

2-2003

# Weapons of Mass Victimization, Radioactive Waste Shipments, and Environmental Laws

James D. Ballard

*California State University - Northridge*

Kristine Mullendore

*Grand Valley State University, mullendk@gvsu.edu*

Follow this and additional works at: <https://scholarworks.gvsu.edu/scjpeerpubs>



Part of the [Criminology and Criminal Justice Commons](#)

---

## Recommended Citation

Ballard, James D. and Mullendore, Kristine, "Weapons of Mass Victimization, Radioactive Waste Shipments, and Environmental Laws" (2003). *Peer Reviewed Publications*. 2.

<https://scholarworks.gvsu.edu/scjpeerpubs/2>

This Article is brought to you for free and open access by the School of Criminal Justice at ScholarWorks@GVSU. It has been accepted for inclusion in Peer Reviewed Publications by an authorized administrator of ScholarWorks@GVSU. For more information, please contact [scholarworks@gvsu.edu](mailto:scholarworks@gvsu.edu).

# Weapons of Mass Victimization, Radioactive Waste Shipments, and Environmental Laws

## Policy Making and First Responders

JAMES DAVID BALLARD

*California State University, Northridge*

KRISTINE MULLENDORE

*Grand Valley State University*

*Transnational and domestic terrorists may employ unconventional weapons of mass destruction and/or mass contamination in their future operations against governments. These asymmetrical tactics may include nuclear, chemical, and biological weapons designed to produce panic and disruption in daily life. This article addresses several of the myriad legal and practical issues relative to potential radiological weapons. Several suggestions as to local-level policy are offered and discussed. Among these suggestions are the need for local law enforcement and policy decision makers to formally recognize the potential use of radiological weapons of mass contamination and the need to develop both protection strategies for radioactive shipments that may be at risk from this form of crime and proactive public intervention measures for when communities are faced with a terrorist attack on shipments of nuclear waste.*

**Keywords:** terrorism; first responders; radiological terrorism; NEPA; environmental laws

## BACKDROP

Recently the political, cultural, and legal climate in the United States began to focus considerable public policy attention and enormous public resources to the potential use of weapons of mass destruction (WMD) by terrorists (Department of Justice [DOJ], 1998; Hoffman, 1998; Lesser, Hoffman, Arquilla, Ronfeldt, & Zanini, 1999; Nolan, 1999; Tucker, 2000). This systemic Federal agenda has consequences for civic activities, public policy, and for the very political structures that stand to benefit from this increased awareness (Ballard, 1997; Ballard, 2000a; Boyer, 1998; Stern, 1999).

The effect of such agendas on public opinion and the policy process is not unidirectional as some Federal agencies seem to believe but it can have an equally profound effect on how the Federal-level structures of power operate.

AMERICAN BEHAVIORAL SCIENTIST, Vol. 46 No. 6, February 2003 766-781

DOI: 10.1177/0002764202239173

© 2003 Sage Publications

This article will explore the dynamics of one such unintended policy consequence and how this may impact other Federal agencies, local communities, and first responder/law enforcement organizations in their efforts to counteract such acts of aggression as experienced on September 11, 2001.

Ballard (2000a) suggests that contemporary terrorism fears are part of the creation of a "moral panic" and one that is specifically directed at expanding Federal power. A moral panic is generally understood as a distraction device used by existing structures of power and designed to draw the attention away from underlying political processes (Cohen, 1972; Pearson, 1983). One way to analyze and counteract these deliberate and self-motivated political panics is to focus on both the intended and alternative consequences of the policy that derives from such processes. This article will specifically discuss some of the alternative consequences of the current focus on WMD terrorism and how that focus may produce long-term effects not easily recognized, and clearly not intended, by the existing structures of power.

### ENTER THE MORAL PANIC

In trying to identify the alternative effects of the moral panic process, this article will focus on only one variety of WMD and how the introduction of such panics into the public policy domain can interfere with the intended goals of those policy makers who consciously or otherwise used this policy justification technique. For example, activists opposed to the recently approved Yucca Mountain geologic storage facility for highly radioactive waste materials used the current political focus on terrorism to justify additional safeguards and security for the shipments to this forthcoming facility (Ballard, 2002a, 2002b). These types of alternative effects may not be desirable to those Federal agencies, such as the Department of Energy (DOE), that are promoting the fight against terrorism because they provide administrative and jurisdictional challenges for these same agencies trying to use the threat of terrorism as a justification for budget and mission-widening activities. This budget and mission-widening concept can be found in many agencies and their current approach to countering terrorism, including the threat and use of nuclear alternatives.

To help demonstrate the process described above, this article will focus on preexisting safety issues surrounding the disposal and transportation of radioactive waste by-products created by the generation of nuclear power and nuclear weapons production. To understand this process, we should first examine how the Yucca Mountain waste repository will intern vast amounts of high-level radioactive wastes (HLRW) from weapons production activities and spent nuclear fuel (SNF) from commercial reactors in conjunction with the transportation effort necessary to move these materials from their safe and secure generation facilities and to the forthcoming Yucca repository (Ballard, 1997; Halstead & Ballard, 1997b).

