Date: January 19, 2018
From: Robert Halstead, Nevada Agency for Nuclear Projects
To: Nevada Congressional Delegation
Subject: Comments on Nuclear Waste Policy Amendments Act of 2017, H.R. 3053

Introduction

The Nuclear Waste Policy Amendments Act of 2017, H.R. 3053, introduced by Rep. John Shimkus [R-Il-15], was reported by the House of Representatives Committee on Energy and Commerce, after being discharged by the House Natural Resources and Armed Services Committees, and placed on the Union Calendar (Calendar No. 259) on October 19, 2017. The Committee Report is available at: https://www.congress.gov/congressional-report/115th-congress/house-report/355. The bill can be tracked at: https://www.congress.gov/bill/115th-congress/house-bill/3053. The bill was introduced June 26, 2017, after subcommittee mark-up, and adopted with amendments at the full Committee mark-up, by a vote of 49 to 4, on June 28, 2017. The Congressional Budget Office (CBO) released its cost estimate on October 4, 2017. As of this date, the schedule for consideration of H.R. 3053 on the House floor is uncertain.

Overview

H.R. 3053 would restart the forced siting of a high-level nuclear waste repository at Yucca Mountain in Nevada. H.R. 3053 would continue and expedite the primary provision of the Nuclear Waste Policy Amendments Act (NWPAA) of 1987 [42 U.S.C. 10172], which designated Yucca Mountain as the only candidate site to be studied for a geologic repository. During the Subcommittee on Environment hearing on April 26, 2017, four Nevada Members of Congress testified in support of H.R. 456, the Nuclear Waste Informed Consent Act, which would extend consent to Nevada and affected local and tribal governments regarding the Yucca Mountain project. Neither the Subcommittee nor the Committee considered amending H.R. 3053 to extend this consent. In stark contrast, the Committee voted to adopt a consent-based siting process that parallels the provisions of H.R. 456, but only for consolidated interim storage facilities, referred to in the bill as "Monitored Retrievable Storage" (MRS) facilities. The bill would also direct the U.S. Nuclear Regulatory Commission (NRC) to accelerate the licensing process for Yucca Mountain.

The bill also would impact U.S. Department of Energy (DOE) operations in other states. Sec. 604 (b), which transfers certain DOE defense, demonstration, and research nuclear waste functions to the Director of the DOE Office of Civilian Radioactive Waste Management (OCRWM), could significantly impact DOE facilities and activities in Idaho, New Mexico, New York, South Carolina, Tennessee, Washington, and other states.

Implications for the Proposed Yucca Mountain Repository

H.R. 3053 changes the amount of waste that can be stored at Yucca Mountain, beginning the process of making Yucca Mountain the nation's only high-level nuclear waste repository, a major change in policy. This is clearly what Chairman Shimkus

intended in the June 26th version of the bill. Section 203 (a)(1) completely eliminates the current 70,000 metric ton capacity limit on first repository emplacements until a second repository is in operation. The full Committee, on June 28th, retained the capacity limit on first repository emplacements by amendment in Section 202 (b), but increased it to 110,000 metric tons. If this change is permitted, it indicates that Congress could further revise upward or completely eliminate the capacity limit at any time.

Elimination of the second repository requirement would be a major change in policy. Development of a second repository is a fundamental provision of the 1982 NWPA, retained in spirit in the 1987 NWPAA. The 1987 NWPAA deferred the second repository question to a report to be submitted by the Secretary of Energy, between 2007 and 2010, on the need for a second repository. The Secretary's December 2008 report to the President and Congress, while encouraging the elimination of the capacity limit on Yucca Mountain, recommended that the deferral of a decision on a second repository be retained, pending a possible need due to uncertain future nuclear power industry conditions and waste generation.

The original intent of the second repository provision was to implement the recommendation of the March 1979 Interagency Review Group Report that multiple repositories sited on a regional basis were needed to accommodate projected waste inventories, reduce nationwide transportation impacts, foster regional equity, and provide redundancy that would prevent paralysis of the waste management system in the event of unexpected shutdown of the first repository.

