materials. However, Nye County has not had, and does not now have, a choice to accept or reject this proposed federal imposition.

The DOE's proposed repository for highly radioactive wastes is one in a series of extraordinary federal impositions on a single rural county in central Nevada. Early in World War II, a portion of Nye County four times the size of the state of Rhode Island, was removed from the public domain for use as the Nellis Bombing and Gunnery Range. Early in the Cold War, a portion of this area— itself larger than the state of Rhode Island—was designated as the nation's site for nuclear weapons testing. Even very recently, in 1999, DOE designated portions of the Nevada Test Site (NTS) in Nye County as its preferred site for disposal of low-level radioactive wastes generated across the DOE defense complex.

The federal impositions in Nye County involve varying national interests. The Nevada Test Site served, and the Nellis Air Force Range (as it is now called) still serves, national security interests. The use of the NTS for low-level waste (LLW) disposal saves the federal treasury billions of dollars compared to other alternatives, and helps open defense sites elsewhere to more attractive

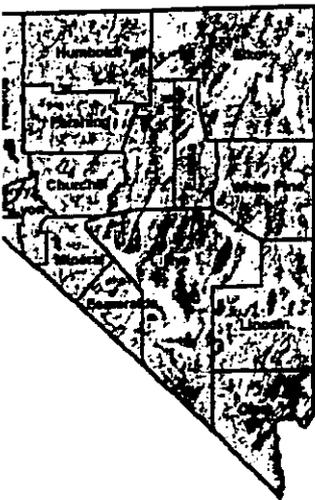
Yucca Mountain, located within Nye County, is the only site currently under consideration for the nation's first high level radioactive waste repository



Large portions of Nye County's lands have already been removed from the public domain for national security interests

The site county is not given the choice to accept or reject the nation's highly radioactive wastes.

Nye County's Community Protection Plan is addressed to several important audiences.



economic futures. The proposal to transfer the nation's highly radioactive waste to Yucca Mountain is the federal government's means to meet its responsibility to accept spent nuclear fuel from commercial nuclear utilities under circumstances in which no other site is politically acceptable.

Aware that it is not given the choice to accept to reject, Nye County must protect its residents and its future should it be the will of the federal government to transfer the nation's highly radioactive wastes to this single community. Over a prolonged site characterization period, Nye County has assessed and critiqued the studies conducted by federal agencies, initiated its own investigations of selected topics not fully addressed by others, and evaluated the implications of the potential imposition for the counties rapidly expanding population, its communities and environment, and its future. The underlying question has been, if the imposition is made, how might the site county assure the health and safety of its residents, equitable treatment in transportation, and an attractive non-radiological economic future.

This report summarizes the Nye County perspective on this extraordinary federal government imposition on the county and its future. It is addressed to several audiences:

- To Congress, which, if it decides to transfer the nation's highly radioactive wastes to a single rural county in Nevada, must also decide how to do so in a way that is right and proper within our federal system of government;
- To the DOE and the Executive Branch, who are responsible both for the management of activities undertaken at the general direction of Congress, and for advice regarding how general policy should be effectively and fairly implemented;
- To the nuclear utility industry, state utility commissions, and other state governments who may be interested in the perspectives of the single local jurisdiction to which their highly radioactive wastes may be transferred;
- To our own state government and our sister Nevada counties, with whom Nye County shares fundamental equity and safety concerns, but with whom Nye County wishes to share distinctive site county perspectives;

- To the citizens of 35 states from Maine to Florida, Minnesota, and California, whose concerns about the storage of highly radioactive wastes and the effects of such storage on the economic future of their communities could be resolved by transferring these wastes to another community -- a single rural county in central Nevada; and perhaps most important;
- To Nye County residents, who have lived with the prospect of designation as the repository site for the nation's high level radioactive waste for almost a generation—a period in which Nye County's resident population, communities and economy have changed dramatically. This report has been developed to provide a useful basis for continued discussion regarding how our local government should respond to this national issue.

This report updates Nye County's "Comprehensive Community Protection Plan," adopted by the Nye County Commission in February 1999. Nonetheless, its timing deserves brief discussion. Would it not be more appropriate for the site county to propose its protections only after the repository is finally sited—after the State of Nevada has had its opportunity to submit its notice of disapproval of the DOE recommendation, and after the Congress has overridden the State's objections? Does the site county's articulation of its proposed protections now, rather than later, imply that it does not share the concerns of the State of Nevada regarding the equity of the siting process, the safety of the repository design, the reliability of human organizations over 100 or more years of implementation, the cumulative impact of DOE and other federal activities in a single community, or the prospect that, once transferred, the national commitment for safe and equitable storage could be gradually withdrawn?

Nye County's answer to both large questions posed above is "no." Nye County does indeed share concerns about equity, safety, and federal government commitment. For this very reason, Nye County believes that its proposed protections should be clearly understood by all parties during, not after, the final siting decision. If the federal government decides to deal with the nation's highly radioactive wastes in another place and manner, Nye County will continue its interactions with the DOE and other federal agencies on numerous other issues. If, however, the decision is to transfer the nation's highly radioactive wastes to this community, the site county's proposed protections will come as no late surprise.

Community protections should be addressed before a decision to transfer high-level nuclear waste materials to Nye County is made.

Effects perceived by the site county differ from those addressed in the YMP EIS

The site county seeks high-level participation in the negotiation process

Three categories of protections are proposed:

Health, Safety and Environment

Transportation Mode-Route Selection

Community Economic Future

After an introduction, Section 2 addresses the effects of the federal government's program to transfer the nation's highly radioactive wastes to Nye County. The Yucca Mountain Environmental Impact Statement, released as a draft in July 1999, defines and then analyzes impacts in such a narrow and technical fashion that the most controversial and intensely unwanted federal project in memory is described as having negligible environmental or socioeconomic consequences. As site county, Nye County perceives effects not addressed as impacts in the EIS—effects involving equity, federal agency management over 70 to 100 years of prospective implementation, the cumulative effects of other federal impositions, the nature of the threats to crucial community resources such as groundwater, traditional DOE patterns of management of its activities in Nevada, and appropriate local control over its own destiny.

Some might ask why a single local jurisdiction would presume to negotiate with the federal government on a government-to-government basis, or how a local jurisdiction's concerns could legitimately be distinct from those of the state government of which it is part. Section 3 addresses these questions, and also describes the nature of the conditions to be negotiated.

Should the federal government decide to transfer the nation's highly radioactive wastes to its jurisdiction, the site county proposes specific policy and programmatic protections for its residents, its communities and environment, and its future (Section 4). Five proposed protections focus primarily on the health and safety of current and future county residents—protections which, to be meaningful, must involve varying but appropriate levels of local control in their implementation. Two protections address the transportation modes and routes to be used at the destination end of not just one but two large-scale, highly funneled nationwide campaigns for transfer of radioactive wastes for disposal in a single rural Nevada county. Two protections address the site county's desire for an attractive economic future separate and distinct from the past and prospective radiological impositions of federal agencies. As noted above, Nye County does not want a future defined by its selection as the nation's single recipient of highly radioactive wastes.

Interspersed with the text of this report is a series of figures describing the circumstances of the site county. By understanding these circumstances, the reader—particularly the non-Nye County

reader— may better appreciate the perspectives of the site county and the need for the proposed protections.

The proposed protections for the site county, should the federal government decide to transfer the nation's highly radioactive wastes to Yucca Mountain are listed on the next page.

### **Protections of Health, Safety, and the Environment**

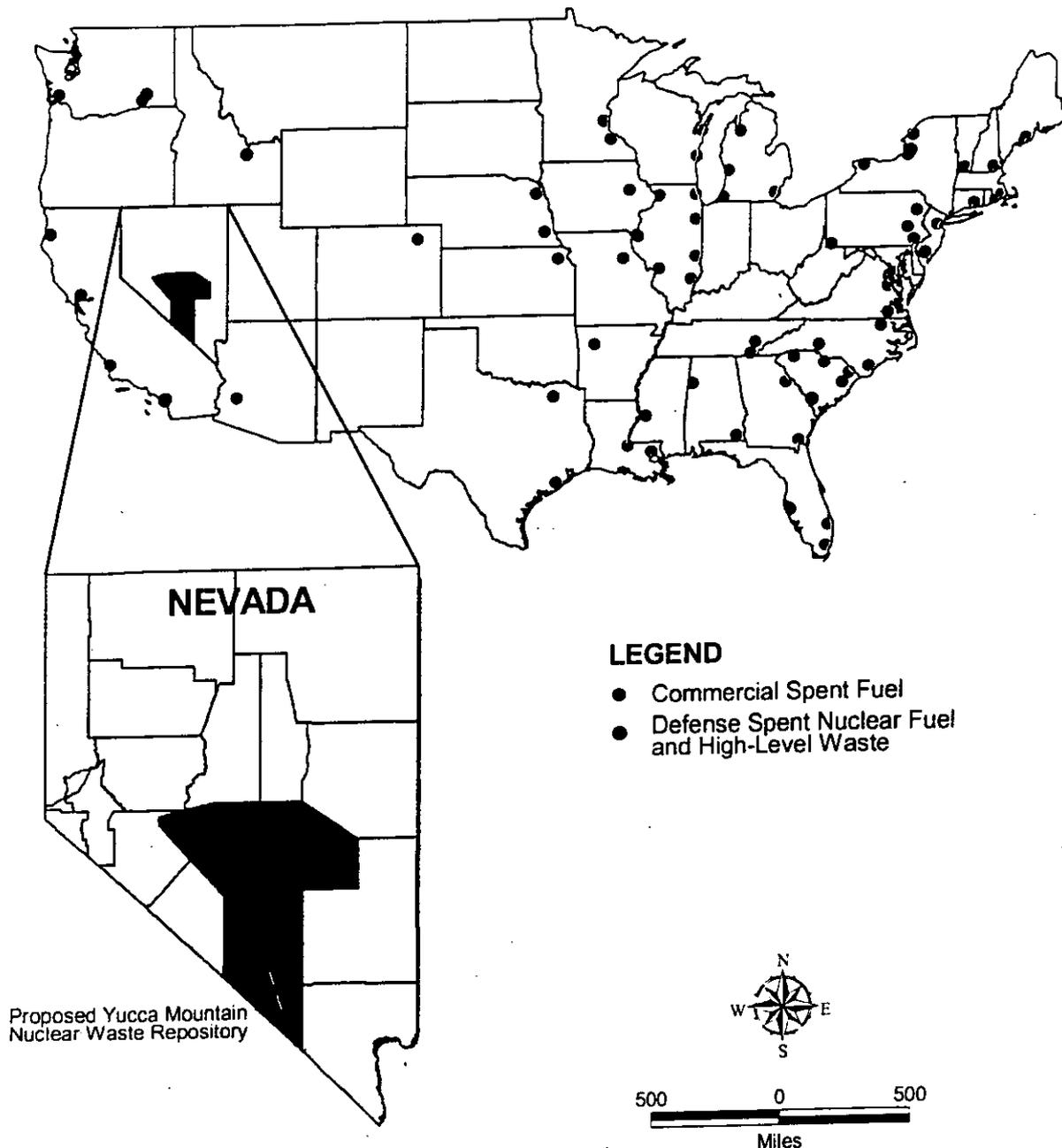
1. Ongoing institutional oversight of federal agency decisions—a role sufficient to enable the site county government to perform its duty to protect the health, safety, and welfare of its residents;
2. An expanded independent monitoring program—whose activities would be coordinated with but performed independently of those of DOE;
3. Monitoring radiological exposure and health in the site county—an ongoing program for workers and residents, conducted in the site county;
4. Full local capability for radiological emergency preparedness, response, and medical services;
5. A DOE center for radiological waste management research and development— located in the site county, with responsibility to find better ways to manage, treat or reuse highly radioactive wastes;

### **Protections in Transportation Mode - Route Selection**

6. Rail transport of highly radioactive wastes in the site county, on routes selected in consultation with the site county; no transport of highly radioactive waste on two-lane roads in the site county;
7. A comprehensive assessment and integrated plan for DOE's two large-scale, highly funneled radioactive waste shipment campaigns focused on a single destination county;

### **Protections of Community Economic Future**

8. Revision of traditional DOE management practices in Nevada – making the site county the future focus for DOE ancillary facilities, procurement, and community development;
9. Transfer of two percent of federal land in the site county as a resource for sustainable site county community development;
10. Federal designations to encourage investment in non-nuclear power, communications technology, and efficient utility systems.



1. Nye County and the Nation's Highly Radioactive Wastes. The DOE may recommend transfer of highly radioactive wastes from 75 commercial and five defense sites in 35 states to a single county in Nevada: Nye County. Transfer from commercial sites could satisfy a long-standing federal government obligation to nuclear utilities, reduce the costs of on-site storage for nuclear utilities and their rate-payers, and make possible the decommissioning of nuclear reactors and the economic reuse of reactor sites. Transfer from defense sites would reduce the costs of on-site storage for the federal government and enable these sites to shift their focus from stewardship of wastes to alternative economic futures. A single county in Nevada would receive the wastes intensely unwanted elsewhere.

## 1.0 INTRODUCTION

### The National and Local Context

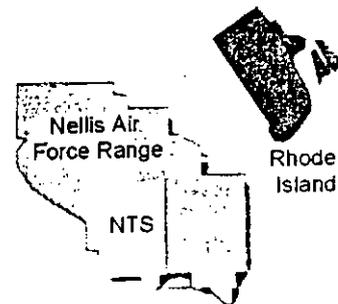
Of 3141 counties among the 50 states, Nye County is the single local jurisdiction selected by the federal government for transfer of the nation's entire inventory highly radioactive commercial and defense wastes. The projected inventory includes 105,000 metric tons of spent fuel from commercial nuclear reactors, 2,500 metric tons of spent fuel from defense reactors, and 50 metric tons of immobilized plutonium in 22,280 canisters.<sup>1</sup>

No community wants to be singled out to receive this intensely unwanted material. Other states and regions have made strenuous and successful political efforts over the past two decades to avoid selection as a location for interim or permanent storage of highly radioactive wastes. Nye County would also clearly prefer a future without these wastes. Nye County does not want its future defined by its selection as the nation's single recipient of these materials. However, Nye County has not had, and does not now have, a choice to accept or reject this proposed federal imposition.

The DOE's proposed repository for highly radioactive wastes is just one in a series of extraordinary federal impositions on a single rural county in central Nevada. Early in World War II, a portion of Nye County four times the size of the state of Rhode Island was removed from the public domain for use as the Nellis Bombing and Gunnery Range. Early in the Cold War, a portion of this area— itself larger than the state of Rhode Island—was designated as the nation's site for nuclear weapons testing. Over the subsequent 42 years,<sup>2</sup> 100 atmospheric and 828 underground nuclear weapons tests were conducted during the Cold War. Just last year, in 1999,

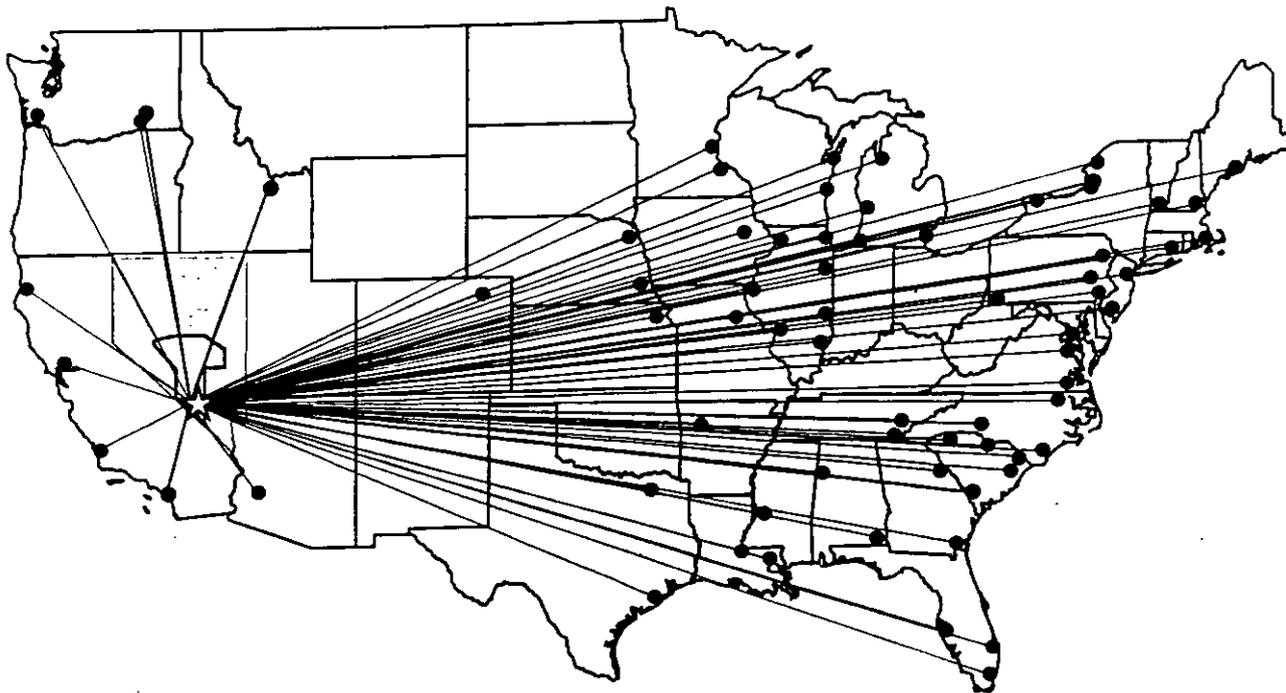


70,000 metric  
tons of  
radioactive  
spent fuel are  
planned for the  
first nuclear  
repository



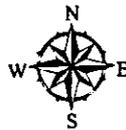
<sup>1</sup> "Draft Environmental Impact Statement for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada," USDOE/OCRWM (DOE/EIS-0250D), July 1999, pg. 1-24. Current legislation (NWSA Section 114 (d)), enacted in 1982, limits the first repository to 70,000 metric tons, but also assumed a second repository would be developed east of the Mississippi River. Proposed legislation would place the nation's entire inventory of highly radioactive wastes at Yucca Mountain. Additional wastes (e.g., "greater-than-class-C" and "special-performance-assessment" wastes) whose disposition has not yet been determined could also be designated for disposal at Yucca Mountain.

