

EXECUTIVE SUMMARY

The proposed Yucca Mountain high-level nuclear waste repository program has the potential to wreak economic, social, and environmental devastation on at least 44 states, including Nevada, hundreds of major cities, and thousands of communities across the country through which spent nuclear fuel (SNF) and high-level radioactive waste (HLW) must travel. This inescapable conclusion results from over 15 years of intensive research and oversight conducted by the State of Nevada and independent scientists studying the impacts of this major, first-of-a-kind federal program. The findings and conclusions of this research are extensively documented in the subsequent chapters of this report.

The enormous and pervasive potential impacts to the State of Nevada are only part of the problem. There will be massive additional impacts inflicted on at least 43 states, hundreds of major cities, and thousands of communities nationwide as a result of the tens of thousands of shipments of highly radioactive waste that are an inseparable and dominant component of the federal government's repository program. The fact that the Secretary of Energy recommends that Yucca Mountain be developed as a repository without full disclosure of these transportation impacts and without having assessed the implications of the program for the nation as a whole is unacceptable and a reason, of itself, for the President to reject outright the Secretary's recommendation.

What began in 1983 as a noble experiment that promised to place science ahead of politics, and fairness, equity, and openness above parochialism has degenerated into a technical and ethical quagmire, where facts are routinely twisted to serve predetermined ends and where "might makes right" has replaced "consultation, concurrence, and cooperation" as the guiding principle for the program. The shoddy and politically driven science, the heavy-handed federal approach, the constant changing of the rules to negate disqualifying conditions and "inconvenient" findings, and the deliberate avoidance of responsibility for considering socioeconomic impacts have created an atmosphere of severe distrust, where the already significant impacts associated with the nuclear nature of the program are further exacerbated and amplified. The result is a massive suite of negative impacts, national in scope, inextricably linked to the Yucca Mountain program, and unprecedented in the history of federal government domestic projects.

National Transportation Impacts: On the Road to Disaster?

The transportation of spent nuclear fuel and high-level radioactive waste to a Yucca Mountain repository would require an effort of truly epic proportions. More dangerous and highly radioactive waste would be shipped in the first full year of repository operations than has been transported in the entire five-decade history of spent fuel shipments in the United States. The effort would require over 96,000 truck shipments over four decades.

Almost every major east-west interstate highway and mainline railroad in the country would experience SNF/HLW shipments as waste is moved from reactors and other sites in 39 states. In all, 44 states would be directly impacted, including many of the major metropolitan areas in the nation, at least 109 cities with populations exceeding 100,000, hundreds of smaller cities, and thousands of communities. Highway shipments alone will impact at least 703 counties with a combined population of 123 million people.

This unique, never-before-attempted radioactive materials transportation effort would bring with it a constellation of hazards and risks, including potentially serious economic damage and property value losses in cities and communities along shipping routes, increased risks of terrorism and sabotage from shipments that represent numerous mobile targets within some of the country's most populous and vulnerable metropolitan areas, and an increased risk of radiation exposure to workers and the public, not only from potential accidents, but also from routine contact with tens of thousands of radioactive waste shipments on the country's highways and railroads over an extended period of time.

Truck shipments to Yucca Mountain would be a daily occurrence in major metropolitan areas like Atlanta, Nashville, Cleveland, and San Bernardino. Chicago could experience a truck shipment every 15 hours; St. Louis, Kansas City, and Denver, every 13 hours; Des Moines and Omaha, every 10 hours; and Salt Lake City, every 7 hours.

Rail shipments to Yucca Mountain would be a daily occurrence in Nevada, Utah, Wyoming, Nebraska, Colorado, and Illinois. Every other day, rail shipments would cross Iowa, Missouri, Kansas, and Indiana. There would be at least one rail shipment per week through Alabama, Arizona, Georgia, Idaho, Kentucky, Ohio, New York, Pennsylvania, and South Carolina.