H.R. 3053 would eliminate the prohibition on the location of a monitored retrievable storage facility in Nevada. Sec. 202 (b) would eliminate a major provision of the 1987 NWPAA that was intended to protect Nevada's interests. Governor Sandoval has previously notified the Committee and DOE that the State of Nevada is opposed to any siting of an interim storage facility in Nevada. If this provision were enacted, the State is concerned that spent nuclear fuel and high-level radioactive waste could be shipped to Nevada for surface storage and then abandoned, without the construction of a permanent geologic repository.

H.R. 3053 would accelerate the NRC licensing process for DOE's Yucca Mountain repository application by providing certain land and water rights to DOE and by expediting the NRC licensing proceeding and changing the licensing procedures. The NRC staff's Safety Evaluation Report for Yucca Mountain (NUREG-1949, Vol. 5), published in January 2015, concluded that a construction authorization (CA) could not be issued because the regulatory requirements regarding ownership and control of the land where the repository would be located and certain water rights requirements had not been met. H.R. 3053 is intended to resolve these land and water issues.

Sec. 201 would expedite the transfer of federal land interests to DOE from other agencies to give DOE full control of the Yucca Mountain site. Nine of the bill's 50 pages relate to land acquisition in one way or another. However, the provisions of H.R. 3053 originally intended to exempt DOE from State of Nevada water laws and air quality permitting requirements were

deleted by the manager's amendment on June 28, 2017. The deletion of the original water and air provisions appeared to pass the full Committee by a unanimous voice vote.

Sec. 202 (b) would impose a new deadline requiring NRC to approve or disapprove DOE's Yucca Mountain application for a construction authorization within 30 months of enactment (but appears to retain the current provision allowing NRC to request a one year extension). Other provisions in Sec. 202 (b) are generally intended to expedite NRC consideration of future DOE license amendments, related infrastructure activities, environmental analyses, and off-site connected actions.

Sec. 601 invites federal agency review of repository regulatory requirements that, while not clearly intended to apply to the Yucca Mountain construction authorization, could still impact the later stages of the licensing proceeding. On one hand, Sec. 601 (b) confirms that the site-specific Environmental Protection Agency (EPA) radiation protection standard for Yucca Mountain, mandated by the Energy Policy Act of 1992, is the effective standard for a licensing decision by NRC on the Yucca Mountain application for construction authorization. Yet Sec. 601 (a) would invite the Administrator of the EPA to change the repository radiation protection standards (40 CFR 197) after NRC construction authorization but before NRC final licensing approval for waste receipt and emplacement and would invite NRC to change the repository technical requirements and criteria (multiple barriers, retrieval, monitoring, closure, etc.) before NRC final licensing of Yucca Mountain. This could create a situation in which a future Congress could repeal the site-specific standard requirement for Yucca Mountain, and EPA and NRC could promulgate amended or revised rules for deciding on a license amendment, following construction authorization, if new information obtained during construction of Yucca Mountain places compliance in doubt. It could also conceivably result in the elimination of requirements for installation of engineered barriers, such as the very expensive titanium drip shields.

Implications for Transportation Routes through Las Vegas (Title II, Sec. 206)

DOE's 2008 Final Supplemental Environmental Impact Statement (EIS) for Yucca Mountain proposes a transportation plan that would result in weekly shipments of spent nuclear fuel and high-level radioactive waste through Las Vegas for 50 years or more. H.R. 3053 entrusts selection of routes to avoid Las Vegas to DOE, the same agency that after 20 years of transportation studies, selected a preferred rail route, the Caliente rail alignment that would use the Union Pacific Railroad mainline through downtown Las Vegas, in close proximity to the world-famous Las Vegas Strip. The DOE transportation plan also includes highway routes to Yucca Mountain that would use the heavily traveled Las Vegas Beltway (I-215) for thousands of truck shipments.

