



## CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

October 4, 2017

### **H.R. 3053** **Nuclear Waste Policy Amendments Act of 2017**

*As ordered reported by the House Committee on Energy and Commerce on June 28, 2017*

#### **SUMMARY**

Under the Nuclear Waste Policy Act (NWPA), the federal government, through the Department of Energy (DOE), is responsible for permanently disposing of the nation's nuclear waste in a geologic repository at Yucca Mountain, Nevada. H.R. 3053 would not change that fundamental requirement, but would temporarily limit DOE's authority to collect certain fees charged to utilities with nuclear plants to cover the costs of disposing of the waste they generate and would authorize DOE to enter into agreements to provide benefits to state, local, and tribal governments that might host or be affected by facilities related to the waste management program.

In general, CBO expects that enacting H.R. 3053 would not significantly change the overall magnitude of the long-term costs the government will incur under the NWPA (tens of billions of dollars over multiple decades). However, relative to CBO's 10-year baseline projections, we estimate that enacting the bill would increase direct spending over the next 10 years. In particular, the bill would reduce projected receipts from certain fees (which are treated as reductions in direct spending) that utilities might otherwise pay by about \$1.5 billion and would increase direct spending for payments to state, local, and tribal governments by \$260 million over the 2018-2027 period.

However, the House Committee on the Budget has directed CBO to estimate the budgetary effects of H.R. 3053 on the assumption that, under current law, the utilities will pay none of the affected fees over the 2018-2027 period. On that basis, CBO estimates that enacting H.R. 3053 would not reduce projected receipts, but would increase direct spending by \$260 million over the 2018-2027 period.

In addition, assuming appropriation of the authorized and estimated amounts, CBO estimates that implementing the bill would have discretionary costs of \$300 million over the next 10 years.

Pay-as-you-go procedures apply because enacting H.R. 3053 would affect direct spending. Enacting the bill would not affect revenues.

CBO estimates that enacting H.R. 3053 would increase net direct spending after 2027. However, CBO cannot determine whether such net increases would exceed \$5 billion in one or more of the four consecutive 10-year periods beginning in 2028 because the bulk of such increases would depend on whether a geologic repository at Yucca Mountain is licensed, built, and put into operation. Whether such events occur depends on factors that lie beyond the scope of this legislation—namely, what the outcome is for the Nuclear Regulatory Commission’s (NRC’s) review of DOE’s application for a license to construct a geologic repository at Yucca Mountain and whether the Congress provides the funding necessary for DOE to establish such a facility and carry out other activities related to the disposal of nuclear waste.

H.R. 3053 would impose intergovernmental mandates as defined in the Unfunded Mandates Reform Act (UMRA). The bill would preempt state and local regulatory authority over hazardous waste that would be transported to and stored in a nuclear waste repository in Nevada. Although the preemption would limit the application of state and local laws and regulations, CBO estimates that the preemption would impose no duty on state or local governments that would result in additional spending or a loss of revenues.

H.R. 3053 also would impose a private-sector mandate as defined in UMRA on owners of mining claims by prohibiting mining on federal land withdrawn from public land laws for the construction of a repository. Based on information about the number of mining claims in the area and the value of mining claims on federal land, CBO estimates that the cost of the mandate would fall below the annual threshold established in UMRA for private-sector mandates (\$156 million in 2017, adjusted annually for inflation).

## **BACKGROUND**

Under the NWPA, the federal government faces substantial costs to implement a program to permanently dispose of the nation’s nuclear waste.<sup>1</sup> Under the law, the only authorized means of disposal involves constructing a geologic repository, and Yucca Mountain, Nevada, is the only authorized site where such a repository can be located. In 2008, DOE submitted to the NRC an application for a license to construct a repository at Yucca Mountain. However, starting in 2010, the Administration took a variety of actions to terminate that project. Since that time, the Congress has provided no new funding for the Yucca Mountain project. Meanwhile, after exhausting funds made available for the licensing effort, both DOE and the NRC have no effective capability to carry out the regulatory activities that must be completed before DOE can implement a program to

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1. For additional information about the federal government’s responsibilities and liabilities under the Nuclear Waste Policy Act, see the testimony of Kim Cawley, Chief, Natural and Physical Resources Cost Estimate Unit, Congressional Budget Office, before the Subcommittee on Environment and the Economy of the House Committee on Energy and Commerce, *The Federal Government’s Responsibilities and Liabilities Under the Nuclear Waste Policy Act* (December 3, 2015), [www.cbo.gov/publication/51035](http://www.cbo.gov/publication/51035).

dispose of nuclear waste.<sup>2</sup> (However, the Administration has requested funding to resume licensing activities in 2018.)

