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## Session 6 - The National environmental policy act (NEPA): Is it all that it can be? The Case for evaluating stigma effects

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# The National Environmental Policy Act (NEPA): Is it all that it can be? The Case for Evaluating Stigma Effects

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## Abstract

*The National Environmental Policy Act (NEPA) has long been regarded as the "Magna Carta" of environmental policy legislation. The government in implementing its requirements on NEPA is required to evaluate potential environmental impacts from "significant" projects, to examine alternatives to proposed actions, and to enable the public to provide meaningful input to decision-makers. Despite the significance of NEPA there is evidence to suggest that environmental impact analyses may in fact be understating potential negative effects to citizens and communities. In particular potential impacts associated with stigma have been almost universally ignored in documents prepared under NEPA. The proposed high-level nuclear waste repository at Yucca Mountain in southern Nevada exemplifies how stigma issues if not examined could result in dramatic impacts to the Las Vegas metropolitan area. Analogous impacts could occur from similar projects elsewhere. The paper will examine issues associated with stigma vis-à-vis NEPA.*

## 1. Introduction

Mid-twentieth century saw significant governmental reform in the United States. Congress began to tackle important societal problems ranging from civil rights and workplace safety to environmental degradation.

A strong environmental movement emerged in the 1960's as it became apparent that the quality of life sought through economic growth and technological innovation would not be achieved without a reorientation of values and a reconsideration of behaviors.<sup>1</sup>

Catalysts for action to improve the environment included two severe accidents that took place in 1969: a dramatic oil and chemical fire in Cleveland's Cuyahoga

River and an extensive oil spill in the scenic and environmentally sensitive waters off Santa Barbara, California.

The emphasis on eliminating severe environmental degradation led to Congress' enactment of the Clean Water and Air Acts, the Resource Conservation and Recreation Act, Toxic Substances Act of 1976 (TSCA) among others. Polluted streams, unclean air and unregulated hazardous waste disposal were no longer regarded as acceptable costs for doing business.

Perhaps Congress' key contribution to environmental protection, however, was in the crafting of the National Environmental Policy Act (NEPA).<sup>2</sup> NEPA has been characterized as "our basic national charter for protection of the environment."<sup>3</sup> (NEPA) committed the government of the United States for the first time in its history to a comprehensive policy of environmental protection. Since its passage NEPA has ensured that thousands of federal projects were evaluated to determine potential effects on the environment, communities and citizens.

NEPA imposes "a deliberate command... upon...agencies to consider (that) environmental factors are not shunted aside in the bureaucratic shuffle."<sup>4</sup> Although NEPA has resulted in the identification of important environmental issues and problems, its application often appears to have fallen short of Congressional objectives.

Environmental assessments prepared to meet NEPA requirements are often considered as inadequate in documenting the extent of potential impacts to the *human environment*.<sup>5</sup>

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<sup>1</sup> Caldwell, Lynton Keith. (1998) *The National Environmental Policy Act: An Agenda for the Future* (Bloomington, Indiana and Indianapolis: University of Indiana Press), xvii.

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<sup>2</sup> 42 U.S.C. §§ 4321-4370a. *The National Environmental Policy Act of 1969* (Pub.L. 91-190)

<sup>3</sup> Ibid.

<sup>4</sup> *Flint Ridge Development Company v. Scenic Rivers Association*, 426 U.S.776, 787 (1969).

<sup>5</sup> *Human environment* is defined in the National Environmental Policy Act, (42 U.S.C. §§ 4321-4347, Stat. NEPA §§ 2-209.) at § 1508.8.

There is compelling evidence to suggest, for example, that impacts to citizens and communities can result from what are characterized as “stigma-related impacts (SRI).”<sup>6</sup> It has been noted that these features can result from an activity that the public finds repellent, upsetting, disruptive, or hazardous.<sup>7,8</sup>

A review of selected EIS prepared to evaluate activities that could result in SRI, however, confirmed that few researchers have considered these issues. (See Table 2 at the end of the text) This has a number of implications. Conclusions and recommendations in environmental assessments could be incomplete or inaccurate. Impacts to citizens and communities may be seriously understated.

Not addressing SRI in situations where appropriate (e.g., nuclear waste transportation, hazardous waste sites) would also appear to be counter to Congressional objectives in enacting NEPA. Is this the case or do federal agencies have valid reasons for ignoring these impacts. This is examined more completely in the next section.