Routine radiation exposures from shipping casks pose a clear health threat to certain transportation workers. Safety inspectors, truck drivers, and rail crews could receive cumulative doses large enough to increase their risk of cancer death by up to 15 percent, and their risk of other serious health effects, including genetic damage to future generations, by 50 percent or more. DOE proposes to control these exposures and risks by limiting work hours and doses.

Routine radiation from shipping casks poses a potential health threat to certain members of the public. Service station attendants could receive 100-1,000 millirem (mrem) doses per year. Motorists could receive 40 mrem during a traffic gridlock incident. Residents near certain routes in Nevada could receive 5-45 mrem per year from passing casks. Such exposures increase the risk of certain health effects, such as mental retardation in unborn children.

Routine radiation from passing casks would deliver small radiation doses to members of the public within one-half mile of highway and rail routes. Nationally, 7 - 11 million people reside within one-half mile of a truck or rail route. Even though these dose levels are well below the established thresholds for cancer and other health effects, DOE

has made no effort to analyze these effects, to inform the public of their existence, nor to evaluate their socioeconomic impacts. On this last point, research shows that the mere presence of sustained numbers of such shipments through communities can devalue property. For example, in a jury award upheld by the New Mexico Supreme Court, the lost value of a property adjacent to the Waste Isolation Pilot Plant transportation route was fixed at 4.75 percent, even before waste shipments began. Applied nationally, the economic impacts of such devaluation would be a massive burden on unwilling and unwitting property owners.

A successful terrorist attack on a truck cask involving release of radioactive materials in an urban area could cause 6-165 latent cancer fatalities and \$3.1-20.9 billion in cleanup costs. Incidents of greater severity are credible.

Taken together, these national transportation impacts of the Yucca Mountain program, neither examined or even acknowledged by DOE, represent an unacceptable and unnecessary level of risk.

Program Costs: A Financial Albatross for the American Taxpayer

Because of the steadily escalating costs of the Yucca Mountain program, it is expected that the total life cycle cost of the project would leave the federal budget, and by extension the American taxpayer, with an unfunded liability of major proportions, even by federal accounting standards. Current estimates are that the Nuclear Waste Fund, which was originally intended to pay the largest share of repository program costs through the collection of fees on nuclear-generated electricity, would generate, at most, approximately \$41 billion. This estimate is generally considered to be extremely optimistic, given the uncertainties surrounding the operational capabilities and lifetimes of existing nuclear power reactors and the future prospects for any new nuclear plants.

Most current estimates by DOE and, independently, by the State of Nevada have placed the total cost of the repository program between \$54 (State) to \$59 billion (DOE). However, given the continual escalation in program costs over the past five years (in 1998, DOE estimated the total life cycle system cost at just over \$28 billion), the actual cost of the program would likely be considerably higher, with informal estimates now approaching as much as \$75 billion.

The Yucca Mountain program would mean an overall deficit for the federal budget in the range of \$18 to \$35 billion or more. This shortfall would occur at a time when the government's ability to assess utility companies additional fees based on nuclear electricity generation (as is currently the case) would have greatly diminished, if not disappeared altogether. If continued, it is inevitable that Yucca Mountain would become a major net drain on the federal budget and a fiscal liability of enormous proportions. These figures do not include the unreimbursed costs to citizens, communities, property owners, and businesses for their losses.

This situation is further compounded by the fact that, in the event of a serious SNF or HLW transportation accident, the nation will incur enormous costs in the form of negative impacts on property values, damages to ongoing economic activities, foregone opportunity costs, and the exploitation of vulnerable individuals and communities who will be directly affected. These costs would be greater than the entire repository program costs by a factor of ten or more.

Impacts to Nevada's Economy

A radioactive waste accident in or near Las Vegas would almost inevitably produce significant visitor losses. Even without such an accident, the mere presence of a repository, less than 90 miles from the State's major economic center, would have a negative effect on the economy of the region and the State.