DOE has also incurred—and partially breached—contractual obligations to remove waste from existing nuclear facilities. Under contracts signed with electric utilities pursuant to the NWPA, in exchange for fees to cover the government’s costs, DOE was scheduled to start removing waste from storage sites at power plants and transport it to a federal storage or disposal facility by 1998. After the government missed that deadline, utilities with nuclear plants began to successfully sue the government for resulting damages. By the end of fiscal year 2016, utilities had received \$6.1 billion in payments from the Judgment Fund (a permanent indefinite appropriation available to pay judicially and administratively ordered monetary awards against the United States).

The potential timing and magnitude of additional spending that must occur to enable the government to meet its obligations under the NWPA and the extent to which federal costs will be defrayed by fees from nuclear utilities are all uncertain. Resuming activities to execute the program currently authorized under that law will require a significant and sustained increase in federal appropriations—to rebuild DOE’s and the NRC’s capacity to complete licensing activities and to construct the facilities and infrastructure authorized under the act—and CBO cannot predict whether the necessary funding will be provided.<sup>3</sup> Likewise, although the NWPA requires DOE to charge fees to nuclear utilities to cover the government’s cost to dispose of the waste they generate, the extent to which the Secretary will exercise his discretion, under current law, to assess and collect such fees is uncertain, particularly in light of recent legal proceedings.

## **CBO’S BASELINE PROJECTIONS**

On the basis of underlying provisions of the NWPA, federal cash flows related to the nuclear waste program involve a mix of discretionary spending and mandatory spending.

Under the NWPA, spending from the NWF is not automatically triggered by the collection of fees or transfers of amounts credited as intragovernmental interest. Instead, it is

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2. See Government Accountability Office, *Commercial Nuclear Waste: Resuming Licensing of the Yucca Mountain Repository Would Require Rebuilding Capacity at DOE and NRC, Among Other Key Steps*, GAO-17-340 (April 2017), [www.gao.gov/products/GAO-17-340](http://www.gao.gov/products/GAO-17-340).

3. In 2008, DOE estimated that costs associated with geologic disposal of civilian and defense-related nuclear waste (including those related to transportation and project management) would total \$96 billion (in 2007 dollars) over a period of more than 100 years. See Department of Energy, Office of Civilian Radioactive Waste Management, *Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program, Fiscal Year 2007*, DOE/RW-0591 (July 2008), <http://go.usa.gov/cjmtG>. In addition, the NRC previously estimated that completing activities related to its review and adjudication of DOE’s application for a license to construct a repository at Yucca Mountain would cost \$330 million.

controlled by annual appropriation acts, and is therefore considered discretionary spending. Under current law, no discretionary spending is occurring for permanent geologic disposal as authorized under the NWPA; as a result, CBO's baseline projections include no such spending.

In contrast, fees paid by nuclear utilities are governed by statutory provisions of the NWPA and the terms of contracts entered into pursuant to that act. As a result, they are classified as offsetting receipts, which are credited against mandatory spending. Likewise, ongoing spending for DOE's liabilities stemming from its partial breach of those contracts is classified as mandatory spending because the source of such spending—the Treasury's Judgment Fund—is governed by underlying law that provides permanent, indefinite budget authority for such payments.

### **Projected Receipts from Nuclear Waste Fees**

CBO's baseline projections of receipts from fees paid by utilities reflect uncertainty about events that could transpire under current law. Following litigation in which the nuclear industry challenged DOE's authority to collect annual fees, DOE complied, in 2014, with a court order to reduce the rate of the fees from \$0.001 per kilowatt hour (kwh) of electricity generated by nuclear power to \$0.0 per kwh.<sup>4</sup>

However, that court order also referenced procedures established under the NWPA, which are still in effect under the order, by which DOE could reinstate annual fees under certain conditions. Specifically, the NWPA requires DOE to periodically review and, if necessary, adjust the rate of the annual fee to ensure that the projected balances of the NWF (including interest credited to the fund) are sufficient to pay the full long-term costs associated with geologic disposal of nuclear waste. Under the court order, if DOE completed such an analysis and determined that additional fees were needed, it could reinstate fees at whatever rate it considered necessary. Given that possibility—that DOE could reinstate annual fees under current law—CBO's baseline follows the agency's usual practices for projecting spending and receipts related to activities involving the possibility of administrative actions. Specifically, CBO estimates the total amounts that would be collected if fees were fully reinstated and to account for the uncertainty under current law, includes 50 percent of those amounts in its baseline. Thus, CBO's baseline includes \$385 million annually in nuclear waste fees—roughly half the amount that had been collected before DOE reduced the fee to zero. The Administration follows similar procedures in preparing baseline projections of nuclear waste fees.