## 2. The National Environmental Policy Act (NEPA)

The Congressional debate that resulted in the enactment of NEPA had a strong philosophical foundation. Henry Jackson, the late Senator from Washington State and one of the creator’s of the NEPA legislation, described the need for a comprehensive environmental statute:

“...the concept of man's total environment has emerged in the last few years as a new focus for public policy. Not long ago the idea of government responsibility for the health of the individual, for the state of the economy, (and) for consumer protection was considered revolutionary. Today, we have come to take these responsibilities for granted. We must now proceed to make the concept of a governmental responsibility for the quality of our surroundings an accepted tenet of our political philosophy.”<sup>9</sup>

The NEPA process “is intended to help public officials make decisions that are based on understanding of

<sup>6</sup> A partial list of activities associated with SRI would include the processing, storage and/or transport of hazardous materials, half way houses, prisons, etc.

<sup>7</sup>The State of Nevada and Nevada local government Yucca Mountain oversight programs are important examples of entities not satisfied with DOE EIS efforts.

<sup>8</sup> Pijawka, K. D. and O. O. Ibitayo (1999). “Reversing NIMBY: An Assessment of State Strategies for Siting Hazardous Waste Facilities.” *Environment and Planning C: Government and Policy* 17: 379-389.

<sup>9</sup> Jackson, Henry Senator, Committee on Interior and Insular Affairs, 16 April 16, 1969, 27.

environmental consequences, and take actions that protect, restore, and enhance the environment.”<sup>10</sup>

Since NEPA is intended to evaluate *environmental impacts* where are those associated with citizens and communities examined? The definition of *environment* includes the potential influences of an action on the *human environment*.<sup>11</sup>

The coordinative body for NEPA issues, the Council on Environmental Quality (CEQ), defines “human environment” as:

“...includ(ing) the natural and physical environment and the relationship of people with that environment (also see footnote 5). When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will *discuss all of these effects* (emphasis added) on the human environment.”<sup>12</sup>

This definition indicates that Congress and the federal government did not place limitations on the scope of potential impacts that could be evaluated in an EIS. (There must be a connection to the activity being evaluated, however). This would presumably enable SRI to be evaluated in an EIS.

## 3. What are the Impacts?

What then are the potential SRI impacts? The Dictionary of Real Estate Appraisal defines stigma as: “An adverse public perception regarding a property; the identification of a property with some type of opprobrium (environmental contamination), which exacts a penalty on the marketability of the property and hence its value.”<sup>13</sup>

Under this definition, the value of contaminated property ultimately depends not only on the extent of the contamination, but also the way in which the contamination is “*perceived or evaluated*.”

(S)tigma resulting from (an) amplified perception of risk (for example) has been associated with property

<sup>10</sup> Executive Office of the President. *The National Environmental Policy Act: A Study of Its Effectiveness After Twenty-five Years* Council on Environmental Quality (NEPA, CEQ). (Washington, D.C.: GPO, January 1997), ix.

<sup>11</sup> 42 U.S.C., op.cit. § 4341.

<sup>12</sup> Ibid. § 1508.14.

<sup>13</sup> Appraisal Institute, *Dictionary of Real Estate Appraisal*, 4th ed. (Chicago: Appraisal Institute, 2002), 277.

value diminution.<sup>14</sup> Negative effects on property values have been proven from adjacency to hazardous facilities (e.g., landfills, petroleum refineries) and routes where dangerous materials or waste are transported.<sup>15</sup> (Table 1)

| <p align="center"><b>Table 1</b><br/><b>Selected Property Value Analyses<sup>16</sup></b></p> |                      |   |  |
|---|----------------------|---|--|
| <b>Authors</b>  | <b>Method</b>        | <b>Variable</b>   | <b>Findings</b>                          |
| Michaels & Smith (1990)   | Hedonic              | 11 hazmat waste sites on residential property values (PV) | Loss of \$115/ mile within 10 miles      |
| Nelson, et al (1992)  | Hedonic              | Housing sales price, distance to landfill                 | 12% loss adjacent to site; 6% - one mile |
| Greenberg & Hughes (1993)   | Survey               | Affect of hazardous waste site on PV                      | Loss of 5-25% within ¼ and 1 mile.       |
| McCloskey et al (2002)  | Hedonic              | Post designation of superfund site                        | Loss averaged 18.2% of value             |
| Jenkins-Smith et al (2002)  | Contingent valuation | Willingness to pay or sell for home near smelter          | Average 30.9% and 53% discount           |