Given the unique reliance of the Nevada economy on the State's ability to attract tens of millions of tourists and visitors annually, any impacts that reduce the number of visitors, especially to southern Nevada, would have major consequences for the State's economy. Consequently, the most serious and possibly catastrophic economic risk for Nevada stemming directly from the Yucca Mountain project is the potential for stigma impacts on the tourist and visitor industry. Such impacts would produce significant losses to an economy dominated by visitor-based revenues. Dozens of studies spanning two decades show that populations important to Nevada's economic well being are highly sensitive to the radioactive risks associated with a repository and spent fuel/HLW transportation. These studies have interviewed thousands of residents, visitors and tourists, convention planners and hundreds of convention attendees, professional investors, loan officers, and real estate appraisers. Studies have measured actual behaviors of people who hold positive and negative images of places, like Las Vegas, and the considered opinions of people in response to scenarios ranging from a successful, no adverse event case to radiation and non-radiation accidents. In every case and condition, the studies recorded responses that threaten the attractiveness of the State as a place to visit, move to, or invest in. In every case, the responses pointed to major socioeconomic impacts.

A radioactive waste program by itself would produce significant adverse economic impacts. An accident or incident that caused Las Vegas to become even moderately associated with radioactive imagery would have major negative economic impacts for the area's visitor economy, in-migration, and economic development. Estimates between 5 and 30 percent or larger reductions in key economic sectors are consistent with the empirical evidence gathered.

Annual losses to the Las Vegas and Nevada economy would be expected to reach \$39 billion or more in the event of a nuclear waste accident. Even without an accident, the Nevada economy stands to lose upwards of \$5.5 billion annually as a result of the stigmatizing effects of the repository and high-level nuclear waste shipments through the State.

Reductions in Property Values Along Transportation Routes

State of Nevada and Clark County researchers have found that the value of property, especially along potential nuclear waste shipping routes in Clark, Washoe, and Elko counties, stands to be dramatically affected should the Yucca Mountain project go forward. Even under the most benign conditions (i.e., where there are no projected radioactive waste accidents), significant property value losses are likely along shipping corridors, as well as at distances up to three miles from the actual highway or rail route.

The findings indicate that an accident, even without a release of radioactive waste, would significantly affect property values. If a major accident involving radiological contamination were to occur, property value losses would be devastating.

These studies found that residential property values along nuclear waste shipping routes in Clark County alone could decline an average of 3.5% even without a major accident or incident, due to the irreducible risks from a designated HLW shipping route. In the event of an accident, losses in real market value could be between \$5.6 billion and \$8.8 billion. In Washoe and Elko Counties, the estimated residential property value losses are between \$1.9 billion and \$2.2 billion and between \$110 million and \$129 million, respectively. Percentage declines of comparable magnitudes can be expected in counties and communities all along Yucca Mountain transportation routes, with total property value impacts statewide totaling in the tens of billions of dollars.

Other Impacts to Nevada's Economy

In addition to negatively impacting Nevada's visitor economy and property values along transportation routes, the Yucca Mountain program would also affect the State's economy in other ways. Even the so-called beneficial effects of the program (i.e., jobs, program spending, etc.) would have negative overall impacts on Nevada's economy. This is because, under the State's tax structure, repository-related increases in population cost the State and local governments more for providing public services than they provide in revenues, a difference of between \$670 and \$1,000 per person, per year (as estimated in 1990). If these very conservative figures are applied to the estimated Yucca Mountain-related peak population increase of 3,716 (per DOE's Draft Yucca Mountain Environmental Impact Statement), the project, absent any other impacts, would cost the State and local jurisdictions between \$2.5 million and \$3.7 million annually. This is a consequence of the "standard effects" of the project and is separate from and in addition to any stigma-induced economic effects that may occur during the life of the program.