The bill does not require DOE to select routes to avoid Las Vegas; it says DOE "should consider" such routes "to the extent practicable." There is no evidence in past DOE transportation studies that DOE considers avoiding Las Vegas either practicable or practical. If

avoiding Las Vegas was easy, DOE would likely have already selected routes that would avoid Las Vegas.[1]

The bill has no enforcement mechanism for transportation routing decisions, other than the statement "It is the sense of the Congress that" DOE should do something, and the threshold definition of that something is that DOE "should consider" such routes. The relevant case law on previous enactments of similar statutory language indicate the bill's "should consider" language to DOE only means that DOE should consider avoiding Las Vegas. It would not require DOE to actually select routes that would avoid Las Vegas.

The authors of the bill could have included language that would specifically prohibit DOE from shipping spent nuclear fuel and high-level radioactive waste through Las Vegas. The authors chose not to do so. As presently worded, Sec. 206 would not prohibit DOE shipments to Yucca Mountain through Las Vegas.

Implications for Host State Benefits Agreements (Title IV)

The bill ignores Nevada's position, stated by Gov. Sandoval in a letter to Chairman Shimkus on April 21, 2017: "No amount of monetary benefits can compensate for the coerced selection of an unsafe site."

Unless the Committee Report provides legal analysis that supports the mandatory allocation funding provisions in Title V, the bill cannot guarantee that future Congresses will pay the promised monetary benefits ($15-30 million per year before waste receipts, $375 million upon first receipt, and $37 million annually thereafter) nor deliver the promised preferences regarding future federal projects, education grants, and contracts. No enforcement mechanisms are specified in the bill.

The Committee Report states that Nevada would receive "nearly $4 billion over the course of the repository project," which is stated to be 120 to 130 years. [Pp. 31, 36, 38] The bill contains no provision for adjusting the payments to Nevada for inflation. Past experience with inflation in the United States, as measured by the Consumer Price Index (CPI), suggests that the value of those dollars could decline significantly over 25 years, let alone over a century. The purchasing power of the dollar, as measured by the CPI, fell by more than one-half in the quarter-century between the first full year of DOE implementation of the NWPA (1983) and DOE filing its Yucca Mountain license application with the NRC (2008).[2]

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[1] The separate matter of DOE voluntarily agreeing to use highway routes that avoid Las Vegas for truck shipments of low-level radioactive waste to the Nevada National Security Site was raised during the Subcommittee on Environment hearing on July 7, 2016, in a question and answer exchange between Chairman Shimkus and Nevada State Senator Joe Hardy. DOE has agreed to abide by this extra-regulatory arrangement for more than a decade, but ensuring that DOE contract carriers avoid Las Vegas has required constant vigilance both by DOE and the State of Nevada.

[2] The CPI rose from 99.6 in 1983, to 215.3 in 2008, an increase of 116 percent. The base year for the CPI is 1982-1984 = 100. The U.S. Department of Labor Bureau of Labor Statistics (BLS) calculates the CPI on a monthly basis. The Federal Reserve Bank of Minneapolis publishes a summary of the annual CPI since 1913, updated quarterly, at https://minneapolisfed.org/community/financial-and-economic-education/cpi-calculator-information .

The bill does not address the amounts of funding that would be needed for participation in licensing. Federal funding for State, local, and tribal government participation in the NRC licensing proceeding and oversight and monitoring of the DOE program must be provided from the Nuclear Waste Fund and cannot be considered to be a benefit.

The bill ignores potential adverse economic impacts that could result from developing Yucca Mountain or any other repository site, including uncertainty about liability (for example, limitations on liability for damages caused by DOE contractors), compensation for accident impacts that are not addressed under the Price Anderson Act (for example, the cost of precautionary evacuation following a transportation accident, reduction in property values resulting from a transportation accident, or business losses resulting from a transportation accident), and adverse economic impacts potentially resulting from routine operations.

The bill states that acceptance or use of economic benefits by Nevada "shall not be considered to be an expression of consent, express or implied, to the siting of repository in such State."