Many experts believe that, to date, the controlling agency behind the Yucca project, the DOE, has failed to incorporate the potential use of HLRW and SNF as potential radiological weapons of mass contamination into their analysis of the environmental risks associated with this large-scale Federal program (Halstead, Ballard, & Dilger, 2001a, 2001b). This lack of effort is despite the DOE's own use of terrorism as a justification for the shipment program and despite the sustained rhetoric from many Federal agencies that are promoting the fear of terrorism as a legitimate law enforcement and public policy issue (Mahaley, 2001; Meserve, 2001).

### DEBATE FRAMEWORK

Somewhere between the extremes of the "terrorism threat" perspective offered by the military, regulatory, and Federal law enforcement agencies that are demanding more power and resources to fight this threat, and the self-motivated DOE attempts to brush the terrorism issue away relative to the Yucca radioactive waste transportation effort and thus quell public fears of anything radioactive, lies a minefield of public policy indecision and regulatory debate. In recent years, expansionist-minded Federal agencies felt the need to advocate for additional resources in a post-cold-war political environment and have tacitly agreed to collectively promote terrorism as the main threat to the political stability of the world community. For example, these agencies have used their cooperative expertise in the media to promote policies that will eventually gather unto them additional power, prestige, and resources (Ballard, 2000a).

In an attempt to understand the conflict between the moral panic created by certain Federal agencies and the need of other agencies to disregard the implications of said moral panic when making decisions on nuclear wastes that can be used as mass contamination weapons, this article is divided into three distinct sections: (a) background of nuclear WMDs; (b) details of the Yucca Mountain project, including projected numbers of shipments and their impact on local and state jurisdictions; and (c) existing legal and regulatory mechanisms designed to protect the public from Federal actions potentially dangerous to citizens, local communities, and the environment.

The conclusion of this article will rely on the proposals of Flacks (1988), who noted that everyday life could become the seeds of alternative policy action. This author's work would suggest that local community leaders and state-level politicians can collectively use their power to create a grassroots political agenda that employs the existence of the WMD moral panic as the basis of an effective strategy to counter the powerful political and economic forces behind the Yucca project. This theory provides a method to counteract the latent transfer of risk from both the owners of existing nuclear power facilities and the oversight agencies that control the nuclear weapons facilities to an ill-informed and unsuspecting law enforcement community, local governments, and the general public. In

short, Flacks provides the theoretical framework for a counterhegemonic opposition movement to this unfunded, and/or underfunded, Federal mandate for local communities and their first responder communities.

### WEAPONS OF MASS DESTRUCTION

Federal law enforcement agencies, terrorism scholars, and casual observers of contemporary political debates use the term WMD to categorize a number of tactics and/or the actual devices that have the potential to inflict death and/or injury on large numbers of people. These agencies, the military, and terrorism scholars use the terms *NBC* (nuclear, biological, and chemical), *CBW* (chemical and biological weapons), or *CBRN* (chemical, biological, radiological, and nuclear) to categorize these types of tactics and weapons (Rabkin, 2000; Roberts & Moodie, 2000).

As this proliferation of terms suggests, the definitions of these types of weapons differ from author to agency to observer. These customary definitions of massively destructive and potentially socially harmful weapons are expanding as singular and exceptional incidents transpire. For example, after the Oklahoma City bombing, some agencies and scholars started to contemplate how large explosive devices should be added to these tactical typologies. Despite these deliberations, the general focus of both policy makers and scholars has been on chemical, biological, and nuclear weapons and their potential use by terrorists.

This article uses the typology codified in the acronym CBRN because it focuses attention to the fact that radiological weapons exist and should be recognized in the DOE's plans to move tens of thousands of highly radioactive shipments across the country and to the Yucca facility. To reiterate, CBRN includes chemical weapons, biological weapons, radiological weapons, and nuclear devices. The last two of these categories, radiological and nuclear, are the most salient for this discussion.

No matter the types of tactics and weapons included in any of the most commonly used typologies, one overriding characteristic has been overlooked: With few exceptions, these weapons and tactics are better categorized as weapons of mass victimization (Ballard, 2000b). They are generally designed to produce mass extermination of human life as opposed to the mass destruction of property. The exception to this rule includes the use of radioactive materials and nuclear devices that could destroy, or render useless for thousands of years, the land and fixtures located within a large geographic areas.

Popular culture has vividly portrayed the potential use of nuclear weapons by criminals, crazies, and terrorists. Books, movies, and television shows have helped reify the potential use of this tactic. This common theme in our popular cultural by-products feeds and reinforces the moral panic that Federal agencies promote. To uncover the Federal government's dominance of the nuclear political agenda, one needs look no further than the DOE, the Nuclear Regulatory

Commission (NRC), and issue-specific subagencies such as the Nuclear Emergency Search Team (NEST) to find an entrenched bureaucracy designed to protect our national interests and motivated to reduce public fears of a terrorist attack using a thermonuclear device. It is just these types of agencies that the public and the media look to for answers when expertise is needed (Ballard, 2002a).