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4. The National Association of Regulatory Utility Commissioners and the Nuclear Energy Institute filed petitions with the U.S. Court of Appeals for the District of Columbia Circuit to end the federal government's collections of annual fees. In 2013, that court found that DOE had failed to provide a legally justifiable basis for continuing to collect fees in the absence of an identifiable strategy for waste management. The court ordered the Secretary of Energy to reduce the annual fee to zero until the agency either justifies a reinstatement of annual fees with a new study on the adequacy of the balances in the NWF or until the Congress enacts new legislation authorizing an alternative to Yucca Mountain as a disposal site.

## **Projected Spending for DOE's Contractual Liabilities**

CBO's projections of mandatory spending include significant amounts of spending for continued on-site storage of waste at civilian nuclear facilities—in the form of payments from the Judgment Fund related to DOE's contractual liabilities. Because of the timing lag between when such liabilities are incurred and damages are eventually paid, CBO expects that most of the anticipated nuclear waste-related spending from the Judgment Fund over at least the next 10 years—which CBO estimates will total at least \$5 billion—is attributable to liabilities that DOE has either already incurred or cannot avoid.

Estimates of the government's remaining liabilities are uncertain and depend critically on when and how DOE begins to accept waste and how long eliminating the backlog will take. In 2016, DOE estimated that if it could begin to accept waste within the next 10 years, remaining liabilities would total \$25 billion.<sup>5</sup> However, CBO estimates that even if that time frame could be achieved, the department will face a backlog in meeting contractually specified schedules for accepting waste that would take more than 20 years to clear. As long as DOE remains behind schedule, the government will continue to incur liabilities.

## **ESTIMATED COST TO THE FEDERAL GOVERNMENT**

The estimated budgetary effect of H.R. 3053 is shown in the following table. The costs of this legislation fall within budget function 270 (energy).

## **BASIS OF ESTIMATE**

In general, CBO expects that enacting H.R. 3053 would not significantly change the overall magnitude of costs the government will ultimately incur to dispose of civilian nuclear waste. The bill would not alter the government's responsibility to permanently dispose of nuclear waste at a geologic repository, and although the bill would make important changes to provisions of the NWPA that pertain to the repository at Yucca Mountain, that site would remain the only authorized location where such a repository could be built.<sup>6</sup> Similarly, enacting the bill would not change DOE's obligation under the

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5. Department of Energy, Fiscal Year 2016 Agency Financial Report, DOE/CF-0128 (November 2016), [https://energy.gov/sites/prod/files/2016/11/f34/DOE\\_FY2016\\_AFR.pdf](https://energy.gov/sites/prod/files/2016/11/f34/DOE_FY2016_AFR.pdf).

6. Key provisions of H.R. 3053 related to the repository authorized at Yucca Mountain would permanently withdraw from public use approximately 147,000 acres of land in Nye County, Nevada, that surround the site—which would then be administered by the Secretary of Energy. The bill also would amend the NWPA to allow DOE, at any time, to construct and upgrade infrastructure that the Secretary considers necessary to support the construction or operation of the repository. (Under current law, such activities cannot occur unless the NRC approves DOE's license application.) Finally, the bill would increase, from 70,000 to 110,000 metric tons, the statutory cap on the volume of waste that can be disposed of at the repository. In the absence of such a change, the government could face additional costs to build further capacity to dispose of waste from nuclear utilities, which have already generated more than 70,000 metric tons of waste. Thus, increasing the authorized capacity of Yucca Mountain could affect the future long-term costs of disposing of civilian nuclear waste, but CBO has not estimated either the long-term costs the government already faces under current law or how that change might affect them.

NWPA to levy fees on the nuclear industry at rates that are sufficient to ensure that projected balances in the Nuclear Waste Fund (or NWF, an accounting mechanism used to record cash flows related to the civilian nuclear waste program) will be sufficient to cover the full extent of long-term costs of disposing such waste.

	By Fiscal Year, in Millions of Dollars										2018-	2018-
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2022	2027
<b>INCREASES IN DIRECT SPENDING RELATIVE TO DIRECTION BY THE HOUSE COMMITTEE ON THE BUDGET <sup>a</sup></b>												
Benefits Agreements												
Estimated Budget Authority	15	30	35	35	20	20	30	25	25	25	135	260
Estimated Outlays	15	30	35	35	20	20	30	25	25	25	135	260
<b>INCREASES IN SPENDING SUBJECT TO APPROPRIATION</b>												
Estimated Authorization Level	0	0	50	50	50	50	50	50	0	0	150	300
Estimated Outlays	0	0	0	75	75	50	50	50	0	0	150	300