What distinguishes SRI from other socioeconomic impacts traditionally evaluated in EIS? (e.g., employment, population gained or lost) James Flynn, a national authority on risk and stigma research, observes that:

"[t]he attempts under NEPA to consider [the] social and economic consequences of significant activities led to the development of models for estimating employment, population, public service, and fiscal impacts. Most often [these were] based on versions of export-base economic models [and the results of] these exercises came to be called ... "standard effects."<sup>17</sup>

Contrasting the standard effects from those associated with stigma Flynn explains that:

"(A)fter the Three Mile Island accident, it became clear that public responses to nuclear facilities and the potential for radiation exposures were social impacts that

<sup>14</sup> Chalmers, J. A. and T. O. Jackson (1996). "Risk Factors in the Appraisal of Contaminated Property." *The Appraisal Journal* 64(1): 44-58.

<sup>15</sup> *City of Santa Fe v. John Komis*, 114 N.M. 659, 845 P.2d 753 (1992).

<sup>16</sup> Simons, Robert A. *When Bad Things Happen to Good Property* (Washington, D.C.: Environmental Law Institute, 2005), 93, 99, 102.

<sup>17</sup> James Flynn, op.cit.

clearly fell outside the range of social-economic impacts in the "standard" portfolio of analysis and projection. They were "*special*" (my emphasis) because the driving variables for these impacts were not accounted for in the existing models and premises for addressing socioeconomic impacts. The issue was how individuals, groups, communities, and the public at large would respond to the radiation hazards associated [with] a high level nuclear waste repository and transportation program." <sup>18</sup>

These *special effects* came to be known as *stigma-related* impacts from initial research performed by Paul Slovic, of Decision Research, Roger Kasperson at Clark University in Massachusetts, and Howard Kunreuther at the Wharton School, University of Pennsylvania.<sup>19</sup>

Despite the increasing evidence that SRI offer the potential to create impacts to citizens and communities, as noted previously, relevant documents prepared under NEPA continued to ignore these potential sources of impact.

The Yucca Mountain EIS (YMEIS), which examined potential impacts from a proposed nuclear waste repository, is one of the few EIS that discusses SRI. The analysis of SRI issues by the Department of Energy (DOE), however, can probably be attributed more to the aggressiveness of the State of Nevada rather than any enlightenment by the federal government.

While the routing of nuclear waste is still be evaluated there is some basis for concern that Clark County, Nevada, which includes the City of Las Vegas, could be impacted by the transport of nuclear waste. (See Figure 1) Over two-thirds of Nevada's population and much of the State's tourist industry are in Clark County. The transport of some of the nuclear waste through Metropolitan Las Vegas could negatively influence the economy as well as issues such as the property values of residents.

The YMEIS offers contrasting viewpoints between DOE and the State of Nevada on SRI issues. DOE essentially dismisses the importance of SRI impacts:

"(t) here is a consensus among social scientists that a quantitative assessment of the potential impacts from risk perceptions of the repository and the transportation of spent nuclear fuel and high-level radioactive waste is impossible at this time and probably unlikely even after extensive additional research. (My emphasis)"<sup>20</sup>

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> O'Connor, Dr. Robert E. "Are Fear and Stigmatization Likely, and

The State of Nevada in their oversight role of the Yucca Mountain Program had a different perspective, however. In the State's impact assessment document great concern is expressed about potential SRI:

"The greatest threat to Nevada's economy and way of life from the proposed repository stems from what has been termed the "special effects" of the project. These are impacts related to intense negative perceptions and stigma associated by the public with a high-level radioactive waste repository, combined with the vulnerability of the Nevada economy to changes in its public image. Because of the high profile nature of the whole nuclear waste disposal program, the potential exists for Nevada to become associated with these negative perceptions to the detriment of its attempts to attract tourists, conventions, migrants, and diversified new industry to the state. This is especially troublesome in the event of a nuclear waste accident in or near Las Vegas that might stigmatize the area and may cause visitors to stay away in significant numbers."<sup>21</sup>

To bolster this argument there are examples where stigma issues have created significant impact. An incident involving a discarded radioactive element took place in Goiânia (State of Goiás), Brazil; a community west of the Brazilian capital of Brasilia. Goiás state has a mixed agricultural, industrial and tourist economy.