Terrorism scholars note that the nuclear and radiological subcategories of CBRN weapons potentially pose the most destructive threat and could have long-term effects on a society (Ballard, 1997; Ballard, 2002a, 2002b; Halstead & Ballard, 1997b). The potential manufacture or acquisition, and eventual use, of thermonuclear nuclear devices are a remote possibility, but some observers have started to speculate about the more probable use of radioactive materials as a weapon of mass contamination (Ballard, 1997, 1999; Halstead & Ballard, 1997b). In particular, the question is, "Should public safety officials concern themselves about the potential use of SNF and HLRW shipments as sources of highly radioactive materials that could be used in a radiological dispersion device?" The entrenched nuclear bureaucracy codified by the DOE and NRC does not necessarily want to have this possibility considered because it calls into question the priorities these agencies set and challenges their practices with respect to nuclear waste and use of the services of local law enforcement agencies (Ballard, 2002a, 2002b).

Any terrorist that is contemplating the use of a radiological device knows they are not the same as a nuclear bomb because they cannot necessarily achieve a thermonuclear reaction. Thus, this type of weapon will not have the capacity to destroy everything in their immediate vicinity. That does not mean these materials cannot deliver significant negative social, financial, and emergency management impacts on a local community and/or on the nation.

A radiological device uses mechanical and/or explosive devices to disperse highly radioactive materials over a geographic area and thus contaminate that area for years, if not centuries (Ballard, 1999, 2002a, 2002b). In response to suggestions that SNF and HLRW could be used as radiological weapons, the DOE and affiliated agencies such as the Sandia National Laboratories have in the past conducted studies that downplay the risk of such an attack and minimize the potential catastrophic use of these materials by terrorists (e.g., Luna, Neuhauser, & Vigil, 1999).

The issue of what America should do about the tens of thousands of tons of highly radioactive nuclear waste places policy demands on the DOE and associated regulators such as the NRC. As noted in several places above, this demand is useful to these agencies when they are seeking increased resources but not when they result in the imposition of scrutiny and accountability on those activities they are charged with administering, such as the transportation effort necessary to make the Yucca project a reality. These demands, additional regulations, and other requirements not factored into such transportation planning that

already exists are unwanted burdens and counterproductive to their everyday self-promotion activities, general operations, and everyday functioning.

These types of unintended policy consequences may be one basis for the DOE resistance to more formally recognizing the risk of terrorism attacks against nuclear waste shipments. With respect to this contention, contemporary debates primarily center on what must be done with the by-products of nuclear power generation (SNF) and to a lesser extent around the production of weapons by the nuclear military infrastructure (HLRW). For both materials, powerful interest groups and stakeholders (power companies and the military respectively) wish to avoid having their own activities come under public scrutiny and wish to avoid the invocation of potential environmental-based regulatory restrictions associated with the risks of terrorism against nuclear waste shipments.

The motivation for state agencies such as the DOE then becomes one to balance the use of a moral panic to promote resource redistributions to certain Federal agencies and the simultaneous pressure from that same moral panic that could cause increased regulation of their behavior. The current terrorism debates as they relate to SNF and HLRW disposal discussed in the next section of this article set the stage for the argument that the Yucca transportation plans are subject to unwanted regulatory and public scrutiny.

### IMPACTS ON LOCAL JURISDICTIONS

The DOE has proposed by means of an environmental impact statement a large-scale, and multiple-year, transportation program for the various highly radioactive nuclear waste products needing disposal. This transportation effort will be necessary to move tens of thousands of tons of radioactive waste to a centralized geologic repository in the Southern Nevada desert.

The scope and scale of this transportation effort is unprecedented in America and one of the largest anywhere in the world (Halstead et al., 2001b). The DOE's Draft Environmental Impact Statement (DEIS), part of the Environmental Impact Statement (EIS) process, for this project included a proposed action that would transport 70,000 metric tons of material (Department of Energy [DOE], 1999, p. A-1). The hundreds of thousands of pounds of highly radioactive materials these shipments represent must be shielded from the environment for 10,000 years because of their extensive radioactive inventories. These radioactive materials come primarily from commercial reactors (63,000 metric tons from 33 different states), DOE facilities (7,000 metric tons from 4 states), and include surplus weapons-grade materials that have been reprocessed into mix-oxide fuel and/or immobilized (50 metric tons). The Final Environmental Impact Statement (FEIS) for the project offers significantly different numbers but still suggests that it will take years to complete the tasks that the DOE seeks to accomplish at the Yucca facility.

Due to the elongated approval process for the facility and the protracted and intense opposition from Nevada, the DOE has proposed, and as of now not discounted, the final use of an interim facility until such time as a final geologic repository could be sited (DOE, 2002). The use of this option would increase the total number of radioactive shipments as they are loaded, unloaded, and reloaded over the years and from facility to facility (Halstead & Ballard, 1997a). In discussions on the permanent or interim options, Southern Nevada is the only location being sited for use. No current plans exist for additional facilities, despite the fact that more waste products exist than can legally or practically be interned in the Yucca facility (DOE, 2002).

As part of the process of locating such a repository, the DOE was required to prepare an environmental impact statement (EIS). One major step in this process is the construction of a draft statement (DEIS) that defines the parameters of the discussion. This document was presented for public comment in 1999 and the final environmental impact statement (FEIS) was completed in February 2002. Because the routes, testing updates, transportation vehicle configuration, and/or the design of the shipping casks are unreported by the DOE in the DEIS or FEIS, as are the actual shipment modalities and frequencies, estimates of the total number of shipments range widely and seem to be based not on science but rather on political motive. For example, one estimate shows a range from 56,600 to 104,500 (PIC, 1996, in Halstead & Ballard, 1997a). DOE representatives, on the other hand, have reported that the actual number of shipments will be thousands less than these numbers (Barrett, 2002). Likewise, the estimates of the number of years such a massive transportation effort of highly radioactive cargoes would take are equally as vague and range from 24 to 40 years.