<sup>2</sup> See US Nuclear Tests: July 1945 through Sept 1992 (DOE/NV-209: Rev 14) pg. vii. Atmospheric tests at NTS began in January 1951 and continued through October 1958. Underground tests began in July 1957 and continued through September 1992.



### LEGEND

- Commercial Spent Fuel
- Defense Spent Nuclear Fuel and High-Level Waste



500 0 500 Miles

2. High-Level Waste Transfer: The DOE/OCRWM program intends to transfer the nation's entire inventory of highly radioactive wastes from 75 commercial and five defense sites to a single storage site at Yucca Mountain in Nye County. As of December 31, 1994, the radioactive content of this inventory was estimated to contain 28.4 billion curies - about 1,000 times the radioactivity released in nuclear weapons tests at the Nevada Test Site, and over 10,000 times the radioactivity of the transuranic wastes slated for disposal at the recently opened Waste Isolation Pilot Project near Carlsbad, New Mexico. Of the 28.4 billion curies, 93.7 percent was contained in 29,812 metric tons of commercial spent nuclear fuel. Before shipment, short-lived radiological elements such as Strontium-90, Cesium-137 and Curium-244 will decay, but elements such as Plutonium-239 and -242, Technitium-99 and Zirconium-93 have half-lives of 24,000 to 1 million years. The inventory to be transferred is expected to increase to 87,000 metric tons - a figure that could increase if commercial reactor licenses are renewed.

DOE designated portions of the Nevada Test Site (NTS) in Nye County as its preferred site for offsite disposal of low-level radioactive wastes generated at 23 sites in 13 states<sup>3</sup> in the nation's nuclear weapons complex. It may also use the Nevada Test Site and Nye County for its disposal of mixed low-level radioactive wastes.<sup>4</sup>

The federal impositions in Nye County involve varying national interests. The Nevada Test Site served, and the Nellis Testing and Training Range (as it is now called) still serves, national security interests. The use of the NTS for low-level waste disposal saves the federal treasury billions of dollars compared to other alternatives,<sup>5</sup> and helps open defense sites elsewhere to more attractive economic futures. The DOE proposal to transfer the nation's highly radioactive waste to Yucca Mountain is the federal government's means to meet its responsibility to accept spent nuclear fuel from commercial nuclear utilities under circumstances in which no other site is politically acceptable.

Aware that it is not given the choice to accept or reject, Nye County has maintained a neutral stance as to whether a geologic repository should or should not be located at Yucca Mountain. Over a prolonged site characterization period, Nye County's focus has been to evaluate and critique the studies conducted by federal agencies, to conduct its own investigations of selected topics not fully addressed by others, and to evaluate the implications of the potential imposition for the county's rapidly expanding current population, its communities and environment, and its future.

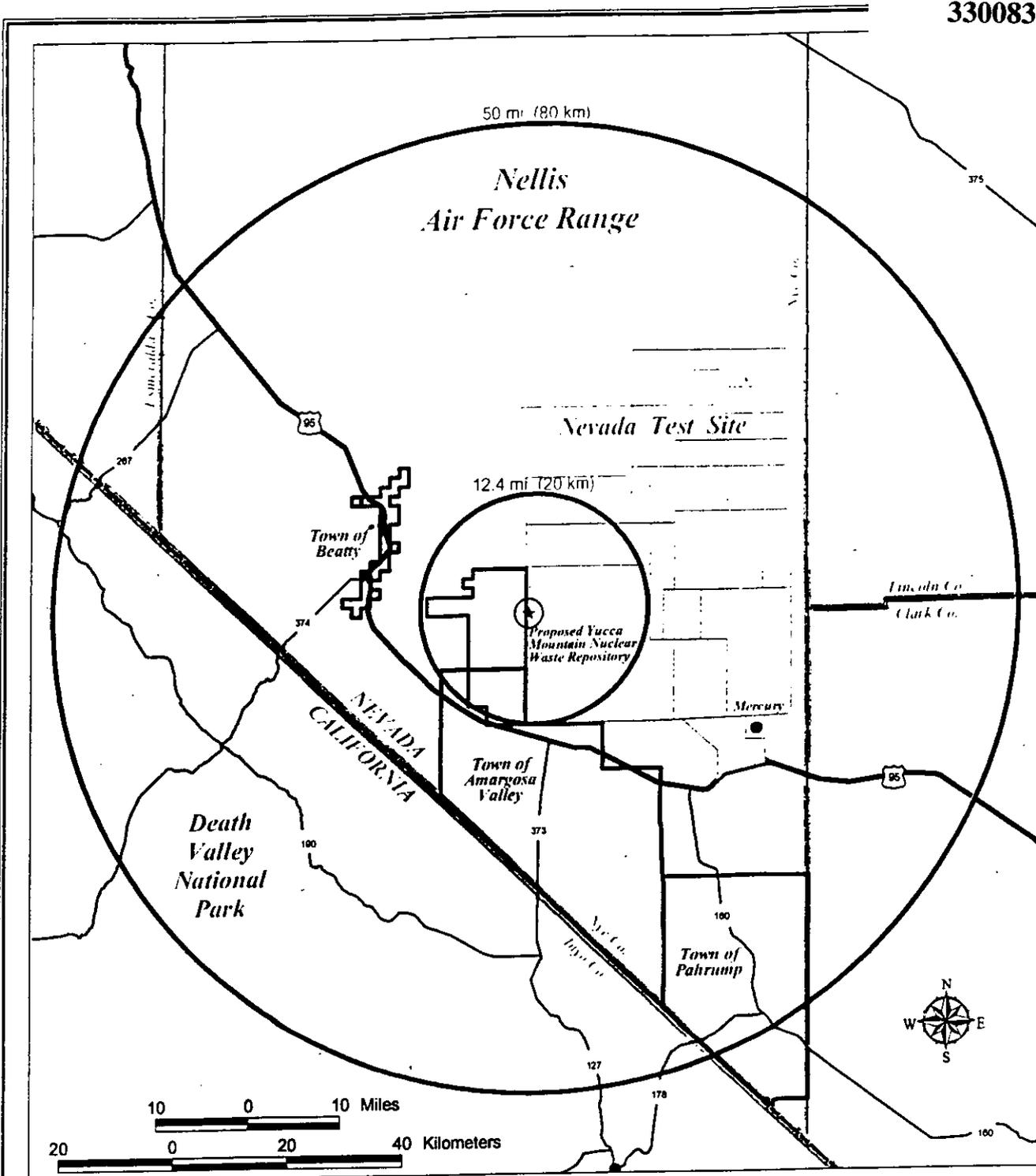
Nye is the site county for DOE nuclear weapons testing, low-level waste disposal, high-level waste transfer and the Air Force bombing range,

The site county is not given the choice to accept or reject federal impositions

<sup>3</sup> Based on "Life-Cycle Cost and Risk Analysis of Alternative Configurations for Shipping Low-Level Radioactive Wastes to the Nevada Test Site," Table 2.1, page 2.8 (DOE/CH/CRE-6-1999).

<sup>4</sup> Mixed low-level wastes, which include hazardous chemical residues as well as radioactive material, are subject to federal and state hazardous waste laws.

<sup>5</sup> "Benefits Accruing to the DOE Complex Attributable to the Disposal of Off-Site Radioactive Waste At the Nevada Test Site," E.J. Bentz & Associates, April 1999, pg. 5.



3. The Yucca Mountain Site in Local Context. U.S. Nuclear Regulatory Commission (NRC) regulations would require monitoring of population "at risk" within a 50 mile radiological assessment grid surrounding the Yucca Mountain site -- an area which includes the Nye County communities of Beatty, Amargosa Valley, and Pahrump, the DOE base camp at Mercury, and parts of adjacent Clark, Inyo, Esmeralda, and Lincoln Counties.

Repository performance standards would require that radiological exposure to people living at a distance of 20 kilometers should not exceed 15 millirems annually (as proposed by the U.S. Environmental Protection Agency) or 25 millirems annually (as proposed by the NRC) in any of the next 10,000 years.

## The Parties and Their Positions

The DOE is now preparing to recommend to the President and to Congress the implementation of a 70 to 100 year program to transfer the nation's most highly radioactive commercial and defense wastes to Yucca Mountain. These materials would be stored in perpetuity in a geologic repository constructed, operated, monitored, and decommissioned by the DOE. The Congress is considering measures that could affect the standards for containment of radioactivity at the repository, the possible development of a facility for centralized above-ground storage as well as geologic disposal at Yucca Mountain, and the schedule for transport of nuclear wastes across the country and into Nevada and the site county.

The State of Nevada, during both Democratic and Republican administrations, has expressed its adamant opposition to the siting of a repository at Yucca Mountain, and to the processes of Congress and the procedures of DOE in seeking to implement the project. The nuclear power industry and state utility commissions have forcefully advocated the federal government's obligation to relieve commercial nuclear utilities (and their ratepayers) of the obligation to safely store the spent nuclear fuel generated at 75 sites in 34 states.<sup>6</sup> Numerous corridor communities have been politically active in advocating their desires regarding the routing of shipments of high or low-level radioactive wastes—generally, that such shipments should avoid their jurisdictions. Environmental groups have expressed concerns about the standards for containment of wastes at the proposed repository, and their distrust of the proponent agency.

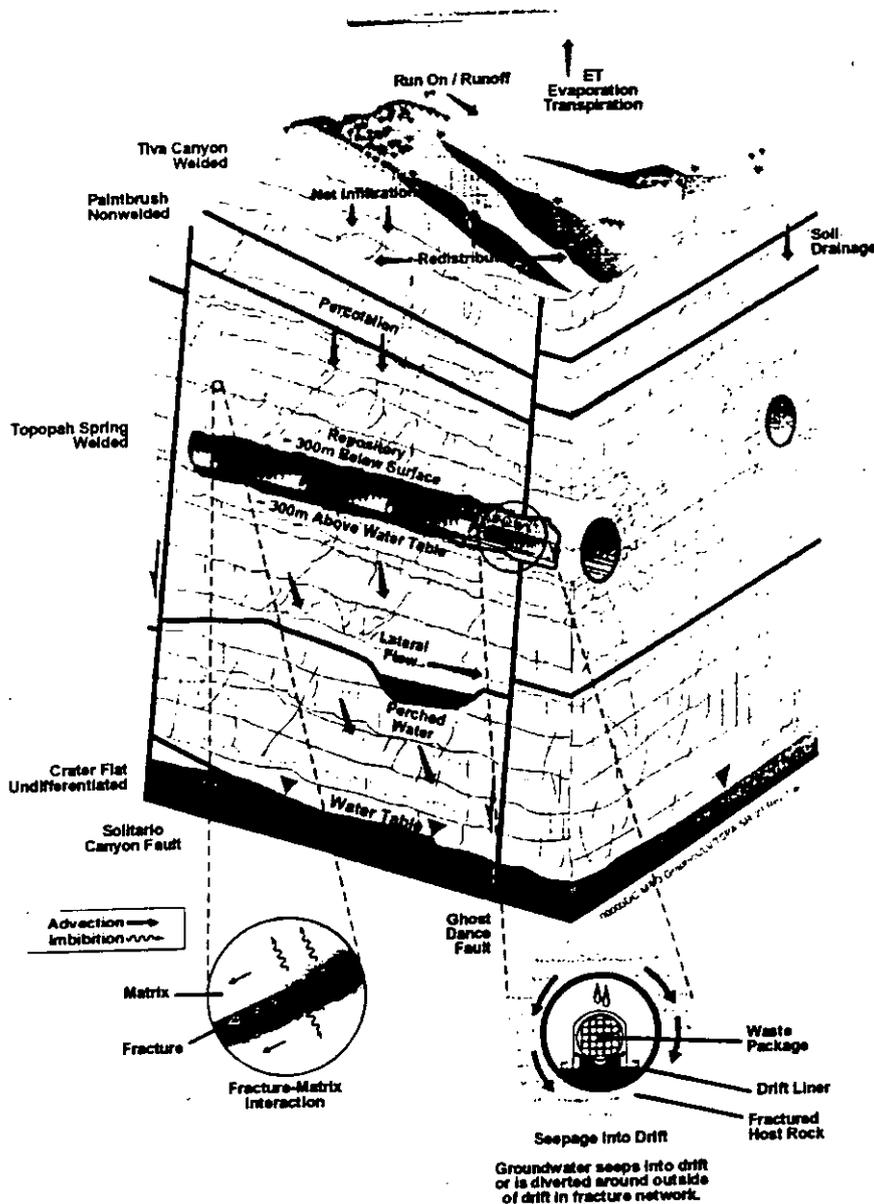
However, what will be the fate of the single local jurisdiction to which the nation's highly radioactive wastes would be transferred and stored in perpetuity? What protections—for the health, safety and welfare of current and future residents—are right and proper should the federal government make this extraordinary further imposition, in this case an imposition for the convenience of the federal government as agent for the nuclear power industry,

<sup>6</sup> A count of sites from which highly radioactive waste would be shipped to Yucca Mountain requires certain assumptions. In this report, the count of commercial sites excludes Shoreham in New York; Hope Creek and Salem (in New Jersey) are considered separate sites; Dresden and Morris (in Illinois) are considered a single site. To commercial sites, defense sites add five shipment origins (Hanford WA, Idaho National Environmental and Engineering Laboratory, West Valley NY, General Atomics CA), and one state (Idaho). The totals are 75 commercial sites in 34 states, or 80 commercial and defense sites in 35 states.

Federal agencies  
make policies  
whose effects  
are  
concentrated in  
Nye County

Other parties  
do not fully  
represent the  
site county

What will be the  
fate of the site  
county?



4. The Yucca Mountain Repository. Under the DOE's current proposal (Enhanced Design Alternative II), the nation's highly radioactive wastes would be transferred to Yucca Mountain over a period of 30 to 40 years. At Yucca Mountain, wastes would be removed from transport casks (rail or truck) and placed in 10,000 or more "waste packages" (each weighing roughly 94,000 pounds), for emplacement end-to-end in 35 miles or more of tunnels spread over 1,000 acres or more, 1,000 feet below the mountain's surface. Tunnel construction and emplacement would proceed for 20 years or more.

Over subsequent centuries and millennia, water from precipitation would seep through the highly fractured mountain towards the emplacement drifts - a process affected by the thermal heat of the spent nuclear fuel. Below the emplacement zone, water seeps towards increasingly saturated rock and an incompletely understood groundwater system, including its "fast pathways," in the general direction of the Nye County community of Amargosa Valley. The DOE's license application to NRC will rely primarily on "engineered barriers" (the waste packages, titanium drip shields covered with backfill) to delay the contamination of water due to its contact with long-lived radioactive wastes. The natural system at Yucca Mountain does not isolate wastes over the long-term. The site's natural characteristics do not uniquely suit it for isolation of highly radioactive wastes from the human environment.

rather than for the nation's security and defense? This brief report outlines Nye County's perspective on the nature of this unique project's potential effects in the host county, and the appropriate protections should the federal government decide to transfer the nation's highly radioactive wastes to this single local jurisdiction.

It is reemphasized, however, that Nye County, were it given the choice, would clearly prefer a future without the proposed repository—that is, a future without 87,000 or more metric tons of spent nuclear fuel and high-level defense wastes in interim or permanent storage at a location near its population center, adjacent to its major traffic artery, and up-gradient from communities sharing the same groundwater resources. While Nye County has been provided ample opportunity for "input," it is not given the choice to accept or reject the proposed federal imposition.

#### **The Report Topics: Effects, Rationale, Objectives, Protections**

Section 2 outlines the potential effects of the Yucca Mountain Project in the intended site county, and Section 3 discusses the underlying rationale for the proposed protections. Section 4 describes the three key objectives of the protections proposed by the site county facing the prospective transfer of the nation's inventory of highly radioactive commercial and defense wastes. In Section 5, the proposed protections themselves are briefly described. These protections could, if fully and faithfully implemented by the DOE and Congress, help make the intended further imposition compatible with the site county's emerging vision for its post-Cold War future.

The site county  
has not asked for  
and does not  
want this  
additional  
federal  
imposition

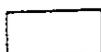


HLW PROGRAM ELEMENTS	TECHNICAL	POLITICAL (EQUITY)
1. Repository Design and Waste Emplacement	<p><i>EPA (Standards)</i></p> <p><i>NRC (Licensing)</i></p>	<p><i>Siting Process</i></p> <p><i>Site Selection</i></p>
2. Transport: Cross-Country and in Destination State	<p><i>NRC (Cask Certification)</i></p>	<p><i>Mode - Route Options</i></p> <p><i>Mode - Route Selection</i></p>
	<p><i>DOT (Routing)</i></p>	
3. DOE Program Organization and Management	<p><i>HQ vs. Nevada</i></p> <p><i>Within Nevada</i></p>	<p><i>Site County</i></p> <p><i>Economic Future</i></p>

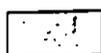
**KEY**



Site County Interest Addressed



Site County Interest Inadequately Addressed



Site County Interest Not Addressed

5. High-Level Waste Program Elements. The overall DOE program for managing the nation's highly radioactive wastes can be broken into three elements: 1) Repository design and waste emplacement, 2) Transportation, cross-country and in the destination state and site county, and 3) Program organization and management: e.g. workforce assignment, residency, procurement, community development, and federal program linkages. Each part has both technical and political (equity) aspects.