Implications for Interim Storage (Title I)

Title I Monitored Retrievable Storage (MRS) would amend the current statutory basis [42 U.S.C. 10161] for consolidated interim storage, to authorize DOE to take title to commercial spent nuclear fuel at MRS facilities. It would allow DOE to begin development of one such facility prior to final NRC action on the Yucca Mountain license application. The bill creates a consent-based siting process for MRS facilities, requiring approval by the host state Governor, any affected unit of local government, and any affected Indian tribe. However, DOE could not receive spent fuel for storage at the MRS before a final NRC approval or disapproval of the Yucca Mountain license application. The bill authorizes a minimum of $50 million for MRS development for FY 2020, 2021, and 2022; and 10 percent of Waste Fund appropriations for FY 2023, 2024, and 2025. The bill authorizes benefits payments to host states (in consultation with local governments) totaling $5 million per year before waste receipts and $10 million per year thereafter. H.R. 3053 retains the 1987 revocation of MRS sites in the State of Tennessee, including Oak Ridge. [42 U.S.C. 10162(a)]

Implications for Program Funding (Title V)

The Committee Report states that the purpose of Title V is to reform portions of the financing mechanism "to more equitably treat ratepayers, provide certainty to DOE's program management, and make it easier for Congress to appropriate Nuclear Waste Fund money for its intended purposes, without taking resources away from other priority programs across the Federal government." [p. 34] Mandatory annual allocation of $370 million to DOE, after waste is first received at the repository, "would prevent future political interference through the appropriations process." [p. 38]

Close examination reveals no basis for concluding that H.R. 3053 would establish a workable mechanism for funding the high-level nuclear waste program for the first ten years after enactment, or over the 120-130 year operating life of the proposed Yucca Mountain repository. Neither the Committee Report nor the CBO analysis [included in the Committee Report at pages

44-57] provide a life-of-operations, year-by-year forecast of nuclear waste program expenditures and income, comparable to the future income and disposal cost estimates reported in the DOE 2008 Total System Life Cycle Cost (TSLCC) Analysis[3] nor the 2013 DOE Fee Adequacy Report.[4] Contrary to stated intentions, H.R. 3053 might well create greater political conflicts within the congressional appropriations process

The DOE 2008 TSLCC Analysis provides detailed estimates, in constant 2007 dollars, of past nuclear waste program costs (1983-2006) and projects nuclear waste program costs (2007-2133). DOE uses same year constant dollars to remove the effects of inflation. This report is the source for the commonly cited $96 billion (2007$) total cost for the Yucca Mountain repository project: historical costs of $13,540,000 (2007$) plus future costs of $82,640,000 (2007$). [p. 2] The DOE analysis indicates that 80 percent of these costs are for disposal of commercial spent nuclear fuel (SNF) and high-level radioactive waste (HLW) and would be paid by appropriations from the Nuclear Waste Fund. Separate defense appropriations would pay approximately 20 percent of the program cost for disposal of defense HLW and DOE-owned SNF. [Pp. 32-33]

The DOE 2013 Fee Adequacy Report provides historical data on past utility payments into the Nuclear Waste Fund (NWF) and projected future payments in constant 2012 dollars based on assumptions about the amount of nuclear-generated electricity annually. As of August 2012, DOE reported that the NWF balance totaled about $28.2 billion (2012$). DOE projected future fee income at $20.5 billion (2012$). [p. 25] In compliance with a federal court order, DOE stopped collecting the fee in 2014. DOE had projected that utility payments into the fund for 2014 to 2018 would total about $3.68 billion (2012$). [p. A-3] While fee collection ended five years ago, the NWF continues to receive interest, and currently totals about $37 billion. [Committee Report, p. 18]

Sec. 501 would continue suspension of DOE collection of utility fees until after a final NRC decision on the Yucca Mountain construction authorization (CA). No new utility payments would be coming into the NWF during the licensing proceeding, which could cost $2 billion or more over 3-4 years. Program funds during this period would have to be requested from Congress annually by the Administration, through the current politically-charged appropriations process. Even after the CA decision, program funds would be solely reliant on the current appropriations process for another 3-6 years, although DOE could now resume collection of utility fees. Only after the repository begins receiving spent fuel, would DOE begin automatically receiving the new mandatory allocations established by Sec. 504, but these amounts would need to be substantially supplemented each and every year, through annual appropriations.