**Memorandum:**

<b>INCREASES IN DIRECT SPENDING RELATIVE TO CBO'S BASELINE PROJECTIONS</b>												
Temporary Limits on Payments of Annual Fees												
Estimated Budget Authority	385	385	385	385	0	0	0	0	0	0	1,540	1,540
Estimated Outlays	385	385	385	385	0	0	0	0	0	0	1,540	1,540
Total Changes in Direct Spending Relative to CBO's Baseline Projections <sup>b</sup>												
Estimated Budget Authority	400	415	420	420	20	20	30	25	25	25	1,675	1,800
Estimated Outlays	400	415	420	420	20	20	30	25	25	25	1,675	1,800

a. Relative to CBO's baseline projections, we estimate that increases in direct spending over the 2018-2027 period would stem from provisions that would temporarily limit utilities' payments of fees and authorize DOE to provide benefits to nonfederal governments affected by waste-related facilities. However, the House Committee on the Budget has directed CBO to estimate the budgetary effects of H.R. 3053 on the assumption that utilities will pay none of the affected fees over the 2018-2027 period. On that basis, CBO estimates that fee-related provisions would have no effect, and increases in direct spending under H.R. 3053 resulting from benefits paid to nonfederal governments affected by waste-related facilities would total \$260 million over the 2018-2027 period.

b. Includes spending for benefits agreements with nonfederal governments that host or are affected by waste-related facilities.

Relative to CBO's baseline projections, however, provisions of the bill would increase direct spending over the 10-year period covered by this estimate by \$1.8 billion—due to a provision that would limit utilities' payments of fees under the NWPA (\$1.5 billion) and from benefits agreements (\$260 million). In addition, assuming appropriation of amounts

authorized for new activities, CBO estimates that implementing the bill would have a discretionary cost of \$300 million.

However, for the estimate of H.R. 3035, the House Committee on the Budget has directed CBO to assume that, under current law, the affected utilities will not pay any annual fees over the 2018-2027 period. On that basis, CBO estimates that enacting H.R. 3053 would not affect the annual fees, and would increase direct spending by \$260 million over the 2018-2027 period. (The direction from the House Committee on the Budget would not affect CBO's estimate of discretionary spending.)

### **Estimate of Direct Spending As Directed by the House Committee on the Budget**

Relative to direction from the House Committee on the Budget, there would be no budgetary effect from prohibiting DOE from collecting annual fees from utilities with nuclear power plants. Direct spending over the 2018-2027 period would result entirely from provisions that would authorize DOE to provide assistance to nonfederal governments affected by the disposal program.

Specifically, H.R. 3053 would authorize DOE to enter into “benefits agreements” with and make payments to state, local, or tribal governments that might host facilities related to the disposal program to help those governments mitigate potential related effects. The bill also would specify amounts to be paid annually to those governments that participate in benefits agreements. In general, the payments would be lower during the initial years (when siting, licensing and construction activities would occur) and, after a onetime payment in the year when a facility first accepts waste, would increase while the facility continues to operate. Under H.R. 3053, DOE and affected governments would negotiate the terms of any benefits agreements they enter into. Under certain conditions—namely, if sites are disqualified as candidates or, in the case of the authorized repository at Yucca Mountain, if the NRC disapproves DOE's license application—the agreements could be terminated. To the extent they remain in effect, however, participating state, local, or tribal governments would effectively be entitled to annual payments of benefits in accordance with schedules specified under the bill. Therefore, in CBO's view, such commitments would increase direct spending.

CBO estimates that increased direct spending stemming from benefits agreements under H.R. 3053 would total \$260 million over the 2018-2027 period. That amount includes \$195 million for benefits related to a repository at Yucca Mountain and \$65 million for benefits related to other facilities.

**Repository-Related Benefits Agreements.** H.R. 3053 would modify the NWPA to authorize DOE to enter into a benefits agreement with Nevada and specify amounts to be

paid to that state on an annual basis.<sup>7</sup> In addition, the bill would authorize DOE, after one year, to negotiate benefits agreements with affected local governments within that state. Under H.R. 3053, CBO expects DOE would enter into an agreement with Nevada in 2018 and multiple agreements with other governments in 2019. CBO also expects that payments to those other governments would not, in total, exceed the amount authorized to be paid to Nevada—\$15 million annually until a repository begins to operate, which CBO does not expect will occur before 2027.<sup>8</sup>

The cost of repository-related benefits agreements is uncertain and would depend on the outcome of the NRC's licensing process. That agency's decision, which CBO expects would occur in 2021, would probably determine whether payments for benefits agreements related to a repository at Yucca Mountain continued. If the NRC approves the application, CBO anticipates that the affected governments would continue to receive benefits. However, if the NRC disapproves the application, CBO expects that DOE would exercise its authority to terminate any agreements governing such benefits.

CBO has no basis, though, for predicting the outcome of the NRC's licensing process. To account for that uncertainty, CBO assumes for this estimate that there is a 50 percent chance that payments to Nevada and local governments within that state would continue after 2021. On that basis, CBO estimates that direct spending for repository-related benefits agreements would increase by a total of \$195 million over the 2018-2027 period. That amount includes \$15 million in 2018 (for Nevada), \$30 million annually (for Nevada and local governments) over the 2019-2021 period—the full extent of payments CBO estimates would be authorized during those years while the NRC completes its licensing activities. To account for uncertainty about whether payments would continue in later years, CBO's estimate also includes payments to Nevada and affected governments totaling \$15 million annually over the 2022-2027 period (half the total amount CBO estimates might be paid in those years).

