



The Price-Anderson Act

The Price-Anderson Act (the Act) establishes the framework to provide financial protection for risks of liability for damage from a nuclear accident, provides an efficient system for claims management, and limits total public liability to the nuclear power industry in the event of an incident.

In case of an incident, the Act assures that funds are made readily available to pay valid public liability claims. It provides a mechanism for a single federal court to hear claims and determine the extent of damages, thus expediting payments. The Act has proven to be beneficial to the public at minimal cost to the taxpayer.^{1,2} The indemnity authority in the Act provided to the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) expires December 31, 2065.

The American Nuclear Society supports the following regarding the Price-Anderson Act, which are reflected in the Further Consolidated Appropriations Act signed into law in 2024³:

- (1) Continued extension of the indemnification authority provided in the Act for at least 20-year increments.
- (2) For incidents occurring outside the U.S., the expanded DOE indemnification amount from \$500 million to \$2 billion and the revised definition of “nuclear incident” to remove requirements for the underlying nuclear material.
- (3) Continuation of the Act in a manner compliant with the Convention on Supplementary Compensation for Nuclear Damage.⁴

Future failure to renew the Act would

- deter private-sector participation in nuclear activities.

- pose challenges to NRC licensing of new reactors, including those less than 100 MWe.
- impact the DOE’s ability to achieve its statutory missions.
- impact compliance with the Convention on Supplementary Compensation for Nuclear Damage.⁴

As our economy and population grow, more electricity will be needed. Nuclear power plants are an important part of the energy mix because they provide clean and reliable electricity. For investments in nuclear power to continue and grow, there needs to be certainty with respect to how legal liability will be handled in the unlikely event of a nuclear incident. For more than 65 years, the Act has provided that certainty.

Background

The Price-Anderson Act was enacted into law in 1957 as Section 170 of the Atomic Energy Act of 1954, as amended, to meet two primary objectives⁵:

- (1) Encourage private participation in the nuclear energy industry by providing limits on liability, as well as a predictable and efficient system for claims management and administration of funds in the event of a nuclear incident.
- (2) Protect the public by ensuring adequate funds are available to satisfy liability claims if such an accident were to occur in the U.S.

The Act covers large commercial nuclear power reactors, reactors under 100 MWe, and plutonium processing and fuel fabrication facilities licensed by the NRC, as well as nuclear incidents arising from DOE activities.

The main purpose of the Act is to ensure the availability of a large pool of funds (currently approaching \$16.1 billion under the NRC's program and \$16.6 billion under the DOE's program)⁶ to provide prompt and orderly compensation to members of the public who incur damages from a nuclear or radiological incident. The Act provides "omnibus" coverage, meaning that the same protection available to a covered NRC licensee or DOE contractor extends to any persons who may be legally responsible for "public liability" arising from NRC-licensed or DOE activities, regardless of their identity or relationship to the indemnified contractor or licensee. Because the Act channels the obligation to pay compensation for damages, a claimant need not sue several parties but can bring its claim to the indemnified licensee or contractor.

The Act has been amended several times since 1957, with the most recent revision coming through an appropriations bill signed in March 2024.³ Prior to 2024, the last time the Act was amended was through the Energy Policy Act of 2005.⁷ The most recent revision extended the indemnity authority provided to the NRC and the DOE for 40 years (through December 31, 2065). The revision also increased the liability coverage for DOE contractors for a nuclear incident occurring outside the U.S. to \$2 billion from \$500 million. Finally, Congress revised the definition of "nuclear incident" to remove requirements for the underlying nuclear material.

How the Act Works

Both the NRC and the DOE implement portions of the Act by requiring financial protection to ensure that funds are available to pay public liability claims from nuclear incidents. The Act and associated regulations require the NRC and the DOE to enter into agreements of indemnification with licensees and contractors to cover valid personal injury and property damage claims filed by those harmed by a nuclear or radiological incident. In most cases this would include the costs of incident response or precautionary evacuation and the costs of investigating and defending claims and settling suits for such damages.