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[3]DOE, OCRWM, *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program, Fiscal Year 2007*, DOE/RW-0591, Washington, DC (July 2008). http://www.state.nv.us/nucwaste/news2018/pdf/FY_2007_TotalSystemLifeCycleCost_Pub2008.pdf Additional information is available in OCRWM, *Summary of Program Financial and Budget Information* (January 1, 2010). http://www.state.nv.us/nucwaste/news2018/pdf/ocrwm-budget-summary.pdf

[4]DOE, *Nuclear Waste Fund Fee Adequacy Assessment Report* (January 2013). http://www.state.nv.us/nucwaste/news2018/pdf/11-1066-2013-01_18.pdf

Sec. 504 would establish four categories of mandatory percentage allocations from the NWF 2017 balance ($37 billion) that would be paid to DOE without further appropriation, after the beginning of waste receipts at the repository, for: (A) repository construction and operation over 25 years, one percent ($370 million) per year; (B) a one-time, one percent ($370 million) benefits payments to Nevada; (C) annual benefits payments to Nevada and Nevada local and tribal governments, 0.1 percent ($37 million) per year; and (D) monitoring and waste package and drip shield fabrication (20 percent, or $7.4 billion), after all waste is emplaced and the decommissioning period has begun. Additionally, (E) uncollected utility payments (estimated at $2.6 billion plus interest by CBO) under NWPA subsection 302 (a) (3), would be available to DOE in the year paid without further appropriation.

The DOE 2008 TSLCC year-by-year future cost estimates provide a basis for evaluating the funding mechanism proposed in H.R. 3053. First, the 2008 TSLCC analysis indicates DOE would need ten years and $13.51 billion (2007$) to obtain a construction authorization and license to receive radioactive materials from the NRC, and complete required construction before receiving SNF and HLW. The Sec. 504 mandatory allocation of $370 million per year would not start until after waste receipts begin. All of the repository program funding during this period, would need to be requested by the Administration and appropriated by Congress, using the 80/20 percent commercial-defense cost sharing formula. The annual Administration requests would need to reflect inflation. Even during the recent period of historically low inflation, the CPI increased 18 percent between 2007 and 2017, at an annual average rate of about 1.6 percent.

Second, the 2008 TSLCC analysis indicates DOE would require $32.55 billion (2007$), or $1.3 billion (2007$) per year, for the next 25 years of repository construction and operations after SNF and HLW receipts begin. The Sec. 504 mandatory allocation of $370 million each year, in year of appropriation dollars, would begin at this time. But over 25 years, DOE would need an average of $1.3 billion per year in constant 2007 dollars. Even if the inflation rate was low by historical standards, about 1.6 percent per year, after receiving the first $370 million yearly allocation, DOE still would need to request an appropriation of more than $1.1 billion in year of request dollars, in the first year of full operations. If inflation continued at only 1.6 percent per year, by Year 25, the DOE annual appropriations request (to supplement the $370 million allocation) could exceed $1.6 billion. If the inflation rate was the same as between 1983 and 2008, DOE would need to increase its Year 25 request to more than $2.3 billion.

H.R. 3053 would not provide adequate funding for the Yucca Mountain project over ten years, let alone 120-130 years, outside the regular appropriations process. The Administration would need to request future repository funds in future year dollars, and each year inflation will reduce the value of the fixed amount allocation set by Sec. 504. As noted earlier, the purchasing power of the dollar, as measured by the CPI, fell by more than one-half, in the quarter-century between the first full year of DOE NWPA implementation (1983) and Yucca Mountain license application submittal to NRC (2008).