**Benefits Agreements With Governments Hosting Other Facilities.** Under H.R. 3053, DOE could enter into one agreement with each state or tribal government that has jurisdiction over land with a site identified as a potential candidate for hosting what is termed a monitored retrievable storage (MRS) facility. DOE could enter into only one such agreement with a state or tribe at any given time. Under the bill, during the initial years of siting, licensing, and constructing an MRS facility, the host government would receive \$5 million annually. When the facility first accepts spent fuel, the host government would

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7. When Nevada Governor Guinn formally objected to President Bush's site recommendation of Yucca Mountain in 2002, the state forfeited the opportunity to receive benefits under the NWPA.

8. H.R. 3053 also would authorize a onetime payment, upon the date when a repository first accepts waste, of an amount equal to 1 percent of the balance of funds credited to the NWF as of the date of the bill's enactment—or \$370 million, CBO estimates (on the basis of the fund's existing balance and assuming the bill is enacted early in 2018). After that onetime payment, annual payments would equal 0.1 percent of that balance—or \$37 million annually—and continue for decades until the repository ceases operations.

receive a onetime payment of \$10 million. Subsequent payments would rise to \$10 million annually for the life of the facility.

The amount and timing of direct spending to provide benefits to governments that host MSR facilities is uncertain. For this estimate, CBO assumes that under H.R. 3053, DOE would commit to pay at least one potential host government of an MRS facility over the 2018-2027 period. On the basis of the potential time frame for developing such a facility, CBO estimates that payments to that government would begin in 2020 (after a needs analysis by DOE, as required under the bill) and, assuming the facility begins to accept waste in 2024, would total \$65 million over the 2020-2027 period. After that time, federal spending of \$10 million annually for benefits would continue for several decades. (An MRS agreement would also lead to discretionary spending; more detail about those costs is provided below under the heading, “Spending Subject to Appropriation.”)

### **Direct Spending Relative to CBO’s Baseline**

Relative to CBO’s baseline projections, we estimate that enacting H.R. 3053 would increase net direct spending by \$1.8 billion over the 2018-2027 period. That 10-year cost includes:

- \$1.5 billion in forgone receipts resulting from a provision that would temporarily limit DOE’s authority to accept payments of annual fees that CBO expects might be paid in the future by nuclear utilities (there would be no cost for those foregone receipts under the direction of the Budget Committee), and
- \$260 million for benefits that would be paid to state, local, and tribal governments that might host or be affected by facilities related to the civilian nuclear waste program (those costs would be the same under both CBO’s baseline and the direction from the Budget Committee).

**Temporary Limits on DOE’s Authority to Accept Payments of Annual Fees.** Under the NWPA and the terms of related contracts entered into by DOE and utilities with nuclear plants, utilities pay two types of fees to cover the costs of disposing of the nuclear waste they generate. Annual fees are based on the amount of electricity they sell that is generated by nuclear power plants and onetime fees are based on the volume of waste those plants generated before the NWPA was enacted.

H.R. 3053 would direct DOE to establish separate procedures for assessing annual fees and accepting payments. Under the bill, DOE would establish, within 180 days, procedures for assessing the annual fees, which CBO expects would be consistent with the NWPA’s underlying requirement that the Secretary set the rate of annual fees at the level necessary to ensure that projected balances in the NWF are sufficient to cover the costs of disposing of civilian nuclear waste. Broadly speaking, because enacting H.R. 3053 would not

substantively affect those costs, CBO expects that the new procedures would not significantly change the total amount of annual fees DOE would assess utilities.

However, the bill would prohibit DOE from accepting any payments of assessed fees until the NRC issues a decision regarding the agency's license application. Relative to CBO's baseline projections, CBO estimates that the temporary prohibition would reduce annual fees by a total of \$1.5 billion over the next four years.

In addition, DOE's authority to collect fees in years following the NRC's decision could be constrained by the amounts of future appropriations for the waste program. To fulfill its statutory obligation to charge fees sufficient to cover the costs of disposing of civilian waste, the department could need to adjust the fees each year depending on the appropriations received, but CBO has no basis for estimating such changes.