This finding has important implications with regard to the program's potential to result in severe economic consequences to Nevada. If, as State research has shown likely, the Yucca Mountain program is responsible for the loss of economic activities linked to the visitor sector (i.e., conventions, visitors and tourists, new visitor-related projects such as hotels and casinos), not only would the federal program act as a net drain on State and local revenues, but even the so-called "positive" aspects of this large, multi-

year federal program would result in negative overall impacts to the State. In reality, there are *no* positive fiscal effects from this project.

Impacts to State of Nevada Agencies and Local Public Safety Agencies

The direct costs of preparing for and dealing with the project and the massive nuclear waste shipping campaign that would accompany it would be staggering for State agencies and for Nevada's General Fund. Estimates for start-up costs and just the first year of operations exceed \$657 million. The total costs to agencies over the forty-year life of the Yucca Mountain shipping campaign would be several billion dollars.

Local government public safety agencies would also bear the brunt of fiscal impacts. In Clark County alone, the incremental costs of preparing for waste shipments, excluding operational expenses associated with responding to the actual shipments themselves, are estimated at \$360 million. Statewide, public safety agencies costs associated with the federal program would likely total several billion dollars over the life of the shipping campaign. These estimates do not include adequately staffing, training, and equipping medical and hospital personnel to deal with radiological emergencies. Such costs would add considerably to the overall estimate.

Impacts to Nevada Local Governments

At least 13 of Nevada's counties would be directly impacted by Yucca Mountain construction and operation activities, by the performance of the repository system over thousands of years, and/or by the massive and unprecedented SNF and HLW shipping campaign. These impacts would directly affect public health, economic stability, community development, public revenues, essential community services, and damage to the state's system of governance. Significantly impacted localities include Nevada's major population centers, the Las Vegas metropolitan area and the Reno-Sparks metro area, as well as rural counties and communities throughout the State.

The site county - Nye County - would be uniquely affected by the Yucca Mountain Project. Not only is it at "the end of the funnel" for the massive prospective waste shipment campaign, but the Yucca Mountain Project threatens this growing county's efforts to develop and sustain a viable economic and revenue base in the aftermath of 40 years of nuclear weapons testing on DOE's adjacent Nevada Test Site (NTS).

Development in rural Nevada counties, such as that taking place in southern Nye County, depends upon the attractiveness of the State and its communities. Nuclear waste images would diminish the appeal of Nevada's rural communities for business investment, retirement, and job in-migration.

The magnitude of potential economic and fiscal impacts, however, is greatest in Clark County, the state's major metropolitan area, located at the convergence point for

default highway routes and on the corridor for one of the state's two mainline railroads. Over 80% of the state's dominant visitor-gaming industry is located in Clark County and concentrated in areas adjacent to prospective highway or rail shipment routes. The Las Vegas visitor-gaming industry is particularly vulnerable to stigma effects linked to the repository program and the nuclear materials transportation associated with it. The same stigma impact could also negatively affect economic development, migration, and investment in all of southern Nevada.

Rural communities in central Nevada are particularly vulnerable to the effects of an unprecedented shipment campaign for the nation's highly radioactive wastes, the modes and routes for which are uncertain. Typically in these counties, the economies are fragile, the service systems (particularly emergency and medical response services) are very limited, the road systems are inadequate for such uses, and residential and community activity is clustered closely along the prospective nuclear waste routes.

Even counties that are not formally designated as "affected units of government" under the Nuclear Waste Policy Act would be negatively affected by the prospective shipment campaign. Of particular note are Washoe County, the state's second largest metro area and visitor-gaming center, and Elko County, the urban center of northeastern Nevada. Both communities are developed astride an interstate highway and mainline railroad that could be used for high-level waste shipment. Washoe and Elko counties have estimated property value losses at \$1.9-\$2.2 billion and \$109-\$129 million, respectively. Other counties and cities along the routes of Interstate 80 and the Union Pacific mainline would experience comparable decreases in property values due to a Yucca Mountain shipping campaign.