At the middle range of predicted shipment activity, local communities in more than 40 different states will be faced with an average of 3 to 6 shipments per day that are leaving the current storage facilities and traveling on the interstate highways, railways, and waterways of America toward Nevada and the Yucca facility. A cursory assessment of these numbers makes it sound like a *de minimis* problem, after all it is just a few shipments a day, but when one remembers that this level of activity will transpire every day, 365 days a year, and for at least 24 years (maybe decades longer), with an average distance of 2,000 miles and speeds that could be as low as 45 mph on flat surfaces, and that large numbers of highly radioactive waste cargoes will be on the road at any given time, the enormous scope of the problem is becoming more discernible as the true scope of the forthcoming transportation effort is uncovered.

The risk of a terrorist attack on nuclear waste shipments could be easily dismissed as someone else's problem if it were not for the fact that these cargoes will be in such easily identifiable vehicles and traveling set routes with such a frequency and duration that any potential saboteur or terrorist adversary would have no problem planning an attack against these materials. Such an attack would be designed to disperse radioactive materials around a community in a classic radiological dispersion scenario. Once again, most of the materials being

transported are not in danger of being used to make an atomic bomb, and they do not have the potential to create a thermonuclear explosion. But as part of a radiological device designed to disperse highly radioactive materials, the shipments should be considered a potential, if not a primary, target for terrorists (Ballard, 2002a, 2002b).

Because the DOE does not recognize the full range of potential risks of terrorist attacks on these shipments, they are currently not planning additional security measures to protect the health and safety of the communities through which these highly radioactive cargoes will be shipped. In fact, the NRC, a major regulatory body behind the DOE shipment effort, has proposed a rule change that reduces the security measures for these shipments (Halstead & Ballard, 1997b). The existing regulations governing safety and security and the impetus for even less security may be based on the perceived need to reduce costs for this program, not on what is best for local communities, first responders, and national security. The DOE does not seem to want to self-regulate such risks given the reality of the post-September 11, 2001, world. They specifically do not recognize the need to protect such shipments from large groups of terrorists willing to commit mass suicide to achieve a goal (Ballard, 2002a, 2002b).

This self-serving “cost cutting” places the general public, local communities, and state emergency management personnel in a difficult position. In short, the issues for these public servants would be, What if something goes wrong with transportation security, and what can be done thereafter to protect the lives and health of local residents and the environment of their communities?

Nevada has led a sustained effort to see that the DOE complies with existing Federal regulations and plans for the safe and secure transportation of these highly radioactive materials. To date, these efforts have impacted the process slightly but have not changed the fact that in a short amount of time shipments of highly radioactive nuclear waste will begin to traverse highways, railways, and waterways. Eventually, the number of shipments on the roads, moving by rail, and floating across shipping lanes should reach into the thousands per year. Evidence of this can be found in the DEIS and FEIS, and these documents lack a clear focus on the concerns Nevada has already raised in its oversight of the transportation process (State of Nevada, 2002).

Of interest, the DOE’s DEIS and FEIS identify the “parameters” of this national-level transportation action and its potential impact on the environment while failing to address the plan’s impact on states other than Nevada where significant opposition to the siting of a repository has been long-standing and sustained. These DOE documents leave unstudied the potential impact of the massive transportation effort necessary to move tons of highly radioactive waste across 40+ other states. For example, some experts believe that the DEIS and FEIS do not address the very real needs of local communities that face potential accidents or human-initiated events involving the trains and trucks transporting these materials (Ballard, 2000a). Likewise, the DEIS and FEIS fail to discuss the breakdowns by either of these transportation modalities or the

admittedly more remote possibility and consequences of terrorist attacks against these shipments.

The next section of this article will address the regulatory background (environmental impacts) for major Federal actions such as the Yucca transportation program and help determine if there exists a useful method for local communities to require the DOE and Federal government to address their needs prior to this becoming an unfunded Federal mandate. This potential mandate may force local and state governments to face the fiscal consequences of this Federal transportation effort without the benefit of adequate Federal funds.

### REGULATORY OBLIGATIONS

The National Environmental Policy Act (NEPA) (1969, 2002) created a mandate that required Federal agencies engaging in “legislation and other major Federal actions significantly affecting the quality of the human environment” to prepare an EIS before engaging in the proposed legislation or action (42 USC 4321). NEPA’s statement of purpose articulates a public policy agenda that requires the Federal government to “fulfill the responsibilities of each generation as a trustee of the environment for succeeding generations” while assuring all Americans “safe, healthful, productive, and esthetically and culturally pleasing surroundings” that employ the environment in beneficial ways “*without degradation, risk to health or safety, or other undesirable and unintended consequences*” (emphasis added) (42 USC 4321[101][b]).