Site county interests are addressed in the technical aspects of Part 1 and in one technical aspect of Part 2. Site county interests are inadequately addressed, even in their technical aspects, by the mode-route planning and selection process regulated by the USDOT. In no other parts or aspects have site county interests been addressed by federal agencies. In no part or aspect does the site county have a formal role in decisions affecting its future as the single government entity most affected by this federal program.

The Protections Plan addresses the portions of the nation's high-level waste program shown in pink above -- aspects that have not yet been addressed by the federal government, but that must be addressed if the program is to be implemented in a way that can be viewed as right and proper in the United States system of government.

## 2.0 EFFECTS OF THE YUCCA MOUNTAIN PROJECT

The proposed Yucca Mountain Project (YMP) will have important effects on the site county as it exists today. But its major potential effects are on what Nye County could become—on the county's future.

This section discusses some of the effects of the YMP on the intended site county's present and its future. As indicated by Attachment A, most were not addressed in DOE's draft Environmental Impact Statement on the Yucca Mountain Project.

### 2.1 Transportation Concerns

In addition to the radiological exposure along 317 miles of two-lane rural highways connecting and bisecting destination county communities, transportation concerns include an unsatisfactory local capability to perform radiological emergency response and medical services. In addition, politicized federal decision processes could result in the use of modes and routes in the destination county inherently less safe than those used cross-country in two large-volume, highly funneled prospective DOE shipment campaigns. More specifically, transportation concerns include:

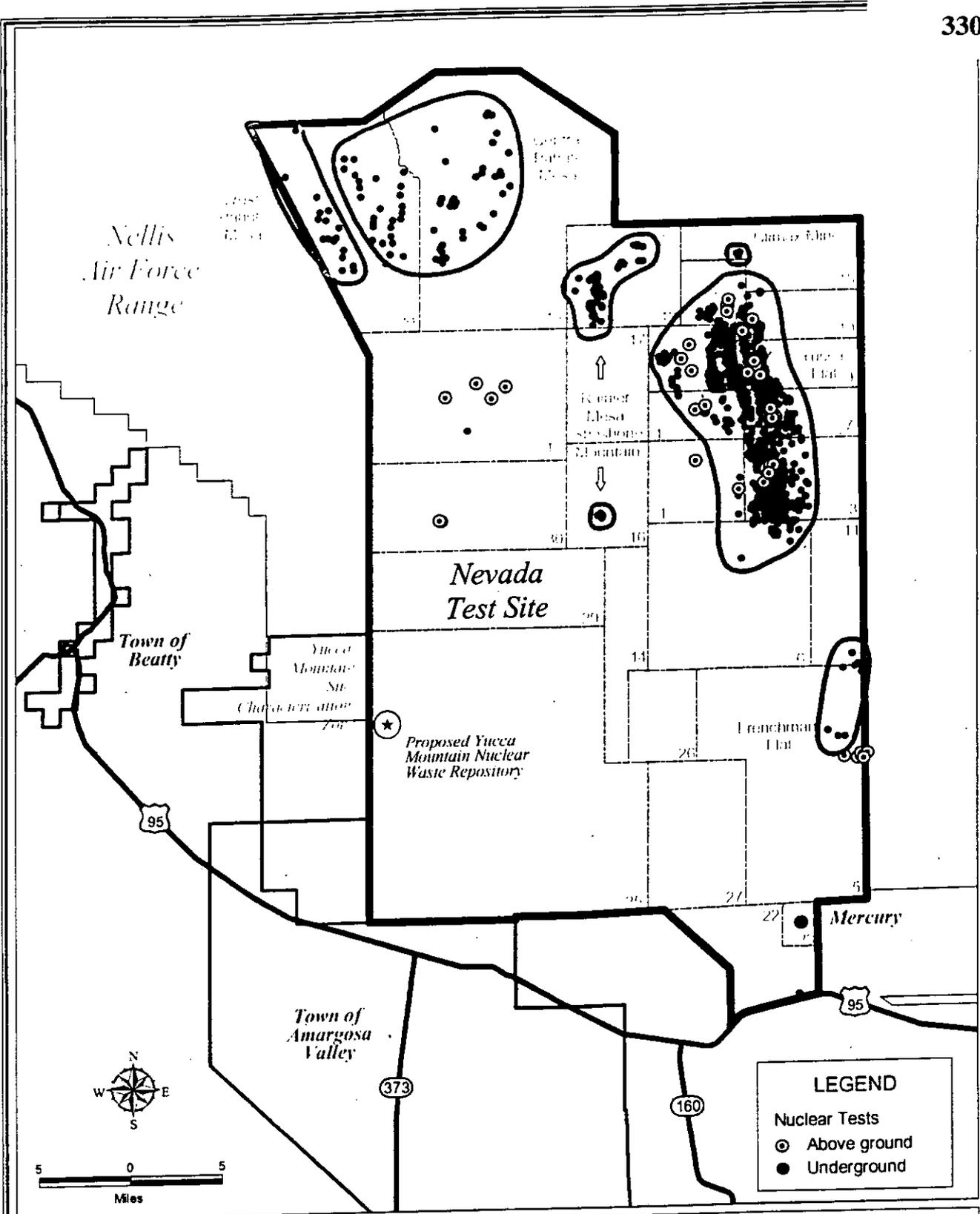
- The risks of transportation accidents and incidents, particularly those involving truck shipments of low-level and high-level radioactive wastes on 317 miles of two-lane public highways that connect Nye County communities. Two-lane roads in Nye County that potentially could be used for truck shipments of low-level waste (LLW) or high-level waste (HLW) include 147 miles on U.S. Highway 95, 49 miles on U.S. Highway 6, 42 miles on Nevada Highway 375, 15 miles on Nevada Highway 373, and 64 miles on Nevada Highway 160.
- The risk of radiological exposure in incident-free transportation of radioactive material into the site county—particularly exposure from truck shipment through the center of rural communities, where residents live and work very close to two-lane public highways, which they cross as pedestrians, and use daily for local as well as regional travel.

The proposed federal action could threaten the site county as it exists today, and even more, its future



Accidents on 317 miles of two-lane rural roads

Incident-free exposure in rural communities



6. Nevada Test Site (NTS) Nuclear Weapons Tests. The NTS was established by President Truman on January 11, 1951, early in the Cold War. Four federal public land orders were used to carve out an area for nuclear weapons testing from the Nellis Air Force Range, which was established by Presidential Executive Order in October 1940. Between January 27, 1951 and October 30, 1958, 100 nuclear weapons were exploded above ground at the NTS. Between July 26, 1957 and September 23, 1992, 828 nuclear devices were detonated underground in shafts or tunnels at the NTS - releasing radioactivity of about 458 million curies, over 1,000 times that released in the Hiroshima and Nagasaki bombs.

- The current condition that Nye County is not adequately staffed, trained, or equipped to consistently and reliably perform its obligation under the state constitution and state statutes to provide emergency management, response, and medical services related to the large-scale transport of radioactive or other hazardous material.
- The circumstance that—due both to the service needs of its growing and changing population and to the fact that 97.8 percent of its land area<sup>7</sup> is controlled by federal agencies—Nye County does not have a revenue base from which to develop the radiological emergency services required by its constitutional and statutory obligations, or to reliably maintain them at high levels over the 40 years or more of prospective large-scale waste shipments.
- The uncertainty in the destination county regarding what radioactive wastes are proposed to be delivered, when, and on which routes<sup>8</sup>. The concern that the federal government may be unwilling to seriously consult on transportation modes and routes with the single destination county proposed for transfer of radioactive materials generated at 80 sites in 35 states.
- The concern that transportation options that pose the least radiological and accident risk (both nationally and in the destination county) and the least life-cycle costs may be precluded by ineffective coordination among federal agencies responsible for shipments into Nye County and by the extreme politicization of nuclear waste transportation routing.

Local emergency  
response and  
medical  
services

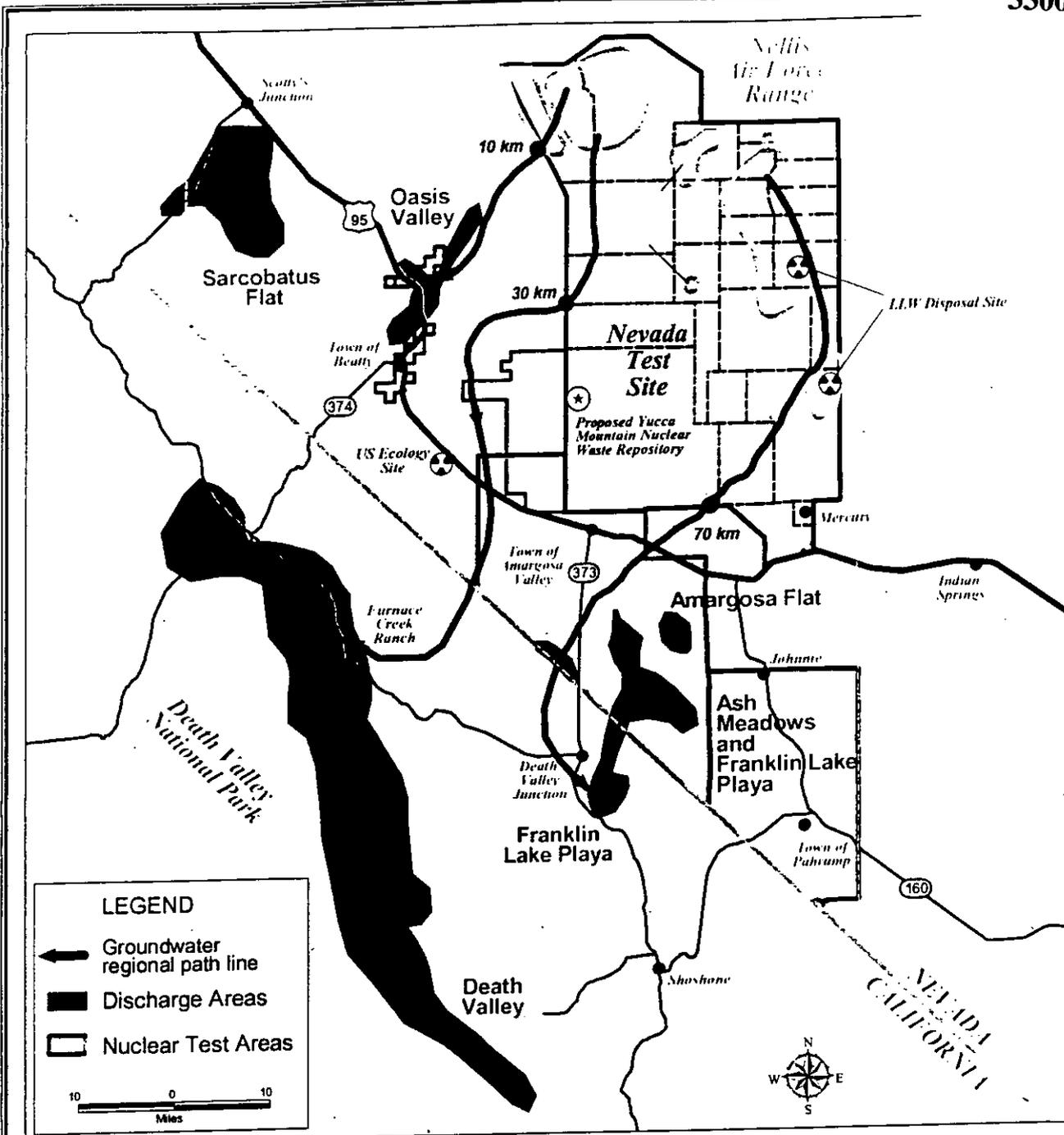
The local  
revenue base,  
given 97.8  
percent of Nye  
County is  
federal land

Uncertainty in  
mode-route  
choices

Politicized  
transportation  
decision  
processes

<sup>7</sup> See March 18, 2000 memo from J.M. Williams to Ms. Jeanie Ashe, Nevada State Economic Development Committee: Only 2.0 percent of Nye County's land is privately owned. DOE-managed land comprises only 6.6 percent of the total.

<sup>8</sup> For example, will shipments to Yucca Mountain be recently discharged or older spent fuel? Damaged or intact assemblies? In sealed canisters that will not be opened at the destination? Enter the destination county from the north, east or west? Travel during the day or at night?



7. Regional Groundwater Pathways. Regional groundwater systems are poorly understood, even as the DOE prepares to recommend a repository at Yucca Mountain. In general, groundwater systems flow from portions of the Nevada Test Site (NTS) towards the Nye County communities of Beatty and Amargosa Valley, and towards discharge areas in Oasis Valley, Death Valley and Ash Meadows.

On March 21, 2000, the New York Times reported: "When the federal government conducted 828 underground nuclear tests at the NTS..., its scientists knew that groundwater beneath the site would become contaminated. They believed that the underground water barely moved, and that radioactive particles would be sealed into cavities by the blasts or else absorbed by underground rock... But studies in recent years have found that radioactive particles like long-lived plutonium 239 can travel with water, and that water is flowing more rapidly beneath the site than was once believed. Scientists now agree that contaminated plumes have the potential to flow beyond the borders of the ... test site... toward populated areas. The trouble is that no one knows how big the plumes are, where they have already traveled or what exactly they contain... For residents near the test site, the focus on contaminated ground water has compounded fears about the Yucca Mountain nuclear waste repository, which the federal government plans to build near the western border of the NTS not far from Beatty and other populated areas."

## 2.2 Oversight of DOE Activity

During site characterization, the site county has had Congressionally-mandated oversight of the DOE Office of Civilian Radioactive Waste Management (OCRWM) plans, procedures and performance. Implementation of the DOE recommendation would involve many currently unanticipated contingencies and adjustments over 70 to 100 years. The concerns include:

- The uncertainty whether, because of lack of funding or Congressional mandate, Nye County will be able to maintain and continue vigorous and independent oversight of DOE activity in transporting the nation's highly radioactive wastes into, and disposing of such wastes within its jurisdiction.
- The uncertainty (even if Nye County is able to continue vigorous oversight) whether the DOE would heed a well-founded site county objection to its management of repository construction, operations, monitoring, or decommissioning.
- The resulting concern that, lacking a reasonable measure of control over implementation actions affecting its indefinite future, Nye County government and its elected officials could be unable to effectively represent legitimate and distinctive local constituencies and concerns during the 70 to 100 year implementation of the Yucca Mountain Project.
- The uncertainty whether the information necessary to monitor various aspects of repository and DOE/OCRWM performance would be properly collected and assessed over 70 to 100 years of implementation, and whether the site county would have a proper role in contributing to a comprehensive, coordinated and rigorous monitoring and assessment program.

Site county  
oversight during  
implementation

Response to a  
site county  
objection

Local capability  
to protect  
health, safety,  
and welfare

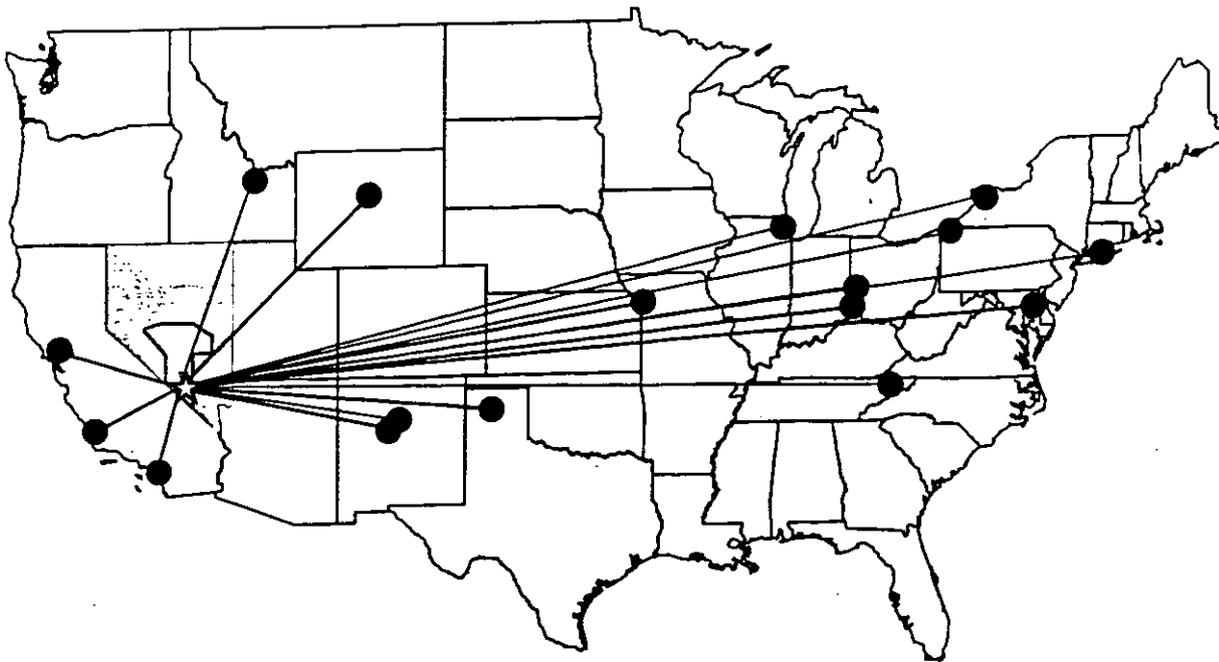
Site county  
information  
regarding DOE  
performance

## 2.3 Groundwater Contamination Concerns

Past and prospective DOE activity affects groundwater systems crucial for existing communities in southern Nye County and for the county's envisioned economic future. The concerns include:

- The potential for future contamination of groundwater (the crucial resource for human activity in the desert) beyond the Yucca Mountain site boundary.

Contamination  
from the YMP



### LEGEND

- Current Generators Authorized to Dispose of LLW at the at NTS
- Additional Generators Authorized Under WM PEIS Record of Decision



8. DOE Low-Level Waste Transfer. While DOE/OCRWM prepares its recommendation to transfer the nation's highly radioactive wastes to Yucca Mountain, the DOE's Office of Environmental Management makes increasing use of NTS Areas 3 and 5 for disposal of low-level radioactive wastes (LLW) generated in mission-related or clean-up activities in the nation's defense complex. Through 1999, 20 million cubic feet of LLW have been disposed of at the NTS. Over 18,500 shipments have been received from 15 DOE facilities in Ohio, Maryland, Colorado, New Mexico and California.