Nevada's state-local revenue structure includes critical sales tax and other revenues that are distributed among localities by formula. Thus, stigma-related damage to the state's metropolitan economies (particularly the visitor-gaming economy of Clark County) would have direct fiscal consequences for local governments across the state, many of which are already in fiscal stress. Visitor spending produces 19% of the taxes for local jurisdictions, currently about \$1.3 billion per year. A 7% decline in visitor spending, projected for the no-accident scenarios, would reduce local government tax revenues by \$91 million annually.

Given the extreme differences among Nevada's local jurisdictions (in economic base, revenue resources, population and growth, federal land presence, political influence, etc.), and the highly differentiated consequences of the Yucca Mountain Project among the state's localities, the Yucca Mountain site characterization process already has caused conflict among localities and in state-local relations and produced damaging impacts on the system for governance within the State. These impacts would increase if the Yucca Mountain project proceeds, with conflicts broadening along rural-urban and north-south lines.

Impacts to Native American Communities

Native American tribes in the immediate vicinity of the Yucca Mountain project area and along potential transportation routes are, for the most part, economically disadvantaged. Reservations and communities in Nye, Lincoln, and Inyo counties are rural and isolated, and either lack a land base or have land bases too small to support their populations by ranching or other locally common means. A large number of people are unemployed, underemployed, and/or are living below the poverty level. Educational levels have improved in recent years, but without job opportunities in local communities, people must leave to take advantage of their training. Any negative statewide economic impacts associated with or caused by the repository or repository-related nuclear waste transportation would have a disproportionate impact on such communities because of these depressed baseline conditions.

Native Americans are especially vulnerable populations when transportation of nuclear waste to the proposed repository is considered. For example, the Moapa Reservation is transected by I-15 and also by a main north-south rail line from Utah. The Las Vegas Colony is on the edge of I-15 and astride the same railroad tracks - and close to a major downtown Las Vegas switching yard, while their Snow Mountain lands are cut by U.S. 95 between Las Vegas and Yucca Mountain and by one of the potential rail lines.

The Duckwater Reservation is very close to U.S. 6, as is the Ely Colony, and to several of the proposed rail spurs that access the NTS from the east. The Timbisha Shoshone Tribe has lands at Scotty's Junction on U.S. 95 and on the proposed Carlin/Caliente/Bonnie Claire rail line. The Wells, Elko, Winnemucca, and Battle Mountain colonies are on I-80 to the north and existing rail lines, while the Yomba Reservation is close to a proposed rail spur from the north. Only Duckwater has any personnel with EMT training, and they are not prepared for nuclear disasters.

In addition to impacted tribes in Nevada, there are Native American communities and Indian Reservations in 16 states that would be directly impacted by shipments of spent nuclear fuel and high-level nuclear waste to Yucca Mountain. These include reservations crossed by potential shipping routes; off-reservation ceded lands, where tribes retain treaty rights or other legally recognized user rights, crossed by potential shipping routes; reservation lands and off-reservation lands within transportation emergency evacuation zones along potential shipping routes; reservation and off-reservation lands that could be contaminated by air or water transport of radioactive materials released in a severe transportation accident or terrorist incident (generally within 50 miles downwind, downstream, or down gradient of a potential shipping route); reservations whose highway access would be disrupted by a nuclear waste transportation emergency; and off-reservation lands along potential shipping routes where Tribal personnel would likely be involved in emergency response.

DOE has done little or nothing to evaluate impacts to these communities, nor has DOE provided financial support to enable Native American entities to conduct

independent studies of impacts or monitor and evaluate Yucca Mountain plans and activities that affect them.