*Estimated Effects of Temporary Limits on Payments of Annual Fees.* Upon enactment, H.R. 3053 would prohibit DOE from accepting payments of annual fees until the NRC issues a decision regarding DOE's license application. The bill would not explicitly prevent DOE from assessing annual fees during that time; however, based on an analysis of information from the department, CBO expects that DOE would not assess annual fees when the prohibition is in effect. Thus, relative to CBO's baseline projections, enacting that provision would eliminate the possibility of DOE collecting any fees while the NRC conducts its analysis. On the basis of information from the NRC about the potential time frame required to resume and complete its review and adjudication of DOE's license application, CBO expects that the proposed prohibition would last about four years and thereby reduce receipts, relative to the baseline, by a total of \$1.5 billion.

*Potential Limits on Payments of Assessed Fees Based on Future Appropriation Acts.* In years following the NRC's decision, DOE's authority to collect fees that it assesses could be affected by the amount of funding provided for the waste disposal program. Specifically, H.R. 3053 would limit DOE's authority to collect, in any year, annual fees that total more than 90 percent of the amount appropriated in that year from the NWF for activities related to the Yucca Mountain project. The bill also would specify, however, that regardless of any limitation on the amount of payments that might occur in a given year, the utilities would remain liable for the full amount of the fees assessed and would set forth conditions under which the Secretary could require utilities to pay the uncollected portion of fees previously assessed.

Enacting those provisions could affect the timing and magnitude of receipts from payments of annual fees. CBO has no basis, however, for estimating the extent to which those receipts would differ from amounts projected in our baseline. More broadly, for the reasons described, receipts from annual fees paid in any given year under H.R.3053, as under current law, would remain uncertain. As a result, this estimate does not reflect any potential changes to annual receipts after 2021.

## **Spending Subject to Appropriation**

H.R. 3053 would direct DOE to determine by June 1, 2019, the need for MRS facilities to store waste—temporarily—until the department can permanently dispose of it in a geologic repository. The bill also would authorize DOE and willing utilities to enter into new contracts or renegotiate the terms of existing contracts to allow the department to accept waste and store it at an MRS facility, with priority given to waste generated by nuclear facilities that are no longer operating. Under current law, DOE can accept waste only for the purpose of permanently disposing of it in a geologic repository.

Unless the Secretary determines that constructing a federal MRS facility would be faster and less costly, the bill would direct DOE to prioritize storage of civilian waste to which it takes title at nonfederal MRS facilities. Under H.R. 3053, DOE could not enter into an MRS agreement unless the sponsor of the nonfederal facility obtained a license from the NRC as well as permission to store department-owned waste from the state’s governor, any local government units with jurisdiction over the area, and affected Indian tribes. In general, the bill would permit DOE to enter into multiple MRS agreements, but only one such agreement could be signed before the NRC issues its decision on DOE’s application for a license to build a repository at Yucca Mountain.

The bill would authorize appropriations to implement that initial MRS agreement. Specifically, over the 2020-2022 period, the bill would authorize the appropriation of up to \$50 million annually. For each of fiscal years 2023 through 2025, the bill would authorize appropriations in amounts equal to 10 percent of the amounts appropriated from the NWF. For this estimate, CBO assumes that authorization levels over the 2023-2025 period would remain in line with the \$50 million cap specified for earlier years.

Thus, CBO estimates that H.R. 3053 would authorize appropriations totaling \$300 million over the 2020-2025 period for DOE to implement an initial MRS agreement and that the resulting discretionary spending over the period would be the same amount. Based on an analysis of information from DOE, the NRC, and the nuclear industry, CBO further anticipates that such funding would support the development of one nonfederal MRS facility that would be licensed in 2021, be constructed over the 2022-2023 period, and begin to operate in 2024.

## **PAY-AS-YOU-GO CONSIDERATIONS**

The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The direction by the House Committee on the Budget to assume that nuclear utilities will not pay any fees over the 2018-2027 period under current law would not affect what is recorded under that act. Thus, CBO is providing our estimate of the net changes in outlays that are subject to those

pay-as-you-go procedures in the following table. The Office of Management and Budget is responsible for recording any changes in direct spending or revenues under that act.

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**CBO Estimate of Pay-As-You-Go Effects for H.R. 3053, as ordered reported by the House Committee on Energy and Commerce on June 28, 2017**

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	By Fiscal Year, in Millions of Dollars										2018- 2022	2018- 2027
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027		
<b>NET INCREASE IN THE DEFICIT</b>												
Statutory Pay-As-You-Go Impact	400	415	420	420	20	20	30	25	25	25	1,675	1,800

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**INCREASE IN LONG-TERM DIRECT SPENDING AND DEFICITS**

For the four consecutive 10-year periods following 2027, CBO estimates that enacting H.R. 3053 would probably increase net direct spending by at least a few billion dollars and potentially as much as nearly \$20 billion dollars. Whether such higher costs would arise is uncertain and would depend on whether a geologic repository at Yucca Mountain is licensed, built, and put into operation. Those events depend on factors beyond the scope of this legislation—namely, whether the NRC approves DOE’s application for a license to construct a geologic repository at Yucca Mountain and whether the Congress enacts new laws to provide funding for the department to establish such a facility and implement other related activities. CBO has no basis for predicting the outcome of the NRC’s licensing process or whether activities related to the disposal program will receive necessary funding. Nor can CBO estimate the extent to which enacting H.R. 3053 might reduce future direct spending related to DOE’s contractual liabilities. As a result, CBO cannot determine whether net increases in direct spending would exceed \$5 billion in any of the four 10-year periods following 2027.