In September of 1987, scavengers dismantled a metal canister from a radiotherapy machine at an abandoned Cancer Clinic in Goiânia, Brazil. Five days later a junkyard worker pried open the lead canister to reveal a pretty blue, glowing dust: radioactive cesium<sup>137</sup>. In the following days, scores of Goiânia citizens were exposed to the radioactive substance.<sup>22</sup> Several died and a number were injured.

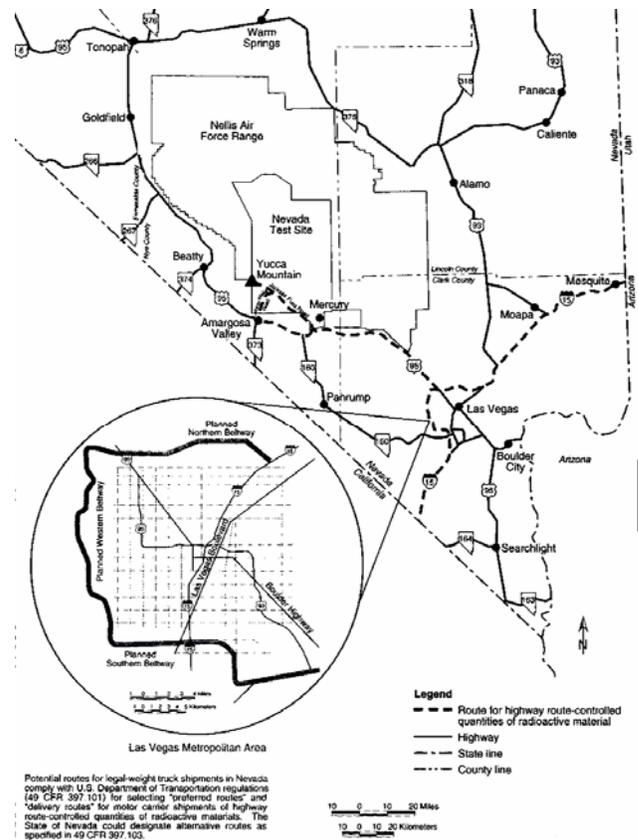


Figure 1

Source: Department of Energy, 1999.

Impacts to Goiás and its citizens from this incident were dramatic, although in many respects the reaction is somewhat surprising given the source of the radioactivity. As the U.S. Government Accounting (now Accountability) Office describes the impact:

"The accident had a great psychological impact on the whole region. Many people feared contamination, irradiation, and incurable diseases. Over 8,000 persons requested monitoring for contamination in order to obtain certificates stating that they were not contaminated. These were needed because operators of commercial airplanes and buses refused to allow people from the region to board and hotels refused to register them."<sup>23</sup>

How Do They Matter?" Page 1, prepared for Jason Technologies Corporation, September 8, 2001 in Appendix N of the YMEIS.

<sup>21</sup> State of Nevada. "Interim Report on the State of Nevada Socioeconomic Studies," published in June, 1989.

<sup>22</sup> Dwyer, Augusta. Playing with Radiation. Macleans. 100:44; p. 44.

<sup>23</sup>United States General Accounting Office (GAO), Report to the Ranking Minority Member, Subcommittee on Financial Management, the Budget, and International Security, Committee on Governmental Affairs, U.S.Senate May 2003 Nuclear Nonproliferation U.S. and International Assistance Efforts to Control Sealed Radioactive Sources Need Strengthening (GAO-03-638). (Washington, D.C.: Government Printing Office).

There are also court decisions acknowledging impacts from SRI.

*The City of Santa Fe v. Komis*<sup>24</sup> provides an important example of SRI recognized by the courts. On November 14, 1988, the City of Santa Fe (New Mexico) condemned 43 acres of land owned by John and Leonia Komis for the construction of a highway bypass around Santa Fe to transport transuranic (TRU) (nuclear) waste from (Los Alamos National Laboratory) to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico.<sup>25</sup> Without the bypass, TRU waste shipments were planned for transport through the Santa Fe city limits.<sup>26</sup> The Komis' sued and were awarded roughly \$888,000 in damages. The total amount included and \$490,000 for the value of the almost 43 acres taken, \$61,000 for severance damages to the "buffer zone" along the taken land, and an *additional \$337,815 for severance damages due to public perception of risk related to the planned shipments of TRU waste* (my emphasis)<sup>27</sup> The New Mexico Supreme Court later upheld the lower court's decision.