Spent Nuclear Fuel and High-Level Radioactive Waste Transportation Impacts Within Nevada

In Nevada, 13 counties, including the State's major metropolitan areas, would be directly and significantly affected by Yucca Mountain related nuclear waste transportation. At the end of the shipping 'funnel', Nevada communities would experience up to 96,000 shipments during a shipping campaign that would span four decades. The transportation of such massive quantities of SNF and HLW will be the most visible and dramatic "driver" of impacts for the State of Nevada and affected local communities. There has been intensive news media coverage of the Yucca Mountain "characterization" process, and equal or more scrutiny can be expected for any HLW shipment campaign. No doubt stories will be widely broadcast about glitches, problems, issues with contracts and subcontracts, as well as public responses to everything from the program budgets to small events and, of course, to any major accident anywhere in the country.

The Las Vegas metropolitan area could receive more than 2,500 truck shipments per year, an average of one truck every four hours. Under the minimum impact scenario, Las Vegas would receive 620 shipments per year, an average of one truck or rail cask every 14 hours.

In the event of an accident or incident resulting in the release of radiation, property value impacts throughout the State would be in the billions of dollars. Such property value impacts would likely occur in cities and communities throughout the country along nuclear waste shipping routes.

A severe truck accident in Las Vegas involving the release of radioactive material could contaminate up to 4.3 square miles. Acute radiation exposures during the first 24 hours could result in up to 2.7 latent cancer fatalities. Decontamination would cost over \$1.7 billion (exclusive of the costs of evacuations and economic disruption caused by the event). A decision not to clean up the contaminated area could result in between 200 and 1,300 cancer fatalities over 50 years. Accidents of greater severity could occur.

A severe rail accident in Las Vegas (or elsewhere) involving the release of radioactive material could contaminate up to 40 square miles. Acute radiation exposures during the first 24 hours could result in up to 400 latent cancer fatalities. Decontamination would cost over \$15.4 billion (exclusive of the costs of evacuations and economic disruption caused by the event). A decision not to clean up the contaminated area could result in between 6,000 and 41,000 cancer fatalities over 50 years. Accidents of greater severity could occur.

Even without a serious accident, the extraordinarily large number of continuous SNF and HLW shipments within Nevada over the extended time frame of the required

Yucca Mountain shipping campaign will expose thousands of people throughout the state to low levels of radiation that could increase lifetime cancer risks and present more individuals within the state (i.e., pregnant women and young children) with more immediate health risks.

The amount of radiation exposures allowed under existing regulations, coupled with the large number of legal-weight truck shipments, would result in substantial worker exposures. State safety inspectors could, in theory, receive doses up to 8.5 rem (8,500 mrem) per year. Fulltime truck drivers could receive annual doses exceeding 4 rem per year. DOE calculated that these exposures over 24 years would increase lifetime cancer risk by at least 8 percent for the maximally exposed worker. Nevada studies estimate that cancer risks would be 50% higher than DOE estimates and that other health risks ignored by DOE, such as risks to pregnant female workers, could be 7-10 times higher than cancer risks. NRC and DOE regulations currently restrict occupational exposures to 5 rem per year. The DEIS states that health risks should be further reduced by restricting worker exposures to 2 rem per year.

Service station attendants could also receive doses well in excess of the NRC and DOE regulations. Along the most likely Nevada highway routes, a service station attendant who regularly fuels and services SNF trucks could receive a dose of 500-1,000 mrem per year. The resulting increased lifetime cancer risk, as calculated by DOE's method, would be relatively small, less than 2 percent over 24 years. But the slightly higher annual cancer risk would be more than 5 times higher than the average annual risk for death in an automobile accident, a risk that is considered intolerable and compels intense efforts by many state and Federal agencies directed to lower the risk.

Other members of the public could receive radiation doses while sharing the roadway with SNF trucks. In urban Clark County, traveling on a multilane highway in heavy traffic next to an SNF cask could result in doses of 4-8 mrem per hour. The occupants of a vehicle stuck in traffic gridlock next to a SNF truck for four hours could receive up to 40 mrem. On rural, two-lane highways, where escorts in separate vehicles are not currently required, the driver of a vehicle traveling one truck-length (20 meters) directly behind a SNF truck would receive a dose of about 0.1 mrem per hour. Tailgating the SNF truck could increase the dose rate to about 1 mrem per hour.