In addition to continued spending for benefits agreements, long-term increases in direct spending after 2027 are attributable to provisions of H.R. 3053 that would appropriate balances of the NWF and authorize DOE to spend onetime fees. CBO also expects that implementing provisions in H.R. 3053 that would authorize DOE to pursue temporary storage facilities could potentially reduce the government’s exposure to contractual liabilities under the NWPA.

## **Authority to Spend NWF Balances**

When DOE first accepts waste for disposal at Yucca Mountain, H.R. 3053 would permanently appropriate, on an annual basis for 25 years, 1 percent of the balance of funds credited to the NWF as of the date of enactment of H.R. 3053—or about \$370 million annually, CBO estimates. If provided, such funding would total \$9.3 billion over 25 years and remain available to DOE for repository-related construction costs and operating expenses. Later, when Yucca Mountain ceases operations, H.R. 3053 would provide a onetime appropriation equal to 20 percent of the fund’s balance as of the date of enactment—or about \$7.4 billion—for activities related to monitoring and decommissioning that facility.

Thus, H.R. 3053 could increase direct spending of NWF balances by nearly \$17 billion over the next several decades. However, as explained previously, whether that facility will be constructed is uncertain and depends on factors that lie beyond the scope of H.R. 3053.

## **Authority to Spend Onetime Fees**

H.R. 3053 would authorize DOE to spend, without further appropriation, onetime fees established under the NWPA to cover the costs of disposing of waste that was generated before the law was enacted. Under that law, DOE gave utilities options for postponing payments of such fees, but utilities must pay their outstanding balance when the department accepts their waste to permanently dispose of it in the Yucca Mountain repository. Because that event is unlikely by the end of the projection period in 2027, CBO anticipates that the bulk of onetime fees are unlikely to be paid until after that time.<sup>9</sup>

To date, several utilities have not paid the fees, and according to DOE, the balance of uncollected fees currently stands at roughly \$2.6 billion. Interest accrues on the balances due until the utilities pay them to the government; therefore, when the fees are paid, resulting receipts (and corresponding direct spending) will probably be greater than the current balances due. As a result, CBO estimates that enacting H.R. 3053 would increase direct spending by an amount that, in total, would be equivalent to \$2.6 billion in today’s dollars, but that spending would occur after 2027.

## **Potential Reductions in Contractual Liabilities**

As previously noted, the federal government has already incurred significant liabilities for damages related to its partial breach of contracts with utilities. DOE is nearly 20 years

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9. The MRS-related provisions of H.R. 3053 could accelerate payments of onetime fees. Specifically, to the extent that those provisions enable DOE to accept nuclear waste (for storage in an MRS facility) sooner than it otherwise could under current law, they might trigger payments of onetime fees as early as 2024, when CBO assumes such a facility would begin to store waste under the bill. Regardless of those timing issues, though, the total increase in direct spending attributable to the bill’s provision regarding onetime fees would remain the same.

behind schedule in meeting its contractual obligations to accept and dispose of civilian nuclear waste, and as long as it remains behind schedule, the government will continue to incur liabilities. The extent of those liabilities will ultimately depend on when and how the government fulfills its obligations to accept and dispose of the waste.

Even though those factors would be largely unaffected by H.R. 3053, the bill could enable DOE to avoid at least some future liabilities stemming from its partial breach of contracts, thereby reducing taxpayers' exposure to such costs. Specifically, H.R. 3053 would allow DOE and utilities to voluntarily renegotiate their contractual obligations, thus potentially enabling the government to begin to fulfil them sooner than it otherwise could under current law—if DOE is able to accept nuclear waste and store it at MRS facilities, as envisioned by the bill.

Thus, the total magnitude of federal contractual liabilities under H.R. 3053 could be less than under current law. CBO has no basis, however, for estimating the potential savings that might result; they would depend on uncertain factors such as the extent to which utilities chose to renegotiate contracts and the number and capacity of MRS facilities that might be developed. The savings could be significant but if they occurred they probably would not arise until well beyond 2027.

## **ESTIMATED IMPACT ON STATE, LOCAL, AND TRIBAL GOVERNMENTS**

### **Mandates on Public Entities**

The bill would impose intergovernmental mandates as defined in UMRA by preempting state and local regulatory authority over hazardous waste that would be transported to and stored in a nuclear waste repository in Nevada. Although the preemption would limit the application of state and local laws and regulations, CBO estimates that the preemption would impose no duty on state or local governments that would result in additional spending or a loss of revenues.