The DOE has failed to achieve the public policy mandate articulated in NEPA by minimizing the administrative burden it imposes in preparing the Yucca Mountain project EIS (either the DEIS or FEIS) by choosing to ignore the local impacts of this massive transportation program and downplaying the potential of terrorism as a risk factor against these types of cargoes. These are precisely the type of unintended consequences that can degrade the environment that NEPA was designed to address. In particular, the DOE fails to comply with the regulatory purposes contained in NEPA that should govern their actions in its failure to achieve the public policy goals expressed in NEPA.

For example, both the DEIS and FEIS for this project fail to address the potential environmental impacts of this transportation program on each individual state involved or even attempt to aggregate groups of states with similar geographic and social compositions for such an analysis (DOE, 1999, 2002). The DOE does not consider the site-specific effect of transporting nuclear waste on states other than Nevada, collectively or individually. Neither the DEIS nor the FEIS analyzes the effects of moving across these states as part of this previously described massive effort to centralize the storage of these highly radioactive materials at the temporary or permanent storage facility.

Such omissions are a clear violation of the spirit of NEPA, as well as the application of this policy agenda. Section 102(2)(A) and (B) of NEPA compels

all Federal agencies to bring the environmental impact of any proposed action into play as a “proper factor” in its final plans for a project by using a “systematic and interdisciplinary approach” in planning each agency action. This is a “reordering of priorities” in agency decisions ranking environmental concerns at a high priority, but it is not a dictate that environmental concerns must always control the final plan (*Calvert Cliffs Coordinating Committee, Inc. v. U.S. Atomic Energy Commission*, 449 F.2d 1109, 1111 [DC Cir, 1971]). The EIS analyses for a project such as that set forth in the Yucca plans are intended to ensure that these environmental costs are properly considered. In the EIS, a “detailed statement” of the impact of the proposed action on the environment, factoring costs and describing alternative approaches, must be provided and alternative plans that would impact less significantly on the environment also must be considered (Id. at 1114). NEPA is broad in scope, “compelling consideration of any and all types of environmental impact of Federal action” (Id. at 1122). The EIS mandates that agencies planning such actions engage in a case-by-case balancing act and that balancing is to take into account the benefits of a proposal within the context of the environmental costs (Id. at 1123).

As noted earlier, under 42 USC 4332(2)(C), Federal agencies are required to file an EIS with “every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment.” The courts have interpreted this requirement to mean that agencies must take a “hard look” at environmental impacts and that hard look is to include considering the *cumulative effect* of individual projects that are proposed (*Kleppe v. Sierra Club*, 427 US 390, 410 [1976]). This collective consideration of the cumulative effects of individual acts or plans prevents a Federal agency from engaging in what is commonly referred to as “segmentation.” Under segmentation, an agency divides a project into many smaller units, thus resulting in the creation of smaller units, each of which have an apparently insignificant impact on the environment, where the sum of their total impact would not be found to be insignificant.

Council of Environmental Quality (CEQ) regulations prevent this segmentation of projects by specifically requiring that individual actions that are part of proposed agency plans that have similar characteristics, including such things as common geographic features or common timing, be reviewed for their cumulative impact (40 CFR 1508.25 [a][3] and 1508.27 [b][7]; *Natural Resources Defense Council v. Hodel*, 865 F.2d 288 [DC Cir, 1988]). This policy and regulatory mandate of program-level assessment helps ensure that the goals of NEPA are achieved.

In addition to Federal agencies masking the “cumulative effect” by creating smaller plans with impacts that are undetectable when analyzed separately, improper segmentation is also found where (a) a proposed action has “little or no independent utility and its completion may force the larger project to go forward whatever the environmental impacts” and where (b) it would be “unwise to undertake the first phase if subsequent phases were also not taken”

(*Hirt v. Richardson*, 1999 U.S. Dist. LEXIS 19403 [WD Mich, 1999]; 40 C.F.R. 1508.25 [a][1]).

It is important also to recognize the inverse effect that a program-level, as opposed to site-specific, EIS can have if it operates to hide a project's risks to the environment by obscuring significant site-specific concerns. If governmental activities are grouped together because of some common link created by common geographic characteristics or sequential timing, the grouping may then conceal the unique characteristics and risks to the environment that will be present at only particular points or places in the proposal. In short, these environmental impacts are diminished, or diluted, by being made part of a large-scale project. They appear to be less severe because they are spread out over greater amounts of time or larger geographic areas. In other words, "objects are larger than they appear in the mirror."

The U.S. Supreme Court implicitly recognized this possibility in *Baltimore Gas & Electric Co. v. Natural Resources Defense Council*, 462 U.S. 87 (1983). In this case, the Supreme Court decided a case about how the NRC determined that boards engaging in the licensing of nuclear power plants could assume that permanent storage of certain nuclear wastes would have no significant impact on the environment and would not be a factor in deciding whether to issue a particular license. In making this determination, the Court stated that a

key requirement of NEPA, however, is that the agency consider and disclose the actual environmental effects in a manner that will ensure the overall process, including both the generic rulemaking and the individual proceedings, brings those effects to bear on decisions to take particular actions that significantly impact the environment. (p. 96)

Although the Court found in that case that there had been a sufficient study of particular concerns, it noted that "an agency must allow *all significant environmental risks* to be factored into the decision whether to take the proposed action" (emphasis added) (p. 99).