Conclusion

The following chapters present the key findings from over 15 years of research dealing with the full range of potential impacts from the Yucca Mountain program. This information has been widely available in the scientific literature for years. It has been made available to DOE in a variety of ways and at numerous times. The fact that the full range of impacts has not been considered and weighed by the Secretary in making the decision to recommend the Nevada site to the President for development as a repository can only be attributed to intentional neglect on the part of DOE.

This failure to undertake a broad-based and comprehensive evaluation of the socioeconomic, environmental, and public health and safety impacts associated with the Yucca Mountain program, both in Nevada and within cities and communities located along nuclear waste shipping routes nationally, renders any site recommendation not only premature, but also fundamentally flawed.

The Nevada research demonstrates that the Yucca Mountain program is both unworkable and unnecessary. One inescapable conclusion is that the federal government is in no way prepared to deal with – or is even aware of – the effects of the Yucca Mountain project on society and the country. The research concludes that DOE and the national government must become much better prepared to solve the array of problems presented by public responses, opposition, and resistance to HLW facilities and HLW transportation before proceeding with a high-level radioactive waste program on a scale and consequence of the proposed Yucca Mountain program.

Any successful future program will have to learn from the mistakes of the past. Most importantly, there must be a commitment to fully understand the consequences of a major and unprecedented nation HLW shipping campaign. This commitment must be coupled with an unimpeachable commitment to scientific and technical integrity in all aspects of the HLW management and disposal program. Finally, the effort must be governed by the principle of full involvement on the part of affected states and localities, together with an unyielding commitment to a voluntary process by which potential storage and/or disposal sites are identified, studied, and developed.

The opportunity and resources exist today for the nation to embark upon just such a course. New dry storage technologies, not fully developed in 1982 when the Nuclear Waste Policy Act was crafted, are now available to provide safe, efficient, and economical storage of SNF at nuclear power stations. These facilities, already among the most secure commercial installations in the country, can be made even more secure by relatively simple upgrades, many of which are currently being implemented. Such at-reactor storage would have to be implemented for most, if not all, existing nuclear power plants even if the Yucca Mountain program were capable of being implemented, since the lead time for accepting waste at the facility extends from at least 10 to as many as 50 years.

DOE has already created the model for this interim solution to the waste problem in the agreement with Pennsylvania Electric Company (PECO). Under that arrangement, DOE will take title to spent fuel at PECO's Peach Bottom reactor while the waste remains on the grounds of the generating station. Through reductions in the fees DOE assesses PECO for nuclear-generated electricity, DOE will provide compensation to the utility for the costs associated with implementing and maintaining on-site storage and for necessary ongoing upgrades to facilities.

The PECO solution permits DOE and the nation more than enough time to carefully assess how and why the Yucca Mountain program failed and how best to proceed in the future and avoid the mistakes of the past. It also allows time for the

political and social climate surrounding the nuclear waste issue, so fouled by the atmosphere of distrust and cynicism caused by the Yucca Mountain project, to recover, while affording the country the opportunity to devote time and resources to the development of new waste reduction technologies, such as transmutation.

To rush ahead with the failed and dangerous Yucca Mountain program ignoring the legitimate scientific, ethical, social, and political opposition and in the face of the massive and irreparable impacts the program will inflict upon Nevada and the nation is not only unwise, but also entirely unnecessary. The findings and conclusions contained in the following chapters and in the extensive body of literature these chapters are built on demonstrate convincingly the folly of continuing the course with Yucca Mountain. However, they also point the way towards a new, equitable, and ultimately successful approach to the high-level radioactive waste program.