

Background

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Blue Ribbon Commission on Nuclear Waste: Missing Opportunity for Lasting Reform

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Abstract: *The Blue Ribbon Commission on America's Nuclear Future has released its draft recommendations on how to resolve America's nuclear waste dilemma. The Blue Ribbon Commission has provided some sound analysis and introduced some new ideas, but overall, it has focused more on the symptoms of America's failed approach to nuclear waste management than addressing the system's structural deficiencies. U.S. nuclear waste management must transition to a more market-oriented system. Moving the responsibility for nuclear waste management away from the federal government will be difficult, but it is necessary for an economically rational and sustainable resolution to America's nuclear waste dilemma.*

The draft recommendations from President Barack Obama's Blue Ribbon Commission (BRC)¹ on America's Nuclear Future fall short of fixing America's nuclear waste dilemma. Though some of the recommendations were positive, they would, if implemented, not result in the fundamental reforms necessary for an economically sustainable and technologically diverse approach to nuclear power to emerge.²

While acknowledging the many challenges and failures of America's nuclear waste management and disposal program, the BRC unwisely accepts that the basic structure of the system is sound. This acceptance leads to recommendations that focus more on symptoms than on underlying flaws. Real progress requires first identifying the real problems.

There are three fundamental problems with nuclear waste management in the United States:

Talking Points

- Current recommendations of the Blue Ribbon Commission (BRC) on America's Nuclear Future focus more on the symptoms of America's failed approach to nuclear waste management than on addressing the system's structural deficiencies.
- Simply moving a function from one government agency to another (even if the new agency is called a "federal corporation") without changing the system fundamentals only perpetuates existing deficiencies while creating the perception of action.
- Nonetheless, it does provide a framework that, with some modification, could yield a long-term solution.
- The modifications include transitioning responsibility for nuclear waste management to waste producers and allowing market-based pricing for waste management services.
- Despite the Obama Administration's myopic and misguided insistence that the BRC preclude any consideration of Yucca Mountain, addressing the issue head-on would add substantial credibility to the final report.

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<http://report.heritage.org/bg2600>

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1. **No long-term geologic storage.** Deep geologic storage like that proposed for Yucca Mountain, Nevada, provides a safe, long-term solution and thus is critical to any comprehensive nuclear waste management plan. To date, despite having spent approximately \$15 billion in electricity rate payers' and taxpayers' money on Yucca Mountain and a statutory mandate to do so, the U.S. still has no functional geologic repository for nuclear waste.
2. **Waste producers are relieved of their responsibility for waste management.** Private nuclear plant operators produce waste, but under current law the federal government is responsible for managing it. This removes the incentive for those who financially depend on waste production, the nuclear utilities, to have any interest in how the waste is managed because the federal government is wholly responsible. Washington, however, has proved unable to implement anything close to a workable solution. This outcome is predictable given a structure that fundamentally misaligns incentives, responsibilities, and authorities. The nuclear industry, which is fully capable of running safe nuclear power plants, is likewise fully capable of managing its own waste and should have the responsibility to do so.
3. **No specific price for specific services rendered.** Under the current system, nuclear utilities produce waste, and then pay the federal government a flat fee for an undefined, not-rendered service. Accurate pricing is critical to any efficient market place. Prices provide suppliers and purchasers a critical data point to determine the attractiveness of a product or service, and gives potential competitors the information they need to introduce new alternatives.

Although the BRC is missing an opportunity to address major underlying issues, it does provide a framework that, with some modification,

could yield a long-term solution. To achieve it, the BRC's final draft should consider the following recommendations.

Nuclear Waste Management Responsibility

The centerpiece of the BRC's recommendations is its proposal to establish a federal corporation "dedicated solely to implementing the waste management program and empowered with the authority and resources to succeed." While the general proposition could help transition the United States toward a more market-based system, the BRC's version will not work because it maintains the current system's basic underpinnings. A government-based entity, separate from waste production, will remain responsible for waste management and disposal, relieving producers of all responsibility, and there would remain no direct connection between services rendered and pricing.

Though the BRC goes to great lengths to define the responsibilities of the new organization, these responsibilities are similar to those of the Department of Energy under the current system. In both cases, the federal government is fully responsible for all nuclear waste management and disposal. Simply moving a function from one government agency to another (even if the new agency is called a federal corporation) without changing the system fundamentals only perpetuates existing deficiencies while creating the perception of action.