Where a project has more particularized impacts, both program and site-specific EIS reports are required by the terms of NEPA. Thus, the question is left open for each Federal agency that prepares a proposal. This question is whether the program has site-specific impacts significant enough to require a site-specific EIS in addition to the program-level EIS and whether the programmatic assessment sufficiently addresses the proper local concerns.

In the case of the Yucca project, a dual level of EIS analysis (both site specific and programmatic level) should have been conducted. This would mean that the published project-level FEIS is deficient and should, at a minimum, be supplemented by a series of site-specific impact statements for each state, or state group, that has sufficiently common site characteristics.

Engaging in such a dual level of EIS analysis would not only satisfy the dictates and public policies of NEPA but would address an underlying and funda-

mental problem that has been a recurring theme in SNF disposal plans, the invocation of territorial protective instincts as a natural consequence of the moral panic created by those who are the agency decision makers behind these plans. For example, the pressure to site this storage facility in Nevada has continuously increased. According to the terms of the Nuclear Waste Policy Act (NWPA) of 1982, January 31, 1998, was the date by which the Federal government was to have begun accepting commercial SNF, a date at the time of this writing that has been passed by more than 3 1/2 years.

The pressures on politicians and the agencies involved are intense. The reaction of the state of Nevada, once it was designated as the only site to be considered, was to turn to the courts and present a variety of challenges to the process and decision (Mullett, 2001; Nuclear Waste Policy Amendments Act, 1987; Ross, 2002). Governmental policies and attempts to resolve the seemingly insoluble problem of what to do with the increasing amount of SNF have thus taken on an extremely adversarial posture, and court actions will become necessary to solve these dilemmas.

Gerrard (1997) explores this underlying problem when identifying that "fear" is created when "outsiders" are engaged in sending their "trash into your territory" (p. 1018). To date, these fearful reactions have not been given much deference in the law; in fact, the predominant needs of the nation have been found to override these local concerns under the Congressional commerce clause powers (*City of Philadelphia v. New Jersey*, 437 U.S. 617 [1978]).

Many observers believe that the terrorist attacks on September 11, 2001, may operate to increase the importance of these concerns. As one commentator noted, "It is obvious to even the most casual observer that the current accumulation of waste is infinitely more secure on-site than it would be during transport" (Adams, 2002, p. 10). As noted by the Ninth Circuit in its decision in *No Gwen Alliance v. Aldridge* (1988), there is no "national defense" exemption to NEPA. Security concerns regarding information in an EIS may require nondisclosure due to national security reasons but the requirements of NEPA must still be met (*Weinberger v. Catholic Action of Hawaii*, 1981).

Whether their legal relevance remains undecided, types of fearful reactions will still have significant impact on the level of societal acceptance of agency choices. The impact of this "territorial protection" reaction in connection with the Yucca project will impact the local and state-level concerns for transportation corridor jurisdictions. These impacts may conflict with the desires of Federal agencies and policy makers to underrepresent by selective study the potentials for environmental impacts. To date, the DOE has not shown any interest in doing comprehensive programmatic and/or site-specific EIS analysis because the agency does not recognize the risks these shipments pose to the multitude of jurisdictions the shipments will traverse or its managers do not feel a need to address the local concerns they will create. In particular, the DEIS and FEIS do not address these issues, and currently there is no indication that the DOE will reformulate the FEIS to address these concerns unless significant local legal

opposition based on NEPA requirements results in court decisions mandating this type of policy adjustment.

## CONCLUSIONS

The deliberate and self-motivated DOE actions regarding the Yucca project are designed to downplay the risk of terrorism and other transportation risk factors. This dissociation from the facts is important because the potential negative outcomes of such decisions are profound for local and state police, firefighters, and public safety officials. These are the same public officials who will be asked to respond to an accident involving the shipments of highly radioactive waste, to counteract an act of sabotage against these same shipments, and/or to deal with the outcomes of a full-on terrorist attack against the radioactive cargo.

Without proper programmatic and site-specific environmental analysis of the Yucca transportation effort, local and state agencies may be asked to respond to these highly dangerous environmental hazards without benefit of preincident awareness, training, and information. This is one area where the DOE's current policy can be challenged and specifically based on the improper analysis of such risks under the NEPA requirements.

Security experts recognize that the essential first step in providing safe and secure transportation for any cargo is the recognition of potential threats to those shipments. Therefore, the first recommendation for public officials in those Federal agencies associated with this project is to follow the dictates and public policy of NEPA and conduct a proper, complete, and comprehensive environmental assessment that does not improperly aggregate the risks and impacts of this project. Specifically, the DOE should withdraw the existing FEIS as viable documentation of the process and reformulate the analysis to include site-specific analysis for each of the other 40+ states impacted by this major Federal action.

In addition, to increase the protection of these shipments from potential risks associated with terrorism, the NRC should publicly state exactly what security regulations would be in place for the Yucca project and thus allow local and state governments to make their plans accordingly. Although some protection strategies have been offered, the NRC has yet to formalize their plans for these shipments and some concern has been expressed about this regulatory organization's willingness to accept this burden given the DOE's planning and management of this project (Halstead & Ballard, 1997b). In conjunction with specific clarification of security measures, the DOE should incorporate site-specific plans for training personnel, specific methodologies for the reimbursement of costs associated with training in transit emergency responder communities, and planning for both costs and logistics needed to provide equipment and funding to these stakeholders.