In its Record of Decision for its waste management program, the DOE made the NTS and Hanford sites available for disposal of both LLW and mixed low-level wastes (MLLW) from all DOE sites. A 1999 study found that, compared to other alternatives, use of NTS for LLW disposal saved the DOE complex \$668 million through 1993 and could save between \$1.7 and \$7.0 billion over the next 20 years. It is likely that virtually all future shipments of LLW from the DOE complex will be disposed of at NTS, and it is probable that MLLW shipments will be received as well. The future volume is larger than all that disposed through 1999.

- The potential that groundwater contamination from Yucca Mountain, in combination with contamination from underground detonation of nuclear weapons in the vicinity of NTS groundwater systems, could render the area's groundwater resources unusable.
- The potential that the threat of future groundwater contamination could negatively affect property values and economic development in the U.S. Highway 95 corridor along the site boundary. Such effects may occur even before contamination moves beyond DOE site boundaries, and may be attributable, at least in part, to distrust of federal agency assessment and action in response to the potential threat.
- The potential that, due to the expense of protecting complex groundwater systems at sites it has selected, the federal government may advocate technical limitation or alleviation rather than elimination of the potential groundwater threat.

Contamination  
from the NTS

Threat to  
economic  
development and  
property value

Potential for  
sacrifice,  
unacknowledged,  
and not  
addressed

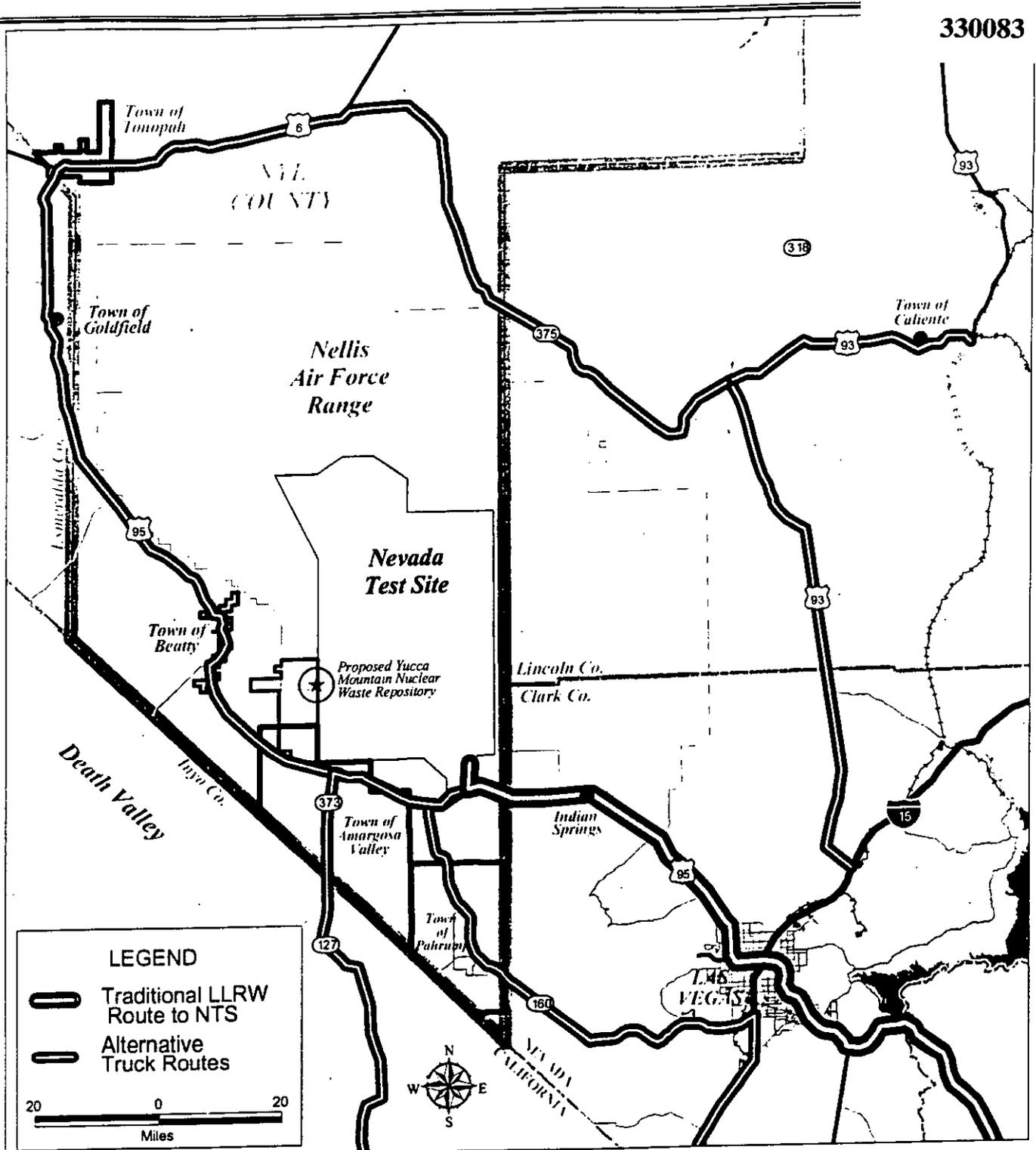
#### 2.4 DOE Implementation Over 70 to 100 Years

Despite many expensive studies and analyses, implementation of the Yucca Mountain Project would essentially be an experiment in which the federal government would hope to demonstrate for the first time -- using the nation's entire inventory of highly radioactive wastes -- that such a facility can be constructed and operated safely and with due consideration to the site county in which the experiment would be conducted. The concerns include:

- The irreversibility of the implementation decision, once made. The Yucca Mountain site will be recommended, not because its natural systems are uniquely suited for the long-term isolation of highly radioactive wastes, but because the federal government has no politically acceptable alternative. Having made the imposition on this basis, it is unlikely to consider other options.
- The potential that contingencies encountered during implementation of the YMP could require additional funding to meet standards of safety and equity, and that future Congresses may be unwilling to appropriate such funds and/or to require such funds from the nuclear industry.

An experiment,  
irreversible  
once initiated

Potential  
withdrawal of  
federal  
commitment



9. Truck Routes to the Nevada Test Site (NTS). For DOE shipments of LLW for disposal at NTS, USDOT routing guidelines resulted, through the late 1990's, in the use of U.S. Highways 93 and 95 through the rapidly urbanizing Las Vegas Valley. Concerned about the risks of on-going LLW shipments - and, even more, about the risks of prospective HLW shipments - Clark County and the State of Nevada have advocated the use of alternative routes for truck shipment of LLW to NTS, and have insisted that DOE (not the State of Nevada) be responsible for route selection. Accommodating these demands, DOE shippers now avoid the urbanized Las Vegas Valley by using various two-lane roads through rural Nevada, including 317 miles of such roads in the destination county. Comparing the traditional truck route with the alternatives for prospective DOE shipment of LLW to the NTS, a 1999 study found that the alternative truck routes increase nationwide costs by 14 percent, accident risks by 13 percent and radiological risks by 8 percent. The alternatives also involve major shifts of risks among entities. Risks in Nevada as a whole are increased 34 percent; risks in the destination county are increased many times.

- The potential that such shortfalls might be resolved by compromising established levels of safety or equity during project implementation, resulting in further risk to and imposition on the single local jurisdiction to which the highly radioactive, long-lived wastes have been transferred.
- The resulting uncertainty of whether the impacted local jurisdiction can rely on future federal managers and Congresses to fully honor commitments made by their predecessors.
- The potential that public awareness of these circumstances could damage the ability of Nye County to pursue its economic and community development aspirations not related to nuclear weapons testing or nuclear waste disposal.

## 2.5 DOE's Management of Its Activity in Nevada

DOE's management of its activity in Nevada is outdated. Traditional DOE management practices in Nevada were established in the 1950s and 1960s. They assume that the entire Nevada Test Site (now covering 1535 square miles) would be reserved for nuclear weapons testing, that the site county would remain a sparsely populated desert, and that Las Vegas would remain the only residential community in the region attractive to families of professional and managerial employees.

Almost a decade after the end of the Cold War, nuclear weapons are no longer detonated at NTS, and the site is being considered for many other uses. Las Vegas is hugely expanded, but is no longer the only community in the region potentially attractive to the families of professional and managerial employees. The residential population and service base in Nye County—particularly southern Nye County—is rapidly expanding and diversifying. If the DOE's future activities in its Nevada site county are to be presumed safe, they must be combined with serious reexamination of management patterns established during nuclear weapons testing, decades ago. The concerns include:

- The potential that the DOE will continue to use its facilities in Nye County without investment in the affected community, and without serious attention to site county perspectives and aspirations—meanwhile maintaining that its activity poses no hazard for impacted populations which do not include their own professional staffs and contractors.

Potential  
tradeoffs of  
safety and  
equity

The reliability  
of federal  
agencies

Effects on the  
site county's  
non-radiological  
future



Traditional DOE  
management  
practices

### U.S. Highway 95 Through the Town of Beatty



10. U.S. Highway 95 Rural Communities: Standard interstate highways have wide rights-of-way where pedestrians and much local traffic are excluded. Residences and businesses are located at least 200 feet from traffic lanes. Metropolitan emergency response and medical services are well-prepared to respond to accidents involving radioactive materials shipment. In contrast, two-lane roads through rural Nevada communities have narrow rights-of-way, much less access control, and are regularly crossed by pedestrians and used by local traffic. A large portion of the entire community's residences and businesses are clustered close to the roadway, frequently within 50 to 100 feet of traffic lanes. Low traffic speeds and traffic stops increase exposure from accident-free truck shipment. Volunteer emergency response and limited medical services are not prepared to respond to accidents involving radioactive materials.

- The DOE's continued refusal to recognize its Nye County facilities as flagship facilities comparable to Oak Ridge and Hanford—facilities essential to the agency's past and future missions.
- The potential that DOE will continue to treat Nye County as a local jurisdiction to be mollified, rather than as a steward with distinctive and legitimate interests, requiring government-to-government negotiation of conditions for imposition.

## 2.6 Inequity

Judged on its face or in reference to the intent of the Nuclear Waste Policy Act of 1982, a decision to transfer the nation's entire inventory of highly radioactive wastes to a single rural county in Nevada would be an inequity of dramatic proportions. Regulatory policy, as implemented under the National Environmental Policy Act (NEPA) or through programs administered by the Environmental Protection Agency and the Nuclear Regulatory Commission, is generally blind to regional equity. But Congress inherits from Madison and Hamilton a federal system of government that demands circumspection in the imposition of the national will on a selected locality. The concerns include:

- The gross inequity of forcing a single rural jurisdiction to provide the site for transfer of intensely unwanted radioactive wastes from 75 commercial reactor sites and five defense sites in 35 states across the nation.
- The further inequity of imposing such unwanted material on the same jurisdiction that has provided the nation's site for nuclear weapons testing, and the site for disposal of low-level radioactive wastes from 23 sites and communities in the nation's weapons complex.<sup>9</sup>
- The still further potential inequity of shipment in the site county by transportation modes and routes that are inherently less safe than those used to move the wastes across the country.

<sup>9</sup> Some who have taken pains to ensure that highly radioactive wastes would not be transferred to their own states now ask, "What better place to put this unwanted material than Nye County, parts of which have already been irreversibly contaminated by nuclear weapons tested during the Cold War?" The site county believes that past sacrifice should be formally acknowledged, addressed and redressed. Rather than serving as its justification, past sacrifice demands extraordinary consideration in contemplating additional future imposition.

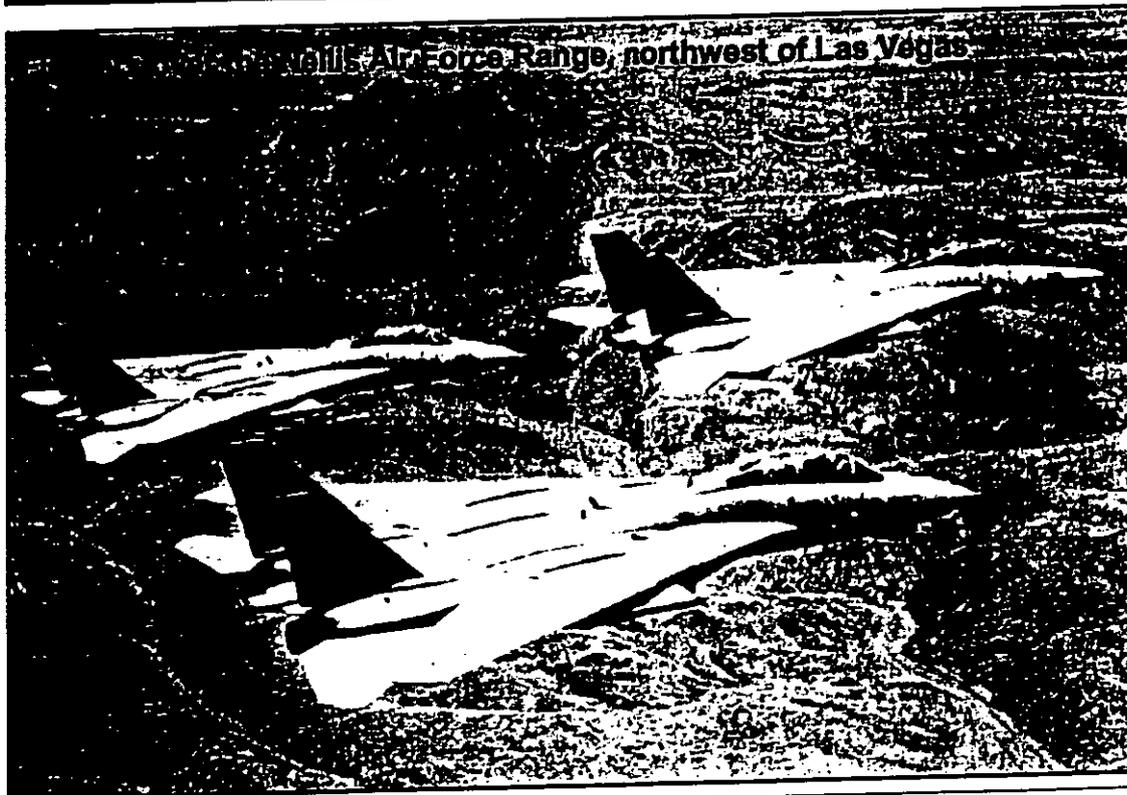
Site county  
facilities not  
flagship in  
Nevada

Site county  
interests not  
negotiated

From 80  
generator sites  
to one disposal  
site

The addition to  
past impositions

Use of  
transportation  
modes-routes  
inherently less  
safe

**Mercury at the Nevada Test Site**

11. The Site County for Major Federal Missions: For 50 years, 4,238 square miles of federally withdrawn land in Nye County has been critical to the missions of the U.S. Air Force (Nellis Air Force Range) and the U.S. Department of Energy (Nevada Test Site, now also Yucca Mountain). In 1999, these federal activities contributed over \$1 billion to the statewide gross regional product, but less than \$60 million to the economy of the site county - and only about 7.4 percent of the total site county economy. Traditional patterns of infrastructure investment, procurement, workforce assignment, and residency by federal agencies in Nevada are major causes.

### 3.0 THE RATIONALE FOR THE PROPOSED PROTECTIONS

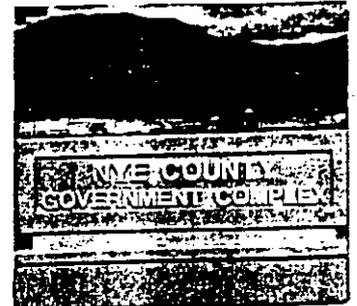
The specific protections described in Section 4.0 are based on several propositions about what is right and equitable in the United States' federal system of government in this unique circumstance. This rationale includes propositions regarding the standing of the site county in relation to federal and state levels of government, and understandings regarding what is being negotiated.

#### 3.1 Local Government Standing To Negotiate Conditions of a Federal Government Imposition

While the federal government may, after due consideration, decide that it must impose on a particular locality in order to further the national interest or convenience, the imposed-upon locality has standing to negotiate conditions for the imposition. Such standing is clearly expressed in Section 116 of the Nuclear Waste Policy Act of 1982, and its definition of the term "affected unit of local government," ...the unit of local government with jurisdiction over the site of a repository or a monitored retrievable storage facility. While the standing of the site county has a legal dimension, its political weight is increased by several circumstances:

- The political standing of the site county is increased if the federal government has made previous impositions on the same locality, or if the federal government has shown itself to be less than fully trustworthy in its management of comparable facilities elsewhere.
- The political standing of the site county is increased if the imposition is on it alone, rather than shared with other jurisdictions in other regions of the country.
- The political standing of the site county is increased to the extent that the imposition is for the convenience and benefit of other parties, not for the security of the nation as a whole.