This approach assumes that the basic premise of the current system is correct—that nuclear waste management and disposal falls ideally within the purview of the federal government. It essentially blames the current problems on a misplaced federal bureaucracy when the actual problem is relegating a commercial activity to a government bureaucracy. Instead of trying to modify a fundamentally flawed system, the BRC's final report should recommend transferring the responsibility for nuclear waste

1. Blue Ribbon Commission on America's Nuclear Future, "Draft Report to the Secretary of Energy," July 29, 2011, at http://brc.gov/sites/default/files/documents/brc_draft_report_29jul2011_0.pdf (August 10, 2011).
2. Jack Spencer, "Introducing Market Forces into Nuclear Waste Management Policy," testimony to the Reactor and Fuel Cycle Technology Subcommittee of the Blue Ribbon Commission on America's Nuclear Future, Heritage Foundation Testimony, August 30, 2010, at <http://www.heritage.org/research/testimony/introducing-market-forces-into-nuclear-waste-management-policy>.

management and disposal away from Washington and toward the private sector.

The BRC's recommendation to create a federal corporation could facilitate that transition to private-sector responsibility. Though the objective should be to remove federal responsibility for nuclear waste management and disposal, near-term privatization is likely not practical. This is because the federal government is obligated by virtue of signed contracts to take responsibility for the disposal of nuclear waste produced at existing plants and the nuclear industry, through fees levied on nuclear power users, and has already paid \$38.5 billion (about \$750 million annually) for that service.³ The result is that the federal government is currently responsible for disposing of a total of about 70,000 tons of waste. A federal corporation, limited in scope, could be the correct entity to take responsibility for disposing of that waste.

In preparing its final recommendations, the BRC should emphasize closely realigning incentives, responsibilities, and authorities in nuclear waste management. These recommendations should include:

- **Creating a federal corporation with a limited scope of responsibility, limited duration, and access to the Nuclear Waste Fund.** The federal corporation should have two basic responsibilities. First, it should site a geologic repository. If the repository is located at Yucca Mountain, as current law stipulates, then the federal corporation should assume the Department of Energy's responsibilities of completing the Yucca construction and operation permit application. Once issued, the permit to operate Yucca should be transferred to a non-federal entity to construct and operate the facility. If the Yucca location is deemed technically deficient, the corporation should be responsible for overseeing the selection of a new location. However, the permit application should be prepared by whichever entity will eventually construct and operate the facility.

The corporation's second responsibility should be to assure proper disposal of the existing nuclear waste for which the federal government is cur-

rently responsible and it should receive near-term access to the approximately \$25 billion in the Nuclear Waste Fund to finance its activities. This would allow the federal government to meet its existing contractual and regulatory waste disposal responsibility while allowing an eventual transfer of waste management responsibility to the private sector. It would also allow the Nuclear Waste Fund to be used for its intended purpose. Most important, however, it would create a significant market demand for privately offered waste management services like storage, transportation, and processing. Businesses would naturally emerge to meet this demand that would then be available for future private waste management operations.

Finally, the transitional federal corporation must be mission-specific and its creation must be accompanied by a dissolution plan. Once its two responsibilities are met, it should either be privatized or abolished.

- **Removing the federal role in geologic repository operations.** All geologic repositories should be operated by non-federal entities. The management organizations could be private, for-profit, non-profit, state-based, or a combination thereof. Among their most basic responsibilities would be to set market-driven prices for waste emplacement. Market-driven prices would take waste characteristics, such as heat load, toxicity, and volume as well as repository space into consideration. Waste producers would then have different variables to consider when deciding which fuels to purchase and what nuclear technologies to use as these decisions would affect how they would ultimately manage their waste. It could be most cost effective to place waste directly in the repository for some utilities, while others might find interim storage or another process to be more economical. Market-based price signals would encourage new technologies, such as small nuclear reactors that have different waste streams, and services, such as reprocessing, to be introduced as new market demands emerge.

3. Nuclear Energy Institute, "Costs: Fuel, Operation, and Waste Disposal," at http://www.nei.org/resourcesandstats/nuclear_statistics/costs/ (August 10, 2011).