While the *Komis* case was not associated with protesting the inadequacies of an EIS, the case is interesting for a number of reasons attributable to stigma and impact:

a. It demonstrated that the public is willing to litigate on issues associated with stigma. While this is not revelatory the Komis family's success will no doubt serve as a precedent for future litigation on SRI issues.

b. In finding for the Komis family the New Mexico courts confirmed that possible risk associated with the routing of nuclear waste could create a stigma effect in the mind of the public and reduce the value of the property. Surveys were employed to determine the public's perception of the risk.

c. The courts decision took place almost 15 years in advance of the initiation of nuclear waste shipments to the WIPP site in Carlsbad, New Mexico. The courts in essence presupposed that an actual impact would occur in the value of the property.

d. The recognition by the courts that stigma comprises an impact, notwithstanding its apparent legitimacy in the NEPA statute, would appear to reaffirm SRI as relevant

issues to be examined in NEPA documents (for projects providing stigma-causing conditions).<sup>28</sup>

#### 4. Summary

The National Environmental Policy Act (NEPA) was enacted by Congress "to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment,"<sup>29</sup> including the human environment. The protection of human health, safety and quality of life are integral to the goals of NEPA. It is apparent, however, that federal agencies have often ignored potentially serious impacts, including those associated with stigma.

The paper provides a rationale behind incorporating stigma in analyses prepared under NEPA. Evidence suggests that the federal government may be understating potential risk and important impacts by not considering SRI.

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<sup>24</sup> *The City of Santa Fe v. John Komis*. 114 N.M. 659, 845 P.2d 753 (N.M.1992).

<sup>25</sup> *Ibid*.

<sup>26</sup> *Ibid*.

<sup>27</sup> *Ibid*. 661.

<sup>28</sup> It should be noted that courts have also ruled against citizens in similar cases, a decision such as that rendered in *Komis* should not ignore potential impacts from any source including SRI.

<sup>29</sup> Executive Office of the President. *The National Environmental Policy Act: A Study of Its Effectiveness after Twenty-five Years*. Council on Environmental Quality, (Washington, D.C.: GPO, January 1997), ix.

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**Table 2  
Preliminary Analyses of EIS**

| <b>EIS Study</b>  | <b>EIS Number and Date</b> | <b>Federal Department/ Agency</b> | <b>Potential "stigma-related" Affects</b>            | <b>Standard Impacts Evaluated?</b> | <b>"Stigma" Related Impacts Tested?</b>                         |
|---|----------------------------|-----------------------------------|--|------------------------------------|---|
| Yucca Mountain EIS  | DOE/EIS-0250D 2002         | Energy                            | Transportation                                       | Yes                                | No  |
| West Valley Demonstration Project                                     | DOE/EIS-0337-December 2003 | Energy                            | Transportation                                       | Yes                                | No  |
| License Renewal of Nuclear Plants, Surry Power Station, Units 1 and 2 | NUREG-1437 Vol. 1 – 2002   | Nuclear Regulatory Commission     | Relicensing of nuclear reactors                      | Yes                                | No (only related analysis was concerning stigma and aesthetics) |
| License Renewal of Nuclear Plants, Calvert Cliffs                     | NUREG-1437 Vol. 1 – 1996   | Nuclear Regulatory Commission     | Siting and refurbishment of nuclear reactors         | Yes                                | No  |
| Proposed National Enrichment Facility in Lea County, New Mexico       | NUREG-1790, 2005           | Nuclear Regulatory Commission     | Build and operate an enrichment facility             | Yes                                | No (noted; not examined; no reason given)                       |
| Final Hanford Site Solid Waste facility Richland, Benton County, WA   | DOE/EIS-0286F), 2004       | Energy                            | Transportation of various types of radioactive waste | Yes                                | No (accident scenarios examined)                                |

Source: The Department of Energy, The Nuclear Regulatory Commission.