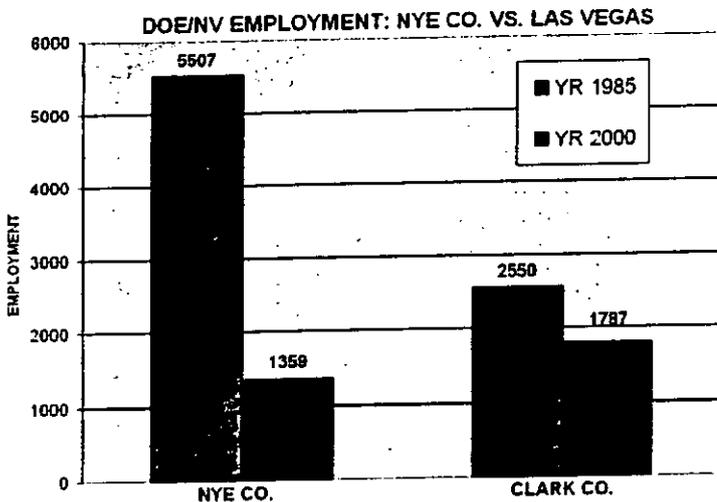
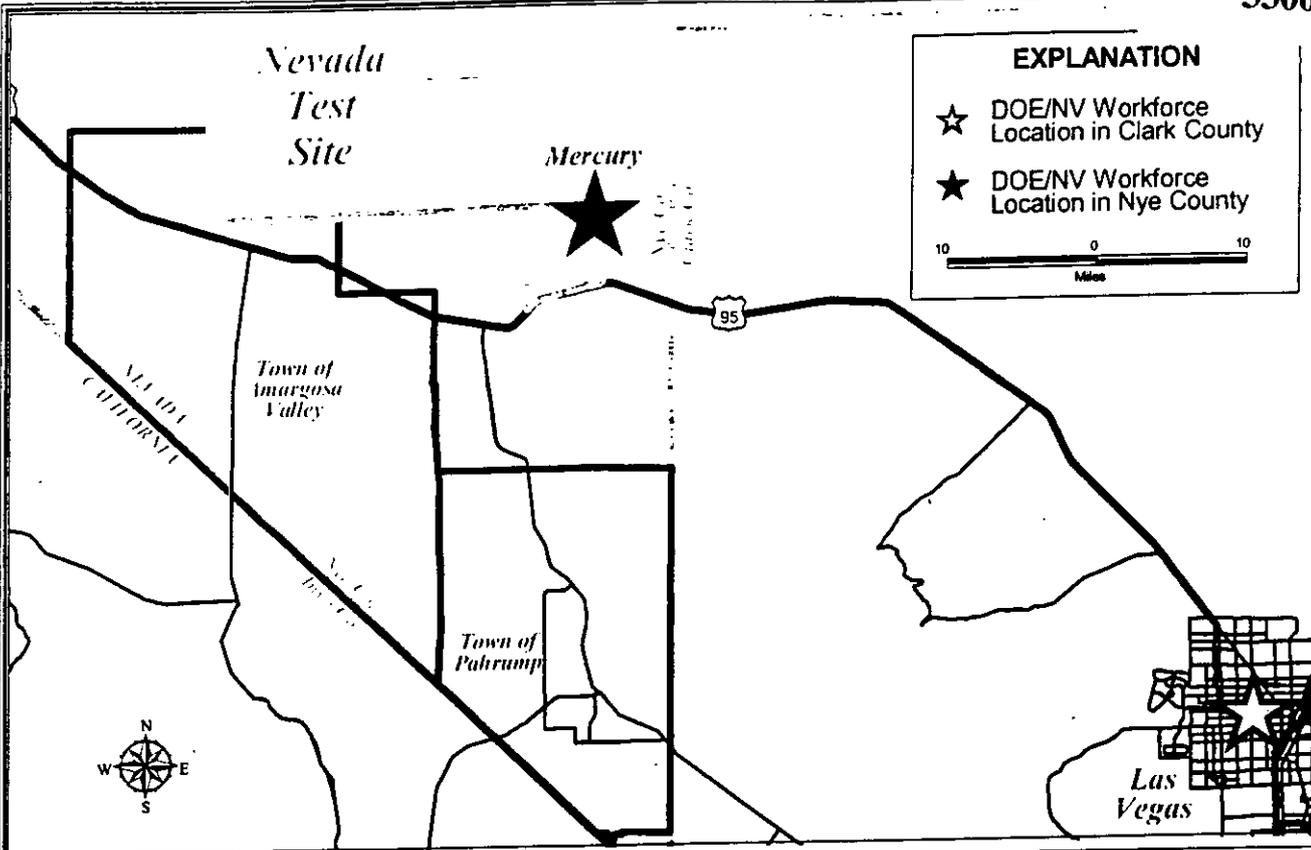
Some factors that increase the site county's standing to negotiate conditions for possible further federal imposition.....



Previous impositions

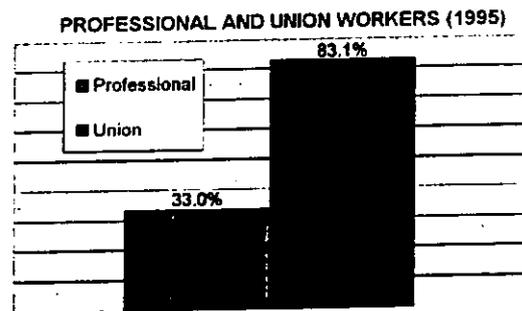
Imposition on a single locality

Imposition for convenience

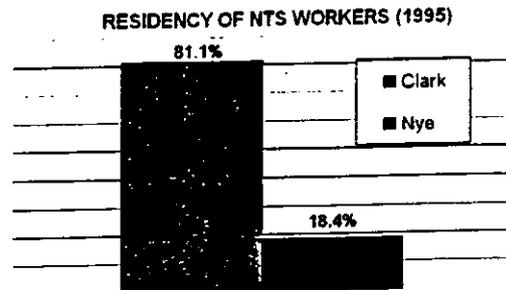


Between 1985, when 18 nuclear devices were detonated at the NTS, and 2000, when the major NTS activity is the disposal of low-level radioactive waste, DOE/NV employment has decreased by 75%, while employment in Las Vegas has decreased by only 30%.

Of the workforce at NTS, only 18.4% live in the county where they work; 81.1% commute from the Las Vegas Valley, often using subsidized bus services to make the 60 to 65 mile trip.



Of DOE's unionized craftsmen and equipment operators, 83% were assigned to work at the NTS in 1995, compared to only 33% of its professionals and managers.



12. DOE/NV Workforce Distribution: At DOE flagship facilities (e.g. Hanford, Oak Ridge) community development in the site county has been encouraged and supported. In Nevada, management practices established during the Cold War have used site county facilities only for hazardous testing and waste disposal activities. Other development has been discouraged. Workforce assignment and residency patterns reflect the results.

- The political standing of the site county is increased if the imposition is a first and only-of-its-kind facility, whose future performance may be predicted with elaborate models, but cannot be demonstrated.
- The political standing of the site county is increased if, in siting and transportation decisions leading to the imposition, the federal government has been shown to favor politically powerful entities and interests over those with lesser political access and power. The implication is that the federal government may continue such a pattern during implementation.
- The political standing of the site county is increased if the imposition poses potential threats to the county's future in ways that are not, and perhaps cannot yet be fully understood. The absence of full knowledge and understanding of the nature and extent of the potential threat increases the relevance of the local jurisdiction's own judgement regarding the threats to its future and the possible remedies.

Imposition of an  
experiment

Politicized  
decision  
process

Future effects  
not understood

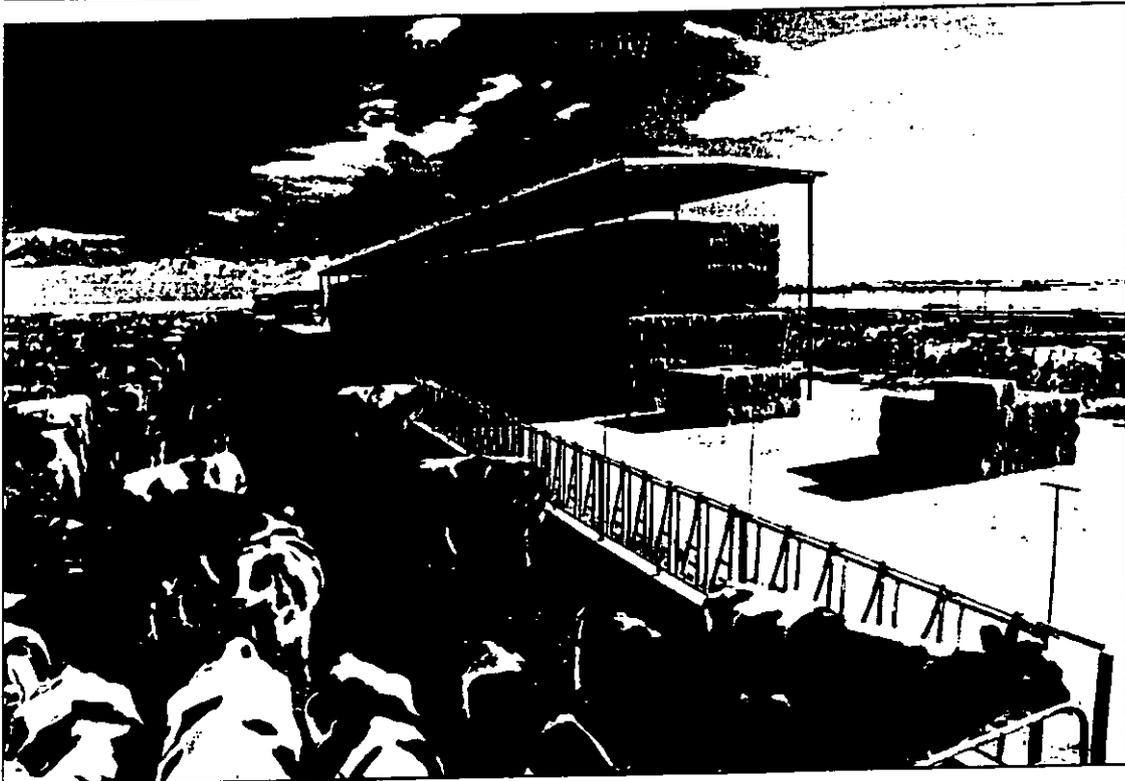
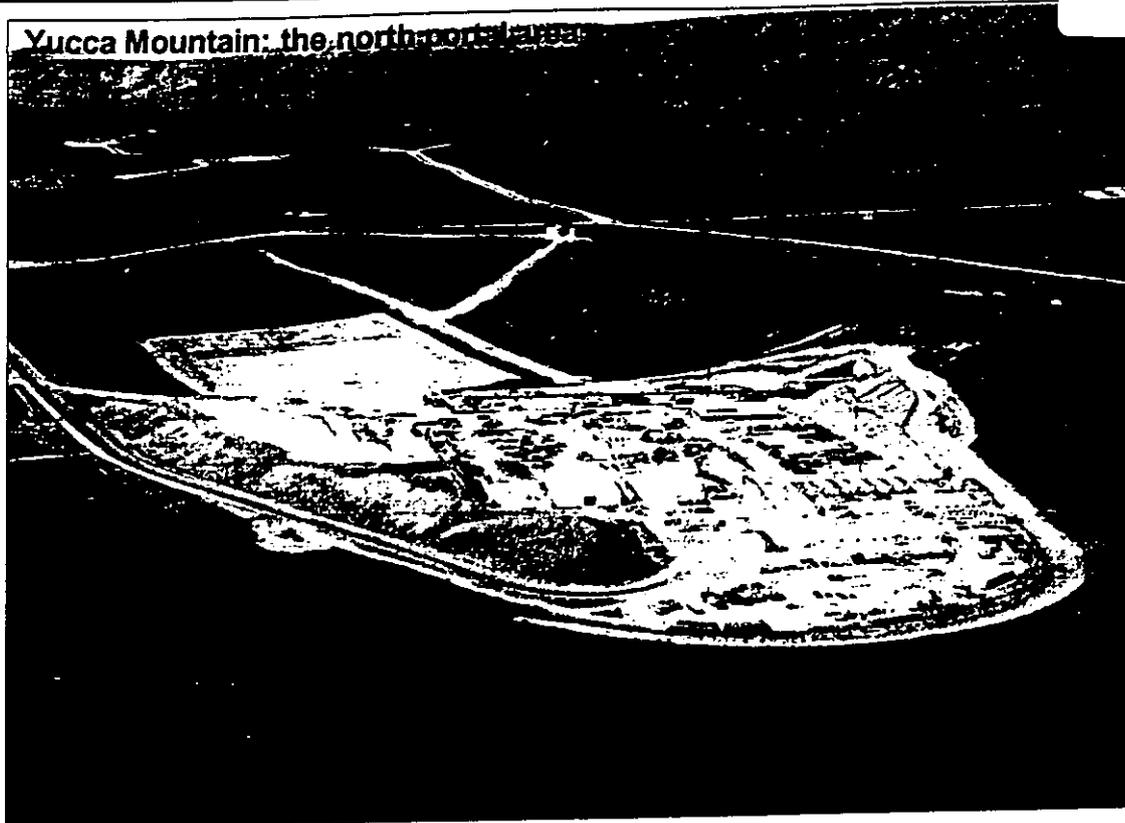
### 3.2 The Standing of the Site Locality and State

The State of Nevada also has standing, and its standing includes (in NWPA Section 116) the right to disapprove (subject to Congressional override) a recommended repository site within the state. However, the federal government, in making an imposition for the national interest and convenience, is obligated to address the claims of the imposed-upon county as distinct from the claims of the state. While local governments are creatures of state constitutions and statutes, the site county is directly represented only by its local elected officials, and local agencies are directly responsible for most public services—police, fire, emergency response, planning, economic development, public works, education, and justice.

The purpose of drawing a distinction between the site county interests and those of the state is to enable the imposed-upon entity to identify conditions necessary to protect its own future—not to contradict or undermine considered state interests and positions. In this case, the distinctive standing of the site county is increased by several circumstances:

The site  
county's  
standing is  
distinct from  
that of its state  
government





13. The Contribution of the DOE YMSCO: In fiscal year 1999, the DOE/YMSCO budget of about \$250 million contributed only \$8.2 million to the economy of the site county. The local economic contribution of two local dairies, with annual operations of about \$17.5 million, is 52 percent greater than that of DOE's Yucca Mountain Project. Similar to many activities in rural Nevada, almost two-thirds of the dairies' economic impact occurs outside the site county. In contrast to the DOE/YMSCO, however, its infrastructure investment is in the site county, its employees live and work in the site county, and a substantial portion of its purchases are made in the site county.

- The distinctive standing of the site county is increased if a major federal imposition affects it uniquely, in a degree and manner not shared by sixteen other Nevada counties.
- The distinctive standing of the site county is increased if the state's constitution and statutes place special responsibilities on local jurisdictions for the protection of health, safety and welfare, including the economic welfare of current and future residents and businesses.
- The distinctive standing of the site county is increased if the federally imposed-upon locality comprises a small share of statewide population, and if this small share is reflected in its representation in the state legislature and in Congress.<sup>10</sup>

### 3.3 The Nature of the Protections To Be Negotiated

The protections to be negotiated should be those relevant and appropriate to the circumstances of this unique case—measures that address in direct and substantive ways the Yucca Mountain Project effects outlined in Section 2.0., and the site county objectives outlined in Section 4.0.

- The conditions that the imposed-upon locality may negotiate with the federal government should be actions that the federal government in its legislative, regulatory, and administrative roles has the capability to implement. The federal government should apply these capabilities in a coordinated manner to meet its obligations to the imposed-upon locality.
- The conditions to be negotiated should address and substantially meet each of the site county objectives outlined in Section 4.0 below.
- While the conditions may increase the cost of the imposition, or require special coordination or innovation in federal agency action, they should not be explicitly designed to prevent an imposition that has been determined to be in the national interest or convenience.

<sup>10</sup> Six of Nevada's 42 assembly persons represent 94.6% of the state's land area, including virtually all of its lands managed, for multiple use or for special federal purposes, by federal agencies. 32 of Nevada's assembly persons represent the state's two metropolitan centers in Clark and Washoe counties; their districts comprise less than one-half of one percent of Nevada's land area. Nye County shares a single representative in the state legislature with three other central Nevada counties whose perspectives on the Yucca Mountain Project are naturally distinct from those of the site county. Not only does the YMP site county have very limited representation in the state government; no state government official exclusively represents site county objectives regarding this momentous project. The above assessment, prepared in late 2000, could be further exacerbated by redistricting in 2001.