Finally, Sec. 501 (a) would create certain political controversy by the vague manner in which it directs the Secretary of Energy to conduct a new repository lifecycle cost analysis, and develop a new utility fee collection program based on the findings of that analysis. This provision intentionally "does not address whether DOE can begin assessing the fee prior to NRC's final decision" the Committee Report explains in a footnote. [fn. 69, p. 35] Other intentionally vague

provisions regard the collection of interest on fees paid and renegotiation of the Standard Contract. [fn. 71-74, p.36] The Secretary is authorized to resume collection of fees, but is not required to resume collection of fees. The amount of fees that can be collected annually may not exceed 90 percent of appropriations, and would vary from fiscal year to fiscal year. Could such a vaguely defined new fee collection program, worth $1 billion or more per year, be established without political controversy, if not political interference? Would fee collection be resumed at all?

The authors of H.R. 3053 intended Title V to provide predictable and sufficient funding for all authorized uses under the NWPA. "The availability of funding is central to the program's success." [Committee Report, p. 34] Far from assuring predictability and sufficiency, Title V creates multiple new funding uncertainties. No funds are assured for 6-10 years after enactment. The mandatory allocations for repository expenditures are limited to 25 years, are not adjusted for inflation, and require continued reliance on annual appropriations for the majority of necessary funding. Future utility fee collections and renegotiation of the Standard Contract are expected but not required. Because of these uncertainties, the long term costs of the program mandated by H.R. 3053 are unknown, and perhaps unknowable.

Implications for the High-Level Nuclear Waste Program Generally (Title VI)

Sec. 604 retains the DOE Office of Civilian Radioactive Waste Management (OCRWM) as the managing entity for the federal nuclear waste program [as established under 42 U.S.C. 10224], but proposes vastly expanded powers for the OCRWM Director. This is quite different from the approach likely to be taken in the U.S. Senate. The Senate has previously (S. 854, 114th Congress) proposed removing the program from DOE and creating a new managing entity, a stand-alone federal agency, the Nuclear Waste Administration. The Blue Ribbon Commission (BRC) on America's Nuclear Future (2012 Final Report) and the Nuclear Energy Institute have recommended transferring the nuclear waste program to a federal corporation.

Sec. 604 (a) would allow the OCRWM Director to serve two 5-year terms (instead of serving at the pleasure of President), would limit the President's ability to remove the Director (only for inefficiency, neglect of duty, or malfeasance in office), and require a report to Congress explaining the reason for such removal.

Sec. 604 (b) would transfer to the OCRWM Director all nuclear waste functions currently assigned to one or more Assistant Secretaries of Energy by 42 U.S.C 7133(a). The responsibilities transferred include:

> (1) the establishment of control over existing government facilities for the treatment and storage of nuclear wastes, including all containers, casks, buildings, vehicles, equipment, and all other materials associated with such facilities;
> (2) the establishment of control over all existing nuclear waste in the possession or control of the government and all commercial nuclear waste presently stored on other than the site of a licensed nuclear power electric generating facility, except that nothing in this paragraph shall alter or effect title to such waste;
>
> (3) the establishment of temporary and permanent facilities for storage, management, and ultimate disposal of nuclear wastes;

(4) the establishment of facilities for the treatment of nuclear wastes;
(5) the establishment of programs for the treatment, management, storage, and disposal of nuclear wastes;
(6) the establishment of fees or user charges for nuclear waste treatment or storage facilities, including fees to be charged government agencies; and
(7) the promulgation of such rules and regulations to implement the authority described in this paragraph, except that nothing in this section shall be construed as granting to the Department regulatory functions presently within the Nuclear Regulatory Commission, or any additional functions than those already conferred by law.

Sec. 603 would expand the allowable uses of financial and technical assistance provided by OCRWM under the NWPAA Sec. 180c to States and Indian tribes affected by nuclear waste transportation to a repository or MRS facility. Otherwise the bill is silent regarding the radiological and social impacts of transporting spent nuclear fuel and high-level radioactive waste. The BRC, based on the National Academy of Sciences 2006 report, recommended that 13 specific measures be adopted before the commencement of shipments to federal facilities, for the purposes of enhancing safety, security, and public acceptance. The potential shipping routes to Yucca Mountain identified by DOE in 2008 would affect 44 states and the District of Columbia and traverse 330 congressional districts.