The amount of financial protection required under the NRC's program is determined by the rated capacity of the commercial power reactor in question. For larger reactors (greater than 100 MWe), which includes the current commercial operating fleet, financial protection is provided through private-sector funding in the form of third-party liability insurance policies and programs provided and managed by American Nuclear Insurers. Specifically, these larger reactors are required to carry \$500 million^{8,a} of primary liability insurance available from private sources and to contribute a specific amount per reactor to a secondary

^a On October 19, 2023, the NRC announced that it would be amending its regulations to increase the required amount of primary nuclear liability insurance from \$450 million to \$500 million for each nuclear reactor that is licensed to operate, is designed for the production of electrical energy, and has a rated capacity of more than 100 MWe. This final rule is effective on January 1, 2024.

insurance pool, payable in annual installments via a deferred premium program (subject to adjustments for inflation at five-year intervals).^{9,10} The combined primary and secondary insurance coverage under the NRC's Price-Anderson program for large reactors approaches a total of approximately \$16.1 billion per incident.

For smaller reactors (less than 100 MWe), financial protection is provided through a combination of private funding and an NRC indemnification of up to \$500 million. Reactors that generate between 10 MWt and 100 MWe are required to carry an amount of financial protection between \$4.5 million and \$74 million, the amount being determined by a formula in the regulations that considers the thermal power and the site's population factor.¹¹ Reactors less than 10 MWt are required to carry an amount of financial protection between \$1 million and \$2.5 million.¹²

In the case of harm from operation or cleanup of any of the DOE's facilities, such as those that produce or have produced nuclear weapons material, financial protection is provided through a government indemnity for liability of up to \$16.6 billion.¹³

The scope of the Act includes nuclear incidents arising from the operation of power reactors, the operation of test and research reactors, work performed under a DOE contract, and transportation of nuclear fuel to or from a covered facility. Public liability arising out of nuclear waste activities funded by the Nuclear Waste Fund¹⁴ would be compensated from the Fund.

As of January 1, 2019, the insurance pools had underwritten the following policies (both required by the Act and voluntarily purchased by the nuclear industry)⁵:

- Operating power reactors - 58 sites
- Nonpower reactors - 10
- Fuel fabrication facilities - 5
- Waste disposal and storage facilities - 2
- Miscellaneous facilities including nuclear laundries and research laboratories - 24
- Discontinued nuclear facilities - 18
- Suppliers and transporters - 166

In the event of a nuclear incident involving damages more than the limits established in the Act, Congress is directed to review the incident and to take whatever actions are necessary to protect the public, including the appropriation of funds.

Benefits of the Act

Benefits of the Act are realized through how it achieves the dual purposes of protecting the public and spurring participation in

the industry. By providing omnibus coverage, those who may be harmed are assured of the availability of funds to pay their claims, and firms that contribute in some manner to the design, construction, operation, or maintenance of covered licensees are all protected. Many of these companies, support services, and equipment suppliers likely would not have participated in the nuclear industry without some liability limitation.

The Act expedites orderly and equitable compensation to those harmed because of a nuclear incident. The Act streamlines the process by assigning all the cases to the U.S. district court for the area where the incident occurred. Also, just as no-fault insurance expedites payments in case of an auto accident, it is not necessary to determine who is at fault if someone is harmed by operation of a covered facility. The Act reimburses community expenses and requires that the funds be used to reimburse local and state agencies for their expenses in responding to an incident. That requirement protects the taxpayers in the area from paying for such expenses.