Unique effects  
on one of 17  
counties

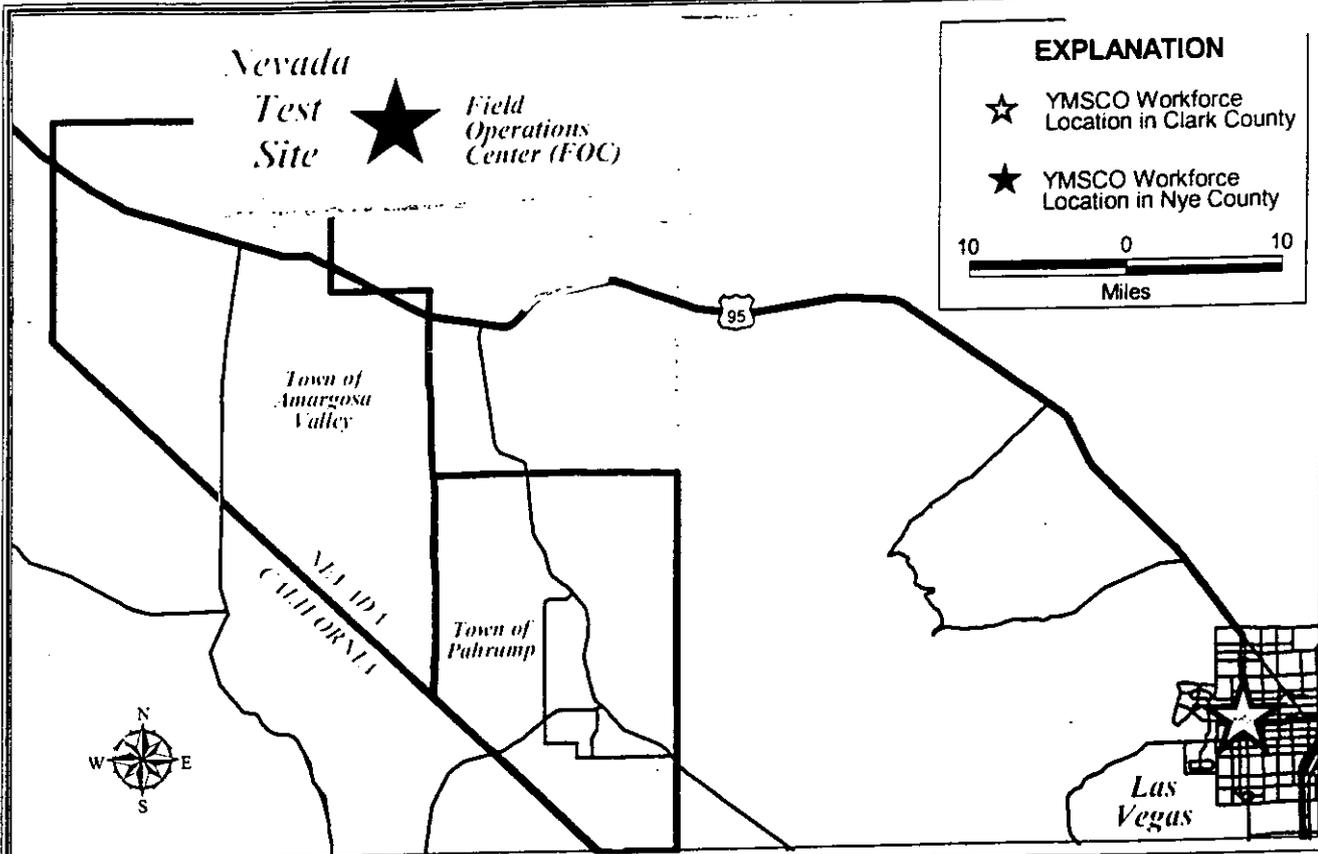
Local  
government  
responsibilities

Limited state  
government  
representation

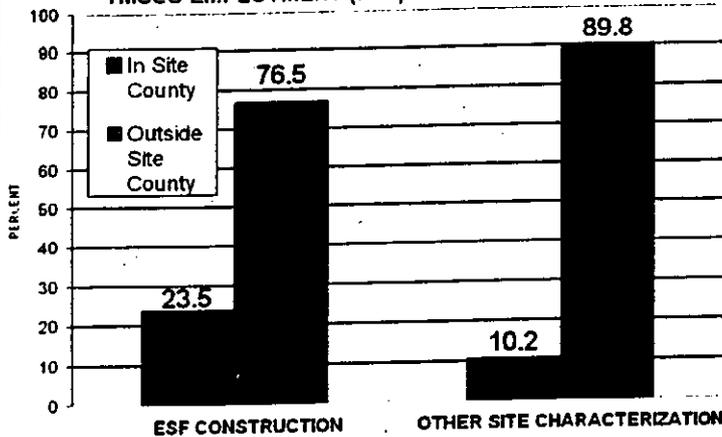
Within federal  
government  
capability

Address each  
site county  
protection  
objective

Focus on the  
"how" of siting,  
not whether



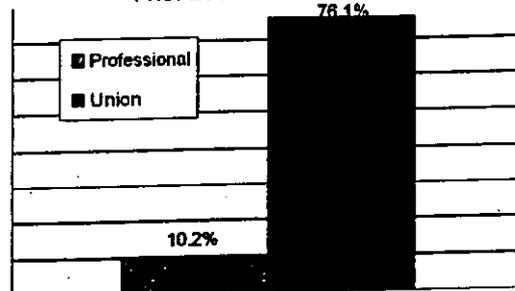
**YMSCO EMPLOYMENT (FTE): NYE CO. VS. CLARK CO.**



Except during construction of its Exploratory Studies Facility (April 1993 -September 1995), only 10% of its full-time equivalent employment has been assigned to work in the site county.

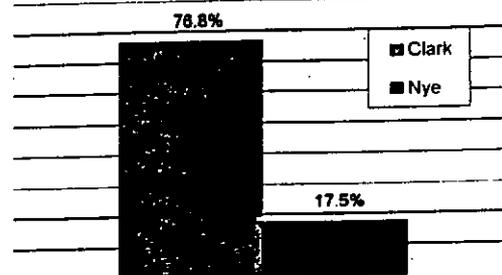
Of its Nye County workforce, only 17.5% live in the county in which they work. Almost 77% commute from Las Vegas, often using subsidized bus services to make the 85 to 90 mile trip.

**PROFESSIONAL & UNION WORKERS**



About 76% of the DOE/YMSCO union workers, but only 10% of its professional and managerial workers are assigned to work in the site county.

**RESIDENCY OF YM SITE WORKERS**



14. YMSCO Workforce Distribution: DOE's Yucca Mountain Site Characterization Office (DOE/YMSCO) has adopted the workforce distribution practices established during NTS nuclear weapons testing. Though the DOE says its activity at Yucca Mountain is safe, its site county facilities are used for field purposes only, not for management of the site characterization project.

- As an alternative to a full and convincing demonstration that a proposed protection is unreasonable or infeasible, the federal government may propose alternatives that it believes would accomplish the same goals—without presuming, however, that it alone should make the determination.

Federally  
proposed  
alternatives

#### 4.0 OBJECTIVES OF THE PROPOSED PROTECTIONS

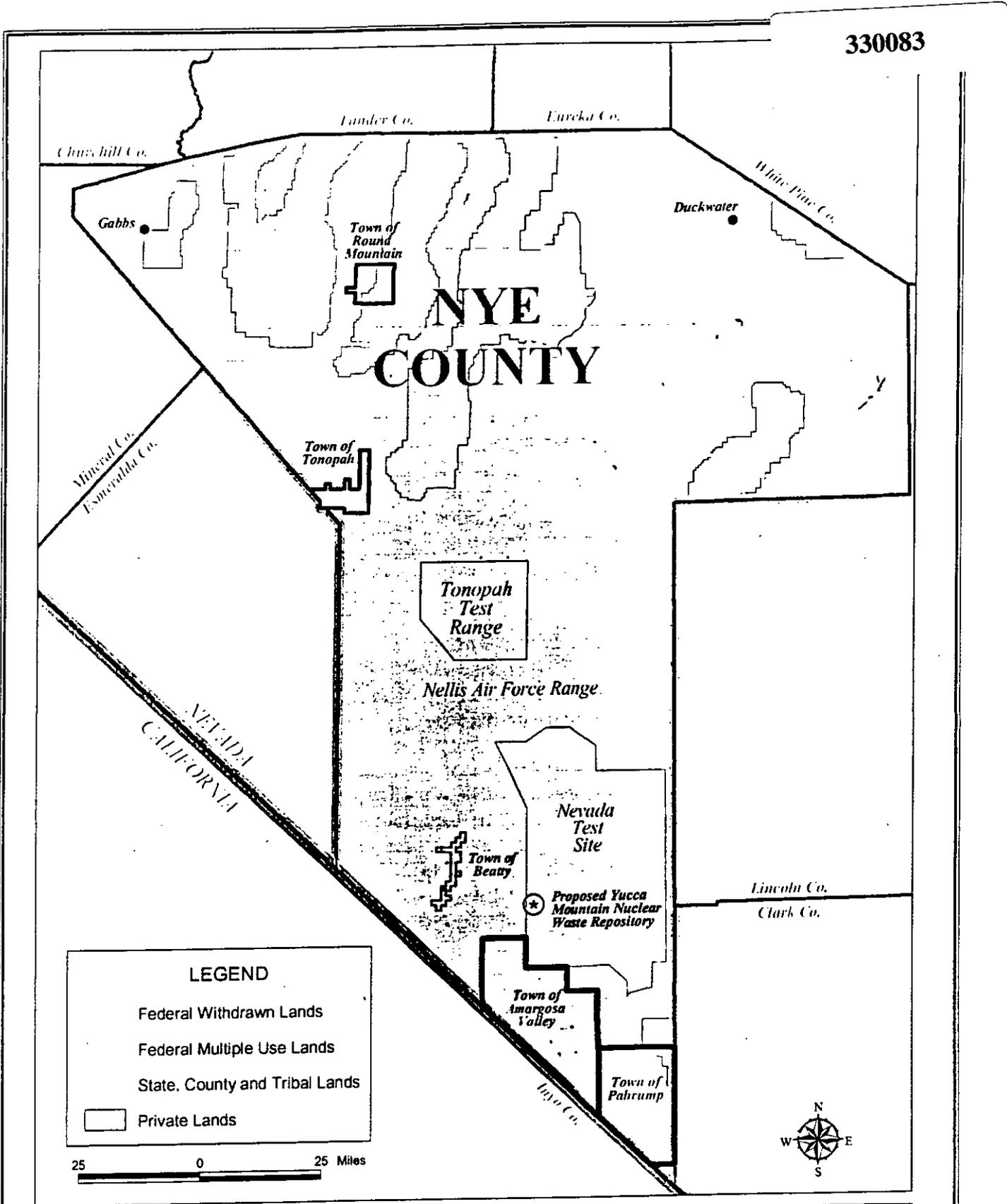
Section 5 of this report outlines the protections that Nye County believes are right and proper should the federal government decide to proceed with the Yucca Mountain Project. The plan considers how the federal government might attempt to protect and assure rather than threaten the future of the single county to which it has chosen to transfer intensely unwanted materials generated at 80 sites in 35 states across the nation. The Plan's protections have three broad objectives:

##### 4.1 Protect Health, Safety and the Environment

The first objective is assure the health and safety of current and future residents of site county communities affected by the DOE's transportation and disposal activities at Yucca Mountain.

Despite best current intentions, neither the DOE nor Congress can provide an ironclad assurance. First, the Yucca Mountain repository is not designed to permanently isolate highly radioactive, long-lived wastes. Second, the current design for this first-of-its-kind facility has not been proven in practice. Third, even if the design performs as intended, its performance could be compromised by project management lapses over 70 to 100 years of implementation—a period over which current DOE senior staff, along with their expertise, sensitivities and commitments, will be replaced many times. Fourth, sister federal agencies, over time, may respond to each other's interests, and those of their Congressional funders, more directly than to those of the site local government in the central Nevada desert. Fifth, a current Congress cannot commit its

By itself, the  
federal  
government  
cannot meet the  
site county's  
first objective:  
to assure the  
health and  
safety of  
current and  
future Nye  
County  
residents



15. Federal and Private Lands. Nye County is larger than four eastern states combined (New Jersey, Delaware, Rhode Island and Massachusetts). However, 97.8 percent of its land area is managed by federal agencies, and 4,445 square miles, including much of the county's center, has been withdrawn from multiple use for exclusive federal purposes. Less than 2 percent of the county's land is available for ordinary community and economic development. Much of the "private land" on this map is patented mining claims, not land intended or suited for community development.

successors to address future contingencies in a manner that protects the site county.

Therefore, the plan includes several measures designed to provide the site county with functions, resources, information and capacities needed to enable those most directly and permanently affected to protect their own health, safety, and welfare rather than relying entirely on federal agencies. Put another way, the protections are designed to enable the site local government to perform its duty to protect the health, safety, and welfare of its residents.

#### 4.2 Equity in Transportation Mode - Route Selection and Operations

The second site county objective is to ensure that prospective shipments of radioactive wastes—as they are funneled in high volumes over 40 years from 80 sites in 35 states—use modes, routes and operational practices in the destination county inherently as safe or more safe as those used in shipment cross-country.

For not one but two high volume, highly-funneled prospective shipment campaigns for disposal of radioactive wastes, DOE and Congress have selected disposal sites in a county whose communities are served currently only by two-lane rural roads—roads inherently less safe than interstate highways or mainline railroads. Having selected these sites, federal agencies will now conduct a mode-route selection process that will likely be highly politicized. In this politicized process, the destination county mode-route options may be limited to those currently available routes acceptable to more politically powerful neighbors—in effect, allowing large shifts of risks onto the very locality that by rights should be most rigorously protected.

If the federal government chooses to use sites in a single county for disposal of large volumes of radioactive wastes, it must be the responsibility of the federal government (Congress, the Department of Transportation, and the Nuclear Regulatory Commission, as well as the DOE) to devise modes, routes and operations practices in the destination county inherently as safe or safer than those used cross-country—and to do this in direct consultation with the destination county. The proposed protections include several measures to promote “best-practice” transportation planning, with equity for the single county targeted for 40 years of prospective radioactive waste shipments. These protections include a special



Transportation modes and routes should be inherently as safe or more safe as those used cross-country





16. Payments Equal to Taxes (PETT). NWSA Section 116 (c) (3) requires the DOE to make grants equal to the State and local taxes that would be levied if the repository (in its characterization, development, or operation) involved non-federal property and activity. This Plan treats PETT as a grant, not as a protection, and assumes that the NWSA's provisions regarding PETT remain in force.

In 1989, Nye County developed an appraisal methodology for PETT, concluding that the Yucca Mountain Project should be appraised as if it were a private utility engaged in interstate commerce. The Nevada Department of Taxation's Division of Assessment Standards reviewed and approved the assessment methodology, but determined that Yucca Mountain should be valued by the local assessor "until the Repository becomes an operating facility."<sup>1</sup> Accordingly, during site characterization, Yucca Mountain has been considered a "utility under construction," and the PETT grant has been negotiated rather than assessed, resulting in payments lower than those that would be required were the project assessed as operating in interstate commerce.

**Federal Contribution to Local Government.** The PETT provisions of the NWSA apply only to about one percent of the federally managed land in the site county. Federal agencies responsible for the county's remaining 11.2 million acres of federal land contribute to local government revenues in payments-in-lieu-of-taxes (PILT) and possessory use taxes (paid by federal contractors on local purchases of goods or services). The revenues from the federal agencies which control 96.5 percent of the site county's land pay 1.41 percent of its cost of local government.<sup>2</sup> Including the PETT grant, revenues from federal agencies which control 97.8 percent of the site county's land pay 9.7 percent of its cost of local government.

<sup>1</sup> October 29, 1992 letter from David P. Purcell (Chief, Division of Assessment Standards, Nevada Department of Taxation) to Barbara Raper (Chairman, Nye County Board of Commissioners), with copy to Carl Gertz (DOE Project Manager).

<sup>2</sup> This calculation removes federal contracts (for police services at NTS) and grants (for YMP-related scientific investigations and oversight) from both local government expenditure and revenues. With this adjustment, the cost of local government – including county government, the towns, the school district, and local taxpayer support for the county's two hospital districts – will be \$121 million (about \$2990 per capita) in FY '01.

destination county role in determinations of what radioactive materials are delivered to the county, when, and under what conditions, as well as assurance of the site county's capability to perform its duty to provide emergency response and medical services in any radioactive accident or incident.

#### 4.3 An Opportunity for a Non-Radioactive Economic Future

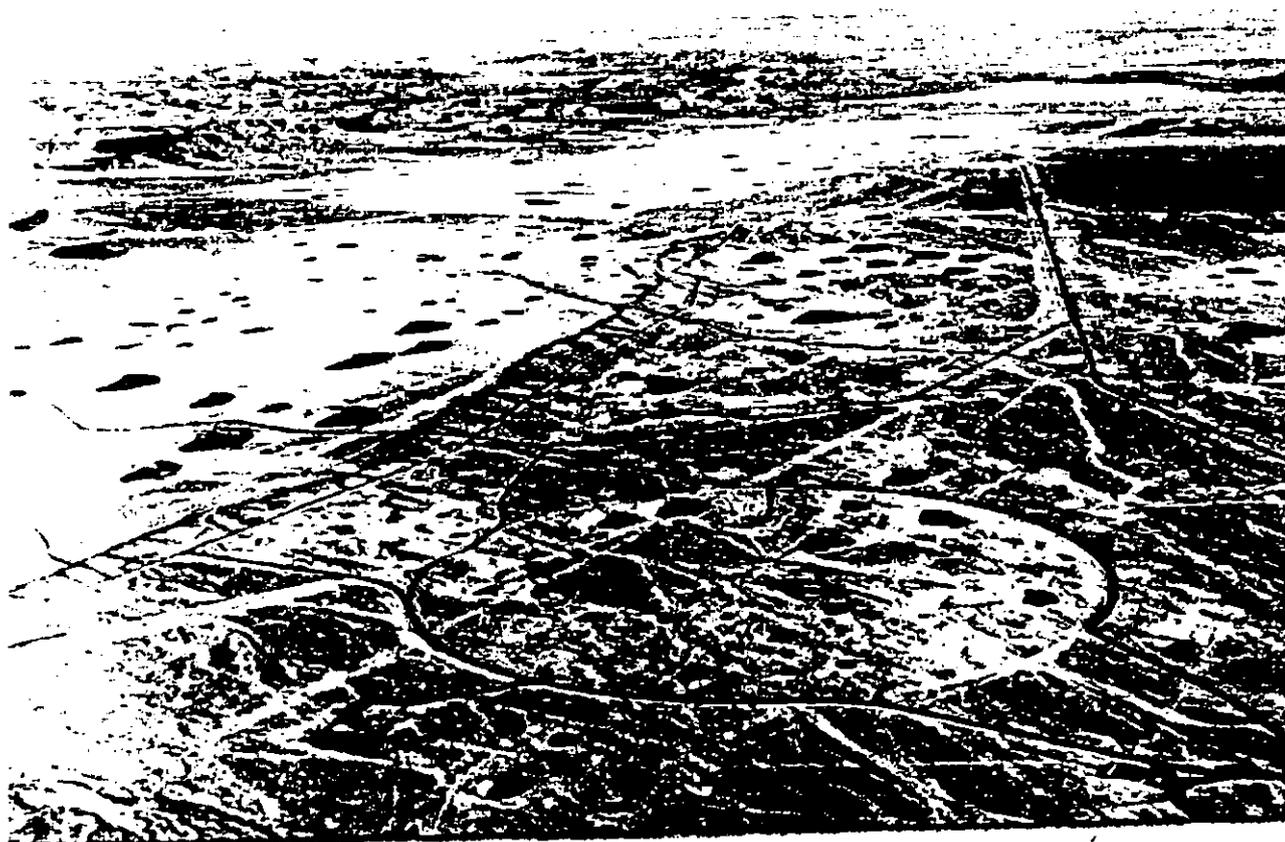
The third objective is to provide an opportunity for a non-radioactive economic future in the site county -- even as the federal government makes extraordinary future radioactive impositions in addition to the extraordinary impositions of the past.