- **Transferring responsibility for management of new waste to waste producers.** As noted above, the federal government (through the corporation) should meet its responsibility to dispose of existing waste. But, moving forward, nuclear utilities should be made responsible for waste they produce. This responsibility should be accompanied by a repeal of the fee—1/10 of 1 cent per kilowatt hour of electricity produced at nuclear power plants—paid to the federal government for waste disposal. Utilities would then bear the responsibility and also have the freedom to choose how best to manage their waste. The federal role would be to ensure that private waste management activities meet adequate regulatory standards. In essence, waste management would be treated the same way the rest of the nuclear industry is treated. The federal government is not responsible for getting the fuel to the reactor and it should not be responsible for removing it.
- **Allowing the federal corporation to broker waste management services.** To further ensure that nuclear waste producers have access to waste management services, the federal corporation could be permitted, for a fee, to broker waste management services for private industry. This would allow waste producers to hire the federal corporation to contract for waste management services on their behalf. It may be the case that, as the corporation gains experience and establishes relationships with waste management providers, it can negotiate better terms based on volume, or other variables, for specific services. Or waste producers may simply find the convenience of contracting with the federal corporation to manage its waste to be worth a premium. Waste producers would not be obligated to seek waste management services through the federal corporation. This brokering service would only be available as long as the federal corporation is carrying out its chartered mission, and would not justify its existence as a public entity beyond those specified responsibilities. However, one can imagine a business case where brokering such services could provide the basis for future privatization. Ultimately, while such an arrangement is not

necessary, it does provide an additional transition step toward the new market-based system.

- **Limiting the federal government's long-term role to setting broad regulatory guidelines and taking final title of decommissioned repository sites.** Once the federal corporation carries out its mission and is dissolved, the federal government should have two roles. First, it should set the broad regulatory guidelines for waste management just as it does for other parts of the nuclear industry. Second, the federal government should take final legal possession, what is commonly referred to as "title," of geologic repositories and their contents as they are decommissioned. While private actors should manage nuclear waste and finance its final disposal, including long-term maintenance, only the federal government has the guaranteed longevity to credibly take long-term possession and liability for whatever elements of waste end up in geologic repositories after decommissioning, when the repository would be permanently sealed.

Geologic Storage

Of the seven key elements addressed by the BRC, two are dedicated to geologic storage. One calls for a new, consent-based approach to searching out future nuclear waste management facilities, while the other calls for a prompt effort to develop one or more geologic repositories. While clearly stating the need for geologic storage is important, the BRC's charge from the Secretary of Energy to rule out any consideration of the Yucca Mountain facility weakens the utility of its otherwise reasonable recommendations. For this reason, the BRC should address Yucca in its final recommendations, which is allowable per the BRC's charter that gives no direction to preclude Yucca. Indeed, it does the opposite, by directing the BRC to consider *all* options. It states that the Secretary of Energy established the commission at the direction of the President to:

conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel, high-level

waste, and materials derived from nuclear activities.⁴

Furthermore, the BRC's recommendations on geologic storage reflect its more general flaw—that nuclear waste management should remain within the purview of the federal government. These problems can be addressed in the final report by the following actions:

- **Address Yucca Mountain head on.** The BRC should state what it believes should happen with Yucca Mountain based on the best science and evidence available. If its members believe Yucca should be shut down, it should state why and provide a recommendation for disengaging from Yucca. If, on the other hand, it finds that Yucca should be pursued, perhaps as one of a number of options, then the commission should provide recommendations on how to move forward. Such a conclusion could reject the current Yucca program while proposing an alternative. Such an alternative could embody the recommendations of the BRC's consent-based approach where the people of Nevada are given control over the future of the Yucca facility. Even though the Secretary of Energy directed the BRC to pretend Yucca Mountain does not exist, nothing in the BRC's charter prevents it from facing facts. For the sake of the commission's credibility, it must honestly and directly address Yucca in its final conclusions.
- **Limit the federal government's responsibility to siting and permitting one geologic repository.** Whether at Yucca or elsewhere, the federal government's role should be limited to developing a single geologic repository. This repository should at least match the capacity of Yucca Mountain, which is sufficient to hold all of the waste produced by America's existing commercial reactors over their expected lifetimes. Once sited and permitted, a non-federal entity should operate the repository. Developing future repositories should be the responsibility of non-federal actors.
- **Rescind recommendation to develop one or more interim storage facilities.** The BRC is correct that interim storage of nuclear waste, like

geologic storage, is a critical part of any comprehensive nuclear waste management system. Further, it correctly points out a myriad of reasons why interim storage makes sense, such as allowing for fuel removal from shutdown plants. However, the federal government should neither construct such a facility nor mandate that one be built. Instead, private-sector interim storage facilities would emerge to meet the demand for such services in a market-based system. The federal government's role should be to ensure that those willing and able to develop appropriate interim storage facilities have an efficient and predictable regulatory environment. The BRC makes very sound recommendations toward this end.