### **Other Effects on Public Entities**

While state, local, and tribal governments would not be required to participate in licensing and review proceedings related to Yucca Mountain or an MRS facility under the Nuclear Waste Policy Act, CBO expects that agencies of those governments would likely choose to participate in the review processes for such projects and would incur costs. Costs of participation would include legal and administrative expenses, as well as the costs of conducting scientific and technical analyses. Any costs incurred by those entities would result from voluntary commitments. Based on an analysis of information provided by officials from Nevada's Agency for Nuclear Projects and from Nye County's Nuclear Waste Repository Project Office, CBO estimates that public agencies would spend

\$10 million to \$15 million per year over the 2018-2022 period to participate in proceedings related to the Yucca Mountain repository. CBO estimates that costs would be lower for public agencies participating in proceedings related to an MRS facility because of the lower complexity involved with such a project. (The most likely location for an MRS facility would be in New Mexico or Texas). Under the NWPA, DOE is authorized to provide financial and technical assistance to defray the costs to public agencies of participating in review proceedings for a proposed repository or MRS facility.

Although H.R. 3053 would, by itself, establish no new enforceable duties on state, local, or tribal governments, shipments of nuclear waste for temporary storage at an MRS facility and for permanent storage at Yucca Mountain probably would increase the costs to state, local, and tribal agencies of complying with existing requirements for federal grants and conditions of participation in other federal programs. Those requirements include compliance with federal laws governing transportation, public safety, and environmental protection that are implemented by public agencies. Additional spending by state, local, and tribal agencies would support a number of activities, including emergency response planning and training, public health and safety, road and rail maintenance, inspections, and security activities such as escort of waste shipments. These indirect costs would not stem from mandates as defined by UMRA, but could total tens of millions of dollars per year across all public entities. In addition, costs for upgrading highway or rail infrastructure to accommodate waste shipments could range into the hundreds of millions of dollars, based on past studies by the Nevada Department of Transportation. In the event of an accident or attack involving shipment of radioactive waste, costs would likely be significantly higher.

To compensate state, local, and tribal governments in Nevada—and in states where an MRS facility is located—for the various governmental costs of accommodating a nuclear waste storage site, the bill would authorize the DOE to enter into benefits agreements with those governments. If state, local, and tribal governments choose to enter into such agreements, they would receive annual payments from DOE that would vary depending on whether an MRS facility or a repository is constructed in the state and on whether the site is accepting waste shipments for storage. Receipt of benefits would depend upon the outcome of the NRC's licensing process, and the amount of benefits received would ultimately depend upon negotiations between DOE and the affected governments.

For the purposes of this estimate, CBO assumes that DOE would make benefits payments to state and local governments in Nevada relating to Yucca Mountain totaling \$15 million 2018 and that payments would increase to \$30 million per year from 2019 through 2021. If the NRC approves DOE's license application for the repository in 2021, CBO estimates that payments would continue at that level until the repository begins to accept waste sometime after 2027. When the repository first receives waste, parties to a benefits agreement would receive a one-time payment estimated at \$370 million, and would receive an estimated \$37 million each year thereafter until the repository ceases operations. If, on the other hand, the NRC disapproves DOE's licensee application, CBO assumes that DOE

would exercise its authority to terminate any agreements governing such benefits. For the purposes of this estimate, CBO assumes that DOE would begin providing benefits to one host government relating to an MRS facility—likely in New Mexico, Texas, or Nevada—totaling \$5 million per year beginning in 2020 and that payments would increase to \$10 million per year once the facility starts accepting waste in 2024. Finally, the bill also would require that any economic benefits derived from the future retrieval of spent nuclear fuel from Yucca Mountain be shared with the affected state, local, and tribal governments.

## **ESTIMATED IMPACT ON THE PRIVATE SECTOR**

H.R. 3053 would impose a private-sector mandate as defined in UMRA on owners of mining claims by prohibiting mining on federal land withdrawn from public land laws for the construction of a repository. Based on information submitted in DOE’s license application to NRC and information from the Government Accountability Office, CBO estimates that about 100 mining claims may be affected by the mandate. The mandate would apply only to owners of valid claims, as determined by the Secretary of the Interior, and the cost of the mandate would be the fair market value of the claim. Mining claims on federal land are determined to be valid only after the discovery of a valuable mineral deposit. Based on information about the value of mining claims, CBO estimates that the value per claim affected by the mandate would not be substantial. Consequently, CBO estimates that the cost of the mandate would fall below the annual threshold established in UMRA for private-sector mandates (\$156 million in 2017, adjusted annually for inflation). The bill would compensate owners for claims determined to be valid.

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