In the last half of the 20<sup>th</sup> century, withdrawals of huge tracts in Nye County for exclusive federal purposes—and the use of one huge tract for nuclear weapons testing—precluded most opportunity for normal community and economic development in the center of the site county and along the U.S. Highway 95 corridor bordering the withdrawn lands. Since weapons testing ceased in 1992, Nye County has invested considerable effort to envision and promote a non-radioactive economic future for the corridor connecting its key communities. Meanwhile, DOE claims that its proposed future activity in Nye County, unlike its past activity, is safe—presumably compatible with other economic and community development.

If DOE's future activity is as safe as claimed, then its facilities in Nye County should be treated as its flagship facilities in Nevada. Further, the federal government should demonstrate that its future activity is compatible with—not preemptive of—the site county's envisioned non-radioactive economic future. Several of the proposed protections are measures by which the federal government can demonstrate its resolve that its future activity will not blight the site county's economic future. If the federal government cannot make such a demonstration, then it should both acknowledge and address the sacrifice of a selected local community.

An opportunity  
for an  
attractive non-  
radiological  
future, despite  
further  
radiological  
imposition





17. An Outsider's Perspective of the Nevada Desert. Persons from other parts of the country often think of the Nevada desert as a wasteland -- a convenient place to do or put things that are unwanted or politically unacceptable elsewhere. This view sometimes links the portions of the Nevada Test Site used for nuclear weapons tests with current proposals to transfer the nation's highly radioactive wastes to Yucca Mountain, about 28 miles southwest of the Yucca Flat testing area shown above. What better place to put this unwanted stuff, it is asked, than this place, which has already been contaminated to the point that it can never be cleaned up?

While it is correct that parts of the Nevada Test Site have been sacrificed for national security interests, the observation is misinformed in several respects. First, while DOE will make major efforts to demonstrate that it can meet isolation standards at Yucca Mountain, it will not demonstrate that there is "no better place." (Indeed, preliminary evidence suggests other natural systems may be better suited for long-term waste isolation). Second, a past sacrifice for the nation's security does not justify a future imposition for federal government convenience in meeting its obligation to the commercial nuclear power industry. Third, while a half-century ago it may have been possible to assume that no local aspirations are affected by federal government sitings in the central Nevada desert, such an assumption is clearly inappropriate today. Fourth, if a particular community has been or will be selected for sacrifice to larger interests, this should be acknowledged and addressed with the site county on a government-to-government basis.

## 5.0 PROPOSED SITE COUNTY PROTECTIONS

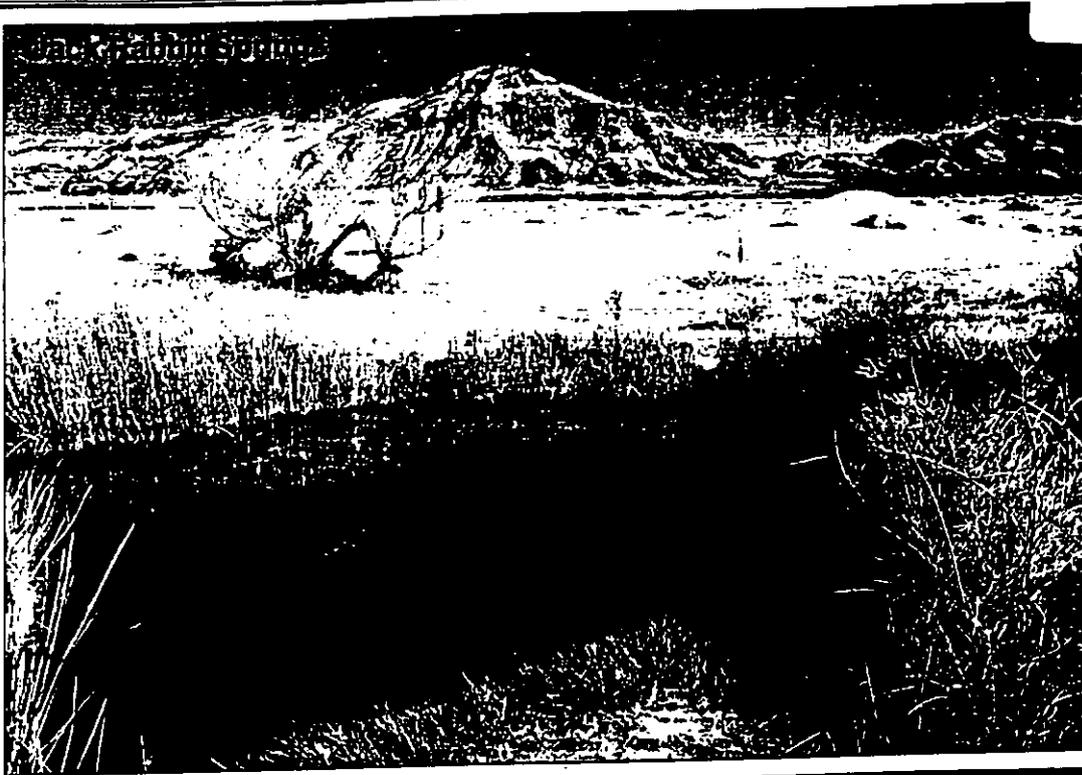
Unlike weapons testing at the Nevada Test Site or fighter pilot training at the Nellis Air Force Range, the DOE proposals for Yucca Mountain are not for the purpose of national security or national defense, but as a means to meet its responsibility to accept spent nuclear fuel generated by commercial nuclear utilities under circumstances in which no other site is politically acceptable.

Commercial nuclear utilities, in turn, advocate transfer to Yucca Mountain in order to avoid the expense of extended on-site storage; and to clear their sites for decommissioning and future economic development. State utility commissions generally support the transfer for similar reasons—to avoid additional expense for their ratepayers,<sup>11</sup> and to open the economic future for communities in the vicinity of commercial reactor sites. Other DOE agencies support the transfer in order reduce the costs of temporary storage at defense sites, and to make such sites more attractive for alternative future uses.

The implementation of proposals for such reasons cannot justify sacrifice or threat to the health, safety, welfare and economic future of the single local community to which the nation's highly radioactive wastes would be transferred. This single community has a right to full protection and assurance of its health and safety, equity in transportation mode-route selection, and an economic future unencumbered by the stigma of providing the nation's disposal site for such wastes.

<sup>11</sup> The fee is one mill per kilowatt-hour (kwh) of nuclear power sold, which is about 5.9 percent of the value of electricity sold in 1970 (1.7 cents per kwh), about 2.1 percent of the value of electricity sold in 1980 (4.7 cents per kwh, and about 1.4 percent of the value of electricity sold in 1996 (6.9 cents per kwh). See "Statistical Abstract of the US: 1998," Table 970). Other potential expenses include the cost of extended interim storage of spent nuclear fuel, and additional costs of nuclear plant decommissioning.

The motivations  
for transfer to  
Yucca Mountain  
do not justify  
threatened  
sacrifice in the  
site county



18. A Site County Perspective: Most local residents perceive the Nye County desert differently than do visitors from other regions of the country. Though trees are few, the landscapes are expansive and beautiful. Summers are hot and dry, much like Phoenix and Tucson. Water resources are limited and require effective management, but are sufficient to support substantial development. While existing communities such as Tonopah and Beatty struggle to overcome the legacies of the past, there are exciting opportunities to build new communities based on emerging economic forces. Though urban infrastructure is limited, new development does not need to repeat or remedy mistakes of the past.

This section outlines proposed protections for the site county—an agenda for negotiation with the federal government, should Congress approve the expected DOE recommendation to transfer the nation's highly radioactive wastes to Yucca Mountain. Any such approval should include a Congressional directive for the negotiations, which should be conducted and agreed by each party prior to the issuance of a construction authorization by the NRC. The protections apply to the "implementation" of a repository<sup>12</sup> at Yucca Mountain - that is, any activity conducted under the NRC license related to the construction, operation, monitoring, or closure of a geologic repository at Yucca Mountain.

## PROTECTIONS OF HEALTH, SAFETY AND THE ENVIRONMENT

The following proposed protections would enable the site county to meet its statutory obligations to ensure the health and safety of its current and future residents. Full implementation would also provide a site county role in federal long-term stewardship of its facilities in the site county, and a concrete demonstration that the federal government does not intend to transfer its highly radioactive wastes to a site where they would be "out of sight and out of mind."

### 1. *Ongoing Independent Oversight*

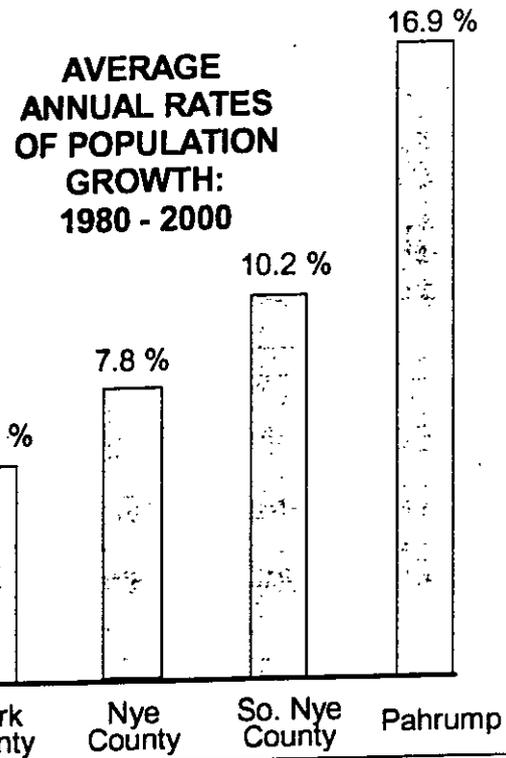
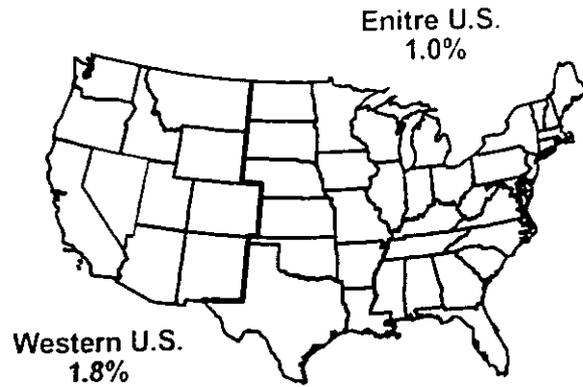
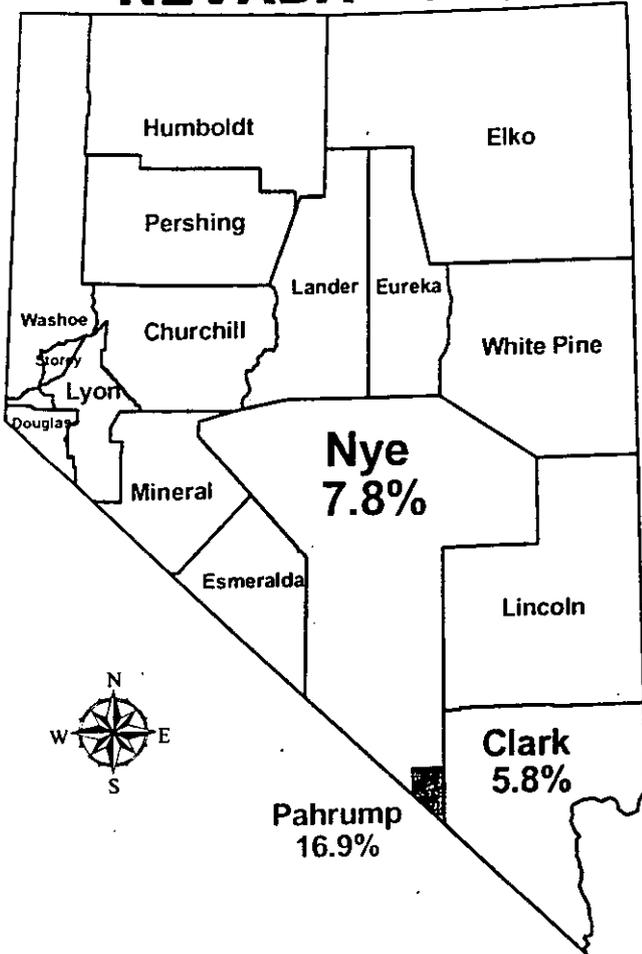
For the site county, the oversight provisions of Section 116(4)(c) of the Nuclear Waste Policy Act should be extended past the granting of a license to include the life of an interim or permanent storage facility. Site county oversight should extend to all DOE activities (transportation, storage and emplacement) associated with its proposals at Yucca Mountain, and to the cumulative effects of other past and ongoing DOE activity in the site county. The operations costs of such oversight should be guaranteed through an endowment or trust established at the time of licensing.

**Rationale:** Under state statutes the Nye County Board of Commissioners has the duty to protect the health, safety and welfare of Nye County residents and visitors, current and future. No other entity has this specific duty. Due in part to federal ownership

<sup>12</sup> This section does not address the contingency that Yucca Mountain may be designated for interim as well as permanent storage of the nation's highly radioactive wastes. The site county reserves the right to negotiated different or additional conditions regarding highly radioactive wastes transferred to Yucca Mountain but not promptly loaded into waste packages intended for permanent disposal.

Independent oversight is required to enable local officials to protect health, safety, and welfare...

# NEVADA - 4.3%



19. Is Yucca Mountain "Remote?" : The DOE's 1998 "Viability Assessment" posed the question, "Why Yucca Mountain?", and provided as its first response, "Yucca Mountain is remote from population centers." (Overview, page 10). This characterization by a federal agency requires a response from the site county. First, if Yucca Mountain seems "remote" to those seeking a site for the nation's highly radioactive wastes, this quality is largely attributable to the actions of the federal government - in particular, the withdrawal in 1940 of 2.7 million acres north and east of U.S. Highway 95 for exclusive federal purposes. Second, however, remote Yucca Mountain may have seemed when the NWPA was passed in 1982, it is much less so today. Over the past two decades, the population of southern Nye County has grown more rapidly than that of Clark County, or the State of Nevada. Third, to characterize Yucca Mountain as remote in 1998 suggests that it will remain so in the future. This is not the case. Yucca Mountain is adjacent to the major transportation link between Las Vegas and Reno, and only 85 miles from the center of the nation's fastest growing metropolitan area. The perennial yield of groundwater systems could support a community of 100,000 in the area south and west of federal withdrawn lands. Finally, to claim remoteness as a basis for siting suggests a federal inclination to transfer unwanted materials to a location "out of sight and out of mind."

61

of 97.8 percent of Nye County land, Nye County does not have the revenue base required to support a vigorous oversight program. Therefore, federal funding is required. This funding should include oversight of the cumulative effects of other DOE activity in the site county (past and ongoing). It should be understood that the purpose of such oversight, in part, is to provide the site county with the capability to provide pre-decisional input on all aspects of future DOE activity in the site county, and that such input will receive serious consideration in subsequent decisions.

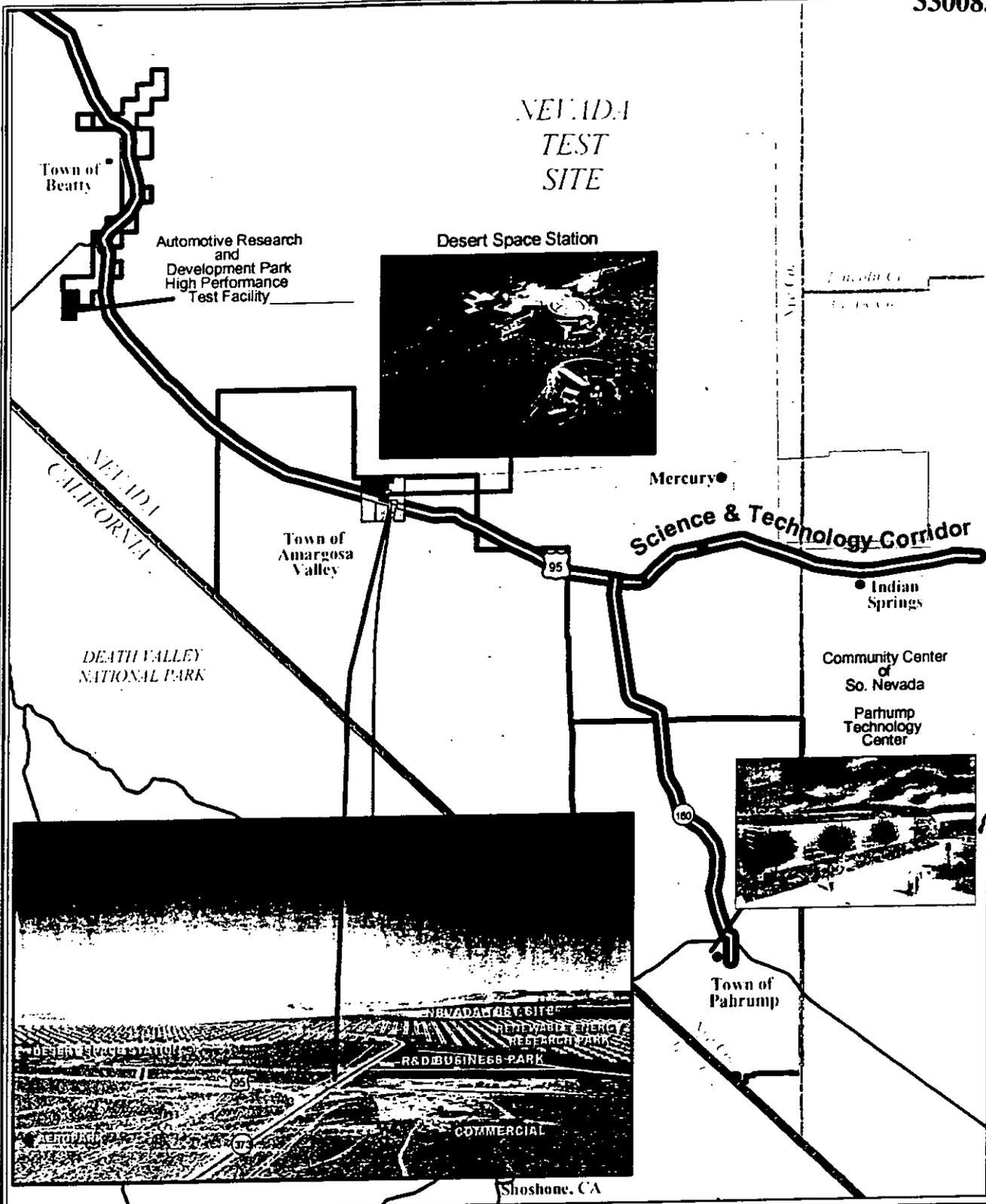
## **2. Expanded Independent Monitoring Program**

With its onsite representative authority and its Early Warning Drilling and related programs, Nye County has established during site characterization the capacity to conduct professional and independent monitoring of the Yucca Mountain Project. Should the federal government decide to transfer the nation's highly radioactive wastes to Yucca Mountain, independent monitoring conducted by the site county should be expanded and maintained. Activities should include environmental monitoring both on-site and off-site, monitoring of radiological health of workers and residents, and socioeconomic monitoring of the project's economic and demographic effects in the site county. Monitoring data may be collected by the DOE or by the site county monitoring program, as appropriate, but in either case such data will be shared for review and assessment. Assessment of monitoring data should be independently conducted. The site county may conduct its monitoring program using its own staff or contractors (universities, institutes or private firms), as it finds effective and appropriate. The site county monitoring program will be headquartered in an appropriately equipped facility located in the site county.