Financing Nuclear Waste Management and Disposal

The BRC correctly spent significant effort on making recommendations on how nuclear waste management should be financed. Indeed, it correctly identifies many of the problems with the current system, namely that it does not work as intended and that continuing to collect fees for services not rendered is patently unfair. It also correctly recognizes that government accounting rules make gaining access to collected funds extraordinarily difficult. Finally, it recognizes that building a sustainable nuclear waste policy program is nearly impossible as long as it relies on the inherently inefficient and unpredictable congressional appropriations process.

Separating finance issues from larger organizational issues is impossible. The two are inherently related. How nuclear waste activities are financed will ultimately depend on who is responsible for its disposal. Therefore, any rational financing scheme must be developed congruently with larger organizational reform. So if one accepts the BRC's general proposition that the federal government should remain responsible for nuclear waste management, its recommendations on finance reform make sense. In reality, since its recommended actions would do little to change the underlying system fundamentals, the same inefficiencies that result from federal control would ultimately resurface.

4. Blue Ribbon Commission on America's Nuclear Future, "Charter," March 1, 2010, at <http://brc.gov/index.php?q=page/charter> (August 10, 2011).

Similar to its larger organizational recommendations, the BRC does provide a framework from which a more market-based, economically rational system could be constructed. Indeed, the BRC introduces some elements that are critical to a sustainable waste management system. Instead of attempting to modify the current system, the BRC should develop recommendations to allow the United States to transition to a new model for financing nuclear waste management while ensuring that existing resources are used for their intended purposes. To achieve this transition, the BRC's final recommendations should include the following:

- **Congress should immediately begin transferring the Nuclear Waste Fund to the new organization.** The BRC acknowledges that whoever is ultimately responsible for waste management and disposal must gain access to the \$25 billion in the Nuclear Waste Fund, and puts forth a basic plan to achieve this. The plan would allow limited access to those funds 10 years after the new organization is established. Near-term operations would be funded through ongoing fee payments. This approach, however, assumes that the new organization would maintain ongoing responsibility for waste management and disposal. Under the modifications proposed in this analysis, the new organization would only be responsible for waste produced to date, and should be funded through fees already paid. Thus, the new organization would need immediate access to the Nuclear Waste Fund, although disbursement could occur over time.
- **Congress should mandate the creation of utility-specific or plant-specific escrow accounts to fund waste management activities.** An innovative concept in the BRC report is to create escrow accounts held by an independent third party into which nuclear waste fees are paid. Only that amount appropriated by Congress for waste disposal activities would be paid to the U.S. Treasury out of the escrow accounts. This would ensure that only those funds actually being spent on waste disposal would go to the government thus preventing additional funds from being placed into the Nuclear Waste Fund.

This specific idea is not consistent with the overall reform that is necessary, but the introduction of waste management financed through escrow accounts is consistent with fundamental reform. A better model would mandate that nuclear utilities place in escrow adequate funds to dispose of whatever waste is being stored on site. No funds would ever go to the U.S. Treasury, and congressional appropriators would have no role. Utilities would simply pay for waste management and disposal services on an as-needed basis. This approach would benefit nuclear utilities by ensuring they have access to the funds set aside for waste disposal and it would protect the American taxpayer by making sure adequate disposal funds will be available even if a plant owner goes out of business.

- **Congress should repeal the fee paid to the federal government for future waste disposal services.** Since, under these reforms, existing nuclear waste disposal would be financed through existing nuclear waste fund fees, and future disposal through the privately held escrow accounts, there would be no need to continue paying the nuclear waste fee to the federal government.

Building on the BRC's Recommendations

The Blue Ribbon Commission on America's Nuclear Future has an opportunity to resolve America's nuclear waste dilemma. While it has provided a credible analysis and introduced some new ideas, it has focused more on the symptoms of America's failed approach to nuclear waste management than addressing the system's structural deficiencies. Nonetheless, its recommendations provide a starting framework that could be modified to address these difficult issues. Moving the responsibility for nuclear waste management away from the federal government will be difficult, but it is necessary to for an economically rational, technologically diverse, and sustainable resolution to America's nuclear waste dilemma.

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