These items must be part of the EIS for the Yucca project. Such planning and preparation of the hundreds of thousands of first responders and their respective

emergency incident managers from across the country are not included in the current analysis. Such planning and preparation is essential for them to effectively handle any difficulties, environmental, social, and financial, that may occur. These agencies need to be prepared for the potential of an accident, an act of sabotage, a terrorist attack, and/or any other human-initiated event involving these shipments.

In the absence of proper Federal agency action to protect the environment from accidental or deliberate radiological contamination, local and state governments should initiate legal action against the DOE to force its compliance with the dictates of NEPA. In particular, they should file complaints based on the improper aggregation of local risks and how the planning codified in the DEIS and/or FEIS does not address the needs and concerns of their communities.

These conclusions demonstrate how recent calls for the need to mobilize the nation's law enforcement and defense resources to counteract terrorism can seriously impact other Federal agencies in unplanned ways. In the case of the Yucca project, these consequences include the need to formally recognize that terrorism is a risk factor in the transportation of highly radioactive cargoes as well as the need to formally consider these risk factors in the DEIS and FEIS for this project. The DOE shows reluctance to admit to these risks because they point out the serious shortcomings in their DEIS and FEIS development efforts.

Local and state governments who start to recognize the impacts of these actions as shipments begin to traverse their jurisdictions can hasten this recognition by the DOE if they legally challenge this agency to disaggregate the analysis of the Yucca Mountain project and formally analyze the site-specific impacts of this project on local and state governments affected by this proposed large-scale Federal action. As suggested by Flacks's theory, these local jurisdictions can use the existing policy formation process codified in NEPA to effect change in the DOE plans. This then would represent a policy change that would be from the grassroots upward, not from the Federal government downward.

## REFERENCES

- Adams, M. A. (2002, February). The Yucca Mountain fight is far from over. *Nevada Lawyer*, p. 10.
- Ballard, J. D. (1997). *A preliminary study of sabotage and terrorism as transportation risk factors associated with the proposed Yucca Mountain high-level nuclear waste facility*. Carson City, NV: Nuclear Waste Projects Office, NWPO-TN-018.96.
- Ballard, J. D. (1999, March). *Tracking terrorism related events: A call for a national reporting standard*. Paper presented at the annual meetings of the Academy of Criminal Justice Sciences, Orlando, FL.
- Ballard, J. D. (2000a). *Terrorism and political policy: Crisis and policy making indicators in the media during legislative action*. Unpublished doctoral dissertation, University of Nevada, Las Vegas.
- Ballard, J. D. (2000b). *Weapons of mass victimization: Considerations for the 21st century*. Paper presented at the United Nations Congress on terrorist victimization: Prevention, control and recover, Vienna, Austria.

- Ballard, J. D. (2002a). *Shelter-in-place: The necessary logic behind high-level nuclear waste security*. White paper submitted to the State of Nevada. Carson City, Nevada.
- Ballard, J. D. (2002b). *Testimony before the United States Senate*. Hearing on approving the site at Yucca Mountain, Nevada, for development of a repository for the disposal of high-level radioactive waste and spent nuclear fuel, pursuant to the Nuclear Waste Policy act of 1982. Committee on Energy and Natural Resources. Hearing date: May 22, 2002. Washington, DC: Government Printing Office.
- Baltimore Gas & Electric Co. v. Natural Resources Defense Council*, 462 U.S. 87 (1983).
- Barrett, L. (2002). Statement of Lake Barrett, Deputy Director Office of Civilian Radioactive Waste Management before the House Committee on Transportation and Infrastructure, Subcommittee on Highways and Transit and Subcommittee on Railroads. Hearing date: April 25, 2002. Washington, DC: Government Printing Office.
- Boyer, P. (1998). *Fallout: A historian reflects on America's half-century encounter with nuclear weapons*. Columbus: Ohio State University Press.
- Calvert Cliffs Coordinating Committee, Inc. v. United States Atomic Energy Commission*, 449 F.2d 1109 (DC Cir, 1971).
- City of Philadelphia v. New Jersey*, 437 U.S. 617 (1978).
- Cohen, S. (1972). *Folk devils and moral panics*. Oxford, UK: Blackwell.
- Council of Environmental Quality Rule, 40 C.F.R. § 1508.25(a) (2000a).
- Council of Environmental Quality Rule, 40 C.F.R. § 1508.27(b) (2000b).
- Department of Energy. (DOE). (1999). *Draft environmental impact statement for a geological repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250D). Washington, DC: U.S. Department of Energy, Office of Civilian Radioactive Waste Management.
- Department of Energy. (DOE). (2002). *Final environmental impact statement for a geological repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250D). Washington, DC: U.S. Department of Energy, Office of Civilian Radioactive Waste Management.
- Department of Justice. (1998). *Terrorism in the United States*. Washington, DC: Author.
- Flacks, R. (1988). *Making history: The American left and the American mind*. New York: Columbia University Press.
- Gerrard, M. B. (1997, winter). *Territoriality, risk perception, and counterproductive legal structures: The case of waste facility siting*. Chicago: Environmental Law Reporter.
- Halstead, R., & Ballard, J. D. (1997a). *Nuclear waste transportation security and safety issues: Potential transportation impacts of S.104 and HR 1270*. Carson City, NV: Nuclear Waste Projects Office.
- Halstead, R., & Ballard, J. D. (1997b). *Nuclear waste transportation security and safety issues: The risk of terrorism and sabotage against repository shipments*. Carson City, NV: Nuclear Waste Projects Office.
- Halstead, R., Ballard, J., & Dilger, F. (2001a, September). *Nuclear waste transportation terrorism and sabotage: Critical issues*. Paper presented at the 13th annual symposium on packaging and transportation of radioactive materials, PATRAM 2001 Conference, Chicago.
- Halstead, R., Ballard, J., & Dilger, F. (2001b, February/March). *State of Nevada studies of potential terrorism and sabotage against spent fuel shipments*. Paper presented at the Waste Management 2001 Conference, Tucson, AZ.
- Hirt v. Richardson*, 1999 U.S. Dist. LEXIS 19403 (WD Mich, 1999).
- Hoffman, B. (1998). *Inside terrorism*. New York: Columbia University Press.
- Kleppe v. Sierra Club*, 427 US 390 (1976).
- Lesser, I. O., Hoffman, B., Arquilla, J., Ronfeldt, D., & Zanini, M. (1999). *Countering the new terrorism*. Santa Monica, CA: RAND.