**Rationale:** During program implementation, the DOE would presumably be required by the Nuclear Regulatory Commission to collect certain data for use in preliminary assessment of repository performance in the isolation of highly radioactive wastes. However, NRC authority does not equally extend to other important dimensions of the federal government's waste management program -- e.g. transportation, local economic effects, and cumulative effects of DOE activity. Furthermore, the site county must not be forced to rely exclusively on federal agencies that have their own agendas and an uneven record of responsiveness to local concerns.

Independent  
monitoring and  
assessment is  
required to  
inform local  
oversight





20. The Science and Technology Corridor. Particularly since the Cold War ended in 1992, Nye County has worked to identify a non-radiological economic future for its rural communities along the U.S. Highway 95 corridor. This future is keyed to emerging technologies, the dramatic growth in southern Nevada, the U.S. Highway 95 corridor linking Nevada's two metropolitan centers, and the special resources of the area: space, solar energy, and groundwater. Full realization will require infrastructure investment and a long-term view. But, over the coming decades, it could provide a new economy for areas of central Nevada that were left behind in the 1980s and 1990s, and relief from heavy dependence on federal activities unwanted elsewhere.

Therefore: a) The onsite representation authority of the site county should be extended beyond site characterization through implementation; b) The site county should have reliable funding to conduct monitoring of environmental, health, transportation and socioeconomic effects; c) Data collection efforts should be coordinated with those of the relevant federal and state agencies; and d) Evaluation of the implications of monitoring data should be independently conducted. Conclusions should be addressed in ongoing oversight of implementation decisions.

### 3. *Radiological Exposure and Health*

The local jurisdiction that has provided the nation's sites for nuclear weapons testing, disposal of low-level wastes from the DOE complex, and storage of large volumes of transuranic wastes should have the capability to monitor the radiological exposure and health of residents. This capability should be established before the DOE begins transfer of the nation's highly radioactive wastes to this same county. Radiological exposure and health monitoring should be conducted as part of a broader site county monitoring program, based at a well-equipped facility located in the site county. The federal government should provide the facility, assure the funding of ongoing monitoring for local residents, and perhaps employ the program for non-routine monitoring of DOE workers at the Yucca Mountain Project and at NTS. The program may be modeled on the "Lie Down and Be Counted" program conducted by the Carlsbad Environmental Monitoring and Research Center, though other instructive models have been developed -- one by the site county.

**Rationale:** DOE proposals for Yucca Mountain involve the transfer of 18 billion curies of radioactivity into the same jurisdiction which has provided the nation's sites for nuclear weapons testing and for offsite disposal of low-level defense waste. No local government has suffered comparable radiological impositions. Special federal efforts are required to assess the radiological health of past, present, and future residents.

To transfer unwanted material "out-of-sight and out-of-mind" is insufficient

Radiological health monitoring of residents and workers should be locally managed and conducted.

Full site-county  
capability to  
respond to  
potential  
radiological  
accidents and  
incidents



A DOE Center  
for improved  
management and  
reuse of highly  
radioactive  
waste helps  
demonstrate  
that YMP is not  
just a dump

#### 4. *Radiological Emergency Response and Medical Services*

The site county should be fully capable (staffed, trained, and equipped) to meet its statutory duty to provide radiological emergency management, response, and medical services along any transportation route within its jurisdiction which is a candidate for shipment of highly radioactive wastes to Yucca Mountain. Based on the mode-route designations for such shipments, DOE should negotiate with the site county to ensure that radiological emergency response and medical services are fully capable prior to waste acceptance. The DOE will agree that this capability shall be certified by the Nye County Commission, based on the advice of the Nye County Emergency Management officer prior to the first shipment of such materials, and annually thereafter.

**Rationale:** The site county is not now adequately staffed, trained or equipped to respond to potential radiological accidents along 317 miles of two-lane rural public highway which DOE could use for shipments of highly radioactive wastes within its jurisdiction. DOE's recent rerouting of low-level waste shipments to NTS transferred the impacts of such shipments from 7 miles of 4-lane highway in the site county to 317 miles of two-lane roads affecting every site county community. The revenue base of the site county, 97.8 percent of which is federally managed land, cannot support the development and maintenance of fully capable radiological emergency response and medical services. This development and maintenance should be supported by the proponent agency, and local elected officials should be responsible to certify its adequacy to meet its duty under state statutes.

#### 5. *A DOE Center For Radioactive Waste Management R&D*

Should the federal government decide to locate facilities for storage of high-level radioactive wastes in Nye County, it should also establish and fund a center to investigate a) alternative uses for spent nuclear fuel, b) waste reduction technologies, c) contaminated materials recycling, d) robotics handling of radioactive materials, e) human factors in high-level waste transportation and management, and f) options for removing high-level and other radioactive wastes from Nevada and the site county, g) transmutation, h) enhanced engineering barrier systems, and i) cask design and fabrication technologies. The Center and not less than 75 percent of its activity should be located in the site county, at a location selected in coordination with the site county.

This Center should be DOE's flagship facility for the above lines of inquiry. Some such inquiry is currently underway, but is distributed among the DOE's traditional flagship facilities, rather than purposefully coordinated in the site county designated to receive the nation's highly radioactive wastes. The Center's annual funding should reflect a judgement that its mission is of greater importance than that of the DOE's current "National Spent Nuclear Fuel Program," whose exclusive focus is to get 2,500 metric tons of DOE spent nuclear fuel from their current storage sites to the repository.

**Rationale:** A Congressional decision to transfer the nation's highly radioactive wastes to a single community should be accompanied by a decision to conduct serious and coordinated investigation of alternative or improved methods for managing, using and/or disposing of such materials. The appropriate location for such a center is in the same community to which the nation's highly radioactive wastes are proposed for transfer. Congress should require a coordinated inquiry into such topics, and require that such inquiries be conducted at a prestigious center located in its selected site county. These steps are required as a concrete demonstration that the federal government does not intend to transfer its highly radioactive wastes to a site where they may be "out of sight and out of mind."

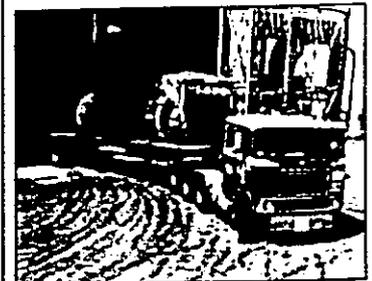
## **EQUITY IN TRANSPORTATION MODE-ROUTE SELECTION AND OPERATIONS**

The following proposed protections would help ensure that prospective shipments of highly radioactive wastes from 80 sites in 35 states use modes, routes, and operational practices in the site county inherently as or more safe as those used cross-country.

### **6. Rail Transport of Highly Radioactive Wastes**

All shipments of spent nuclear fuel or high-level waste to interim or permanent storage facilities in the site county should be by rail, using routes which avoid site county communities and public mainline highways, and which are selected in consultation with the Nye County Commission.

No shipment of highly radioactive waste to Yucca Mountain should use the two-lane rural public highways of the site county.



To ship across the country on interstate highways, but on two-lane rural roads in the site county, would be grossly inequitable

"Stove-piped" DOE agencies should identify the least-risk plan for two major radiological transport campaigns to a single destination county

**Rationale:** The least-risk option for cross-country shipment of the nation's high-level waste would use dedicated trains (escorted, with special equipment to avoid derailment) on rail routes avoiding public highways. The least-risk option nationwide should also apply in the destination county. To select a lesser option for the convenience of federal agencies is unjustifiably inequitable. The Nye County Commission should expect to be fully consulted regarding the selection and design of a new rail route within the County.

Shipments on two-lane rural highways pose special risks of radiological exposure, accident and stigma effects for the communities along and the users of such routes. These risks for the maximally exposed individual or the property bordering the rights-of-way are significantly greater than along interstate highways or major cross-country rail routes. Two-lane rural highways are inherently less safe than interstate-standard highways. A federally sponsored transportation campaign that would ship cross-country by rail or on four to six lane interstate highways, and then, for convenience, ship on two-lane rural roads in the destination county is unjustifiably inequitable.

#### **7. *Integrated Plan For Radioactive Waste Transport***

If the federal government decides to transfer the nation's highly radioactive wastes to Yucca Mountain, and at least 7 years before the first shipment of such material into the site county, DOE should develop a comprehensive plan and assessment of the mode-route options for shipment into the site county and state. This assessment should not be limited by currently-available mode-route options or by currently-assumed institutional barriers. It should consider prospective shipment of low-level waste from the DOE complex as well as highly radioactive wastes from commercial utilities and defense sites. It should identify the safety of mode-route options on a nationwide basis, and the shift of risk of alternative mode-route options onto the site county and state. It should evaluate construction and operations costs on a life-cycle basis. The study should identify the safest mode-route option nationwide and the least-cost option, but these should not determine selection if they are grossly inequitable to the site county or state. A key objective should be to minimize the transfer of radiological transportation risks - in not but two major DOE shipment campaigns - onto a single selected destination county.

**Rationale:** In the site county DOE should not use transportation modes and routes which are *inherently less safe* than those used in transport cross-country. The federal government should not limit transportation mode-route options based on its own siting of disposal facilities in locations currently served only by hazardous two-lane highways through rural communities.

## PROTECTIONS OF COMMUNITY ECONOMIC FUTURE

The following proposed protections are designed to help ensure that continued federal radiological imposition in the site county does not thwart its economic future, including an economic future unencumbered by the stigma of providing the nation's disposal sites for low- and high-level radioactive wastes.

### 8. *Revision of DOE Management Practices in Nevada*

Should the federal government decide to locate facilities for storage of high-level radioactive wastes in Nye County, it should also take specific steps to ensure that Nye County residents are prepared for and have full access to the associated employment opportunities. These steps include: a) funding of scientific, technical and vocational education at local or federal facilities in the site county, b) the assignment of YMP professional and managerial employees to duty stations in the site county, c) the location of hiring and on-the-job training facilities and programs in the site county, d) contract provisions placing the burden on those who receive funding from DOE to explain why they should not locate facilities and activities in the site county. Congress should require DOE to negotiate with the site county regarding the specific steps to be taken and the coordination of those steps with site county development plans.

**Rationale:** The DOE has a long history of using its Nye County facilities for remote operations; the associated economic opportunity has been located (often with subsidy) elsewhere in Nevada. As one indicator, less than one-half of one percent of the purchases made by the DOE's Yucca Mountain Site Characterization Office for FY '93 through FY '98 had a destination of payment in the site county. Perhaps understandable during Cold War nuclear weapons testing, this management pattern has the effect of sacrificing economic opportunity in the site county. The pattern should be reversed.

If future DOE activity in the site county is safe, the associated workforce should be stationed in the site county and contribute to its communities

Federal land management should support, not frustrate, community and revenue base development in the site county

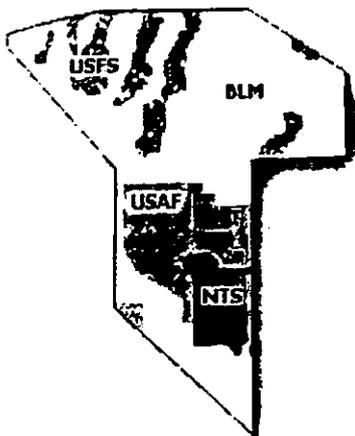
### 9. *Transfer Land for Sustainable Community Development*

Congress should transfer federal land to the site county for its use in economic and community development. These transfers should be identified in consultation with the Nye County Commission, and will double private land in the site county, from 1.98 percent to 4.00 percent of the county's total land area. The transfers should total 2.1 percent of current federal land in the site county, and will be implemented over a five-year period.

**Rationale:** The DOE has repeatedly described its intended site county as a remote area which is expected to remain sparsely populated. The DOE has not acknowledged, however, that federal action is one key reason why portions of the county is unpopulated as they are. Nor has it acknowledged that, despite federal action, the southern portion of the site county has grown very rapidly since the NWPA was passed in 1982. Nor has the DOE recognized the innovative plans developed by the site county for a long-term economic future not defined by its designation as the disposal site for the nation's highly radioactive wastes. In designating Yucca Mountain for storage of the nation's high-level radioactive waste, Congress should either provide land needed for the county to pursue an economic future unencumbered by the federal imposition, or declare the sacrifice of the economic future of the county's non-federal land and make provisions for appropriate compensation.

### 10. *Designations to Encourage Investment*

Congress should make several designations to encourage private investment compatible with the site county's envisioned future for the U.S. Highway 95 corridor bordering lands withdrawn for exclusive federal purposes a half century ago. The designations should encourage investment in non-nuclear energy (e.g. solar, geothermal, and wind) generation and transmission, in communications technologies (e.g. fiber optic transmission lines) beneficial to dispersed rural communities, and/or in utility systems for more efficient future use of water, land and power in rural community development. In combination with the DOE Management Plan and the Federal Land Transfer Plan (see protections #8 and #9 above), the designations would assist the site county to develop an economic future not determined or dominated by its designation as the repository for the nation's highly radioactive wastes.



**Rationale:** Federal land withdrawals and impositions have severely affected the development of the site county over the past half-century, and could continue such effects into the indefinite future. Despite past federal impositions, the site county has resources (water, transportation, land, and energy) for development of an attractive non-radiological economic and community future - even as, or especially as, the federal government makes extraordinary additional radioactive impositions. However, the site county requires supportive, coordinated federal actions in order to overcome the legacy of the past, and to counter the threats of the future.

The federal  
government  
should  
encourage the  
site county's  
non-radiological  
future

**Attachment A. Effects of the YMP as Assessed by  
Nye County and the Draft EIS**

Effects (See Section 2)	YMP DEIS Considered ?	DEIS Impact Assessment	Site County Perspective
<b>2.1 Transportation</b>			
Accident risk	Yes	Very low	Two-lane roads
Radiological exposure	Yes	Very low	Rural communities
Radiological EM/ER capability	No	Not addressed	Not prepared
Revenue base for EM/ER	No	Not addressed	Inadequate
Mode-route uncertainty	No	Not addressed	Affects co. future
Politicized decision process	No	Not addressed	Unacceptable
<b>2.2 Oversight</b>			
Continue in implementation?	No	Not addressed	Oversight necessary
Objections considered?	No	Not addressed	Local role required
Local role in health, safety	No	Not addressed	Local responsibility
Monitoring info available?	No	Not addressed	Independent local info
<b>2.3 Groundwater Impacts</b>			
Future contamination?	Yes	Very low	Fast pathways
Potential combo with NTS	No	Not addressed	Cumulative assessment
Effects on prop value, economic development	No	Not addressed	A critical impact
Limited fed response	No	Not addressed	Innovative finance
<b>2.4 70-100 Implementation</b>			
Irreversible siting decision	No	Not addressed	Very likely
Contingencies and funding	No	Not addressed	Probable problems
Tradeoffs of safety, equity	No	Not addressed	Probable tradeoffs
Reliability of fed managers	No	Not addressed	Legitimate concern
Effects on local aspirations	No	Not addressed	Legitimate concern
<b>2.5 DOE Project Management in NV</b>			
Traditional use of Nye Co. sites	No	Not addressed	No longer justified
Nye sites, flagship in NV	No	Not addressed	Required for future
Site county as negotiation partner	No	Not addressed	Required for future
<b>2.6 Inequity</b>			
Single recipient from 80 sites	No	Not addressed	Federalism implications
HLW + weapons + DOE LLW	No	Not addressed	Cumulative impacts
Transportation inherently less safe	No	Not addressed	Environ justice

Note: Column 1 refers to the 26 categories of YMP effects described in Section 2  
 Column 2 indicates which effects were addressed in the YMP DEIS, and which were not.  
 Column 3 characterizes the YMP DEIS assessment of selected effects.  
 Column 4 characterizes the site county perspective, as discussed in Section 2.