- Luna, R., Neuhauser, K., & Vigil, M. (1999). *Projected source terms for potential sabotage events related to spent fuel shipments to a Yucca Mountain high level waste repository* (Document # SAND99-0963). Albuquerque, NM: Sandia National Laboratories.
- Mahaley, J. S. (2001). *Statement of the Director of the DOE Office of Security submitted to the United States House of Representatives, Committee on the Budget. Hearing date: December 5, 2001*. Washington, DC: Government Printing Office.
- Meserve, R. A. (2001). *Nuclear security infrastructure. Statement by the Chairman of the Nuclear Regulatory Commission submitted to the United States Senate, Committee on Environment and Public Works. Hearing date: November 1, 2001*. Washington, DC: Government Printing Office.
- Mullett, M. A. (2001). Financing for eternity the storage of spent nuclear fuel: A crisis of law and policy precipitated by electronic deregulation will face new president. *Pace Environmental Law Review*, 18, 383-457.
- National Environmental Policy Act, 42 U.S.C.A. § 4321 et. seq. (1969).
- National Environmental Policy Act, 42 U.S.C.A. § 4321 et. seq. (2002).
- Natural Resources Defense Council v. Hodel*, 865 F.2d 288 (DC Cir, 1988).
- No Gwen Alliance v. Aldrige*, 841 F.2d 946 (9 Cir, 1988).
- Nolan, J. E. (1999). *An elusive consensus: Nuclear weapons and American security after the cold war*. Washington, DC: Brookings.
- Nuclear Waste Policy Act of 1982, 42 U.S.C.A. § 10222 (1982).
- Nuclear Waste Policy Amendments Act of 1987, 42 U.S.C.A. § 10101-10279 (1987).
- Pearson, G. (1983). *Hooliganism: A history of respectable fears*. London: Macmillan.
- Rabkin, N. J. (2000). Combating terrorism: Linking threats to strategies and resources. Testimony before the Subcommittee on National Security, Veterans Affairs, and International Relations, July 26, 2000. U.S. House of Representatives. General Accounting Office GOA/T-NSIAD-00-218.
- Roberts, B., & Moodie, M. (2000). *Combating NBC terrorism: An agenda for enhancing international cooperation*. Alexandria, VA: Chemical and Radiological Arms Control Institute, Lawrence Livermore National Laboratory.
- Ross, D. P. (2002). Yucca mountain and reversing the irreversible: The need for monitored retrievable storage in a permanent repository. *Vermont Law Review*, 25, 815-852.
- State of Nevada. (2002). *Nevada's position on how DOE must approach SNF and HLW transportation planning*. Retrieved August 2002 from <http://www.state.nv.us/nucwaste/news2002/nn11757.htm>
- Stern, J. (1999). *The ultimate terrorists*. Cambridge, MA: Harvard University Press.
- Tucker, J. B. (2000). *Toxic terror: Assessing terrorist use of chemical and biological weapons*. Cambridge, MA: MIT Press.
- Weinberger v. Catholic Action of Hawaii*, 454 U.S. 139 (1981).

**JAMES DAVID BALLARD, Ph.D.**, is an assistant professor of sociology at California State University, Northridge. He has studied issues related to, and taught classes on, terrorism for more than 8 years. He has testified in both the U.S. Senate and U.S. House and published extensively on the subject of radiological attacks against nuclear waste shipments.

**KRISTINE MULLENDORE, J.D.**, is an associate professor of criminal justice and legal studies at Grand Valley State University and a former state assistant prosecuting attorney. She teaches a variety of legal education courses and has published articles on various technological-related legal issues as well as articles about the civil rights of female inmates and legal issues in forensic psychology. She has also presented a variety of papers on the subject of legal issues relating to terrorism and attacks against radiological shipments.