The Act motivated the private insurance industry to develop a means by which nuclear power plant operators could meet their financial protection responsibilities. Pooling provides a way to secure large amounts of insurance capacity by spreading the risks over a large number of insurance companies. The members of American Nuclear Insurers, which currently writes all nuclear liability policies, retain about two-thirds of the liability exposure under each policy and cede the remaining one-third to Nuclear Electric Insurers Limited and reinsurers around the world. This approach allows American Nuclear Insurers to marshal the resources of the worldwide insurance community and spread the uncertainties of the risk over a large financial base. The Act has enabled insurers to provide stable, high-quality coverage for nuclear risks.¹

In the first 61 years of Price-Anderson protection (i.e., 1957 to December 2018), the nuclear insurance pools relevant to the NRC's Price-Anderson program have paid a total of approximately \$522 million for claims (inclusive of claims made against policies required by the Act and the NRC's regulations, as well as claims related to other nuclear liability policies). To date, no claims have required activation of the secondary insurance pool applicable to larger commercial reactors under the NRC's program.¹ The DOE has concluded that payments made under its Price-Anderson indemnification since 1998 demonstrate that its program remains "cost-effective and appropriate" and that continuation of the Act is "in the best interests of DOE, its contractors, its subcontractors and suppliers, and the public."²

It should be noted that the federal government provides similar insurance mechanisms for other types of disasters, such as floods, agricultural disasters, bank and savings and loan company failures, home mortgages, and maritime accidents. Liability limits

also exist for oil spills,¹⁵ bankruptcy, worker's compensation, and medical malpractice.

Three Mile Island Accident

The Three Mile Island Unit 2 (TMI-2) accident, which occurred on March 28, 1979, provides a good example of how the Act's provisions work. Representatives of the insurance pools arrived in Harrisburg, Pennsylvania, the day after the accident and established a local office two days later on March 31. Advertisements were placed in local newspapers. The insurance paid for the living expenses of families who decided to evacuate, although evacuation was not ordered. On the first day of operations, the office made payments of almost \$12,000. By April 2, the pools had advanced funds to 2,400 persons. The payments increased daily and reached a per-day peak of \$167,286 on April 9, 1979. A total of about \$1.2 million in evacuation claims were paid to 3,170 claimants. The pools also paid over \$92,000 in lost wage claims to 636 individuals.^{16,17,18}

Following the TMI-2 accident, numerous lawsuits were filed in state and federal courts in Pennsylvania, alleging various injuries and property damages. These suits were consolidated into one suit before the Federal District Court in Harrisburg. In September 1981, a settlement agreement was signed, under which the insurance pools paid into a court-managed fund \$20 million for economic harm to businesses and individuals within 25 miles of the plant and \$5 million for the establishment of a public health fund in the area.

Although no health damages from the accident were substantiated, payments to more people took place in the following years amounting to more than \$70 million through 1997 (\$42 million in indemnity settlements and \$28 million in expenses). Payments were all from the primary insurance coverage, and funds from the secondary insurance were not needed.^{16,17,18}

Fukushima Daiichi Accident

On March 11, 2011, the magnitude 9.0 Great East Japan Earthquake and subsequent tsunami damaged the Fukushima Daiichi nuclear power plant. The events led to a station blackout and failure of cooling, and radioactivity was released to the environment. Protective actions for the local population took place, including evacuations, sheltering, and the defining of zones including restricted areas. The restricted areas experienced considerable earthquake and tsunami damage in addition to concerns about radioactive contamination. The Fukushima Daiichi accident resulted in damages exceeding \$200 billion (in 2011 dollars).¹⁹

The legal framework for compensating victims of the accident has raised several issues, including sufficiency of funds, who is liable, fairness to victims, and efficiency of the process. Considering this, it is important to contrast the legal framework for Japan's

compensation legislation with that of the Price-Anderson Act, and to be informed by lessons learned from the aftermath of previous disasters.

The NRC studied lessons learned from Fukushima to identify vulnerabilities and to inform regulatory action. Even with the low probability of an accident like the Fukushima Daiichi event occurring in the United States, the NRC has since imposed safety enhancements to mitigate the potential consequences if a similar event were to occur.¹

In its 2021 report to Congress, the NRC compiled data from probabilistic risk analyses in environmental reports prepared by NRC licensees as part of license renewal applications. Estimated off-site economic costs ranged from a low of \$6.05 billion to a high of \$56.8 billion.¹ Based on these estimates, accidents in the U.S. are not expected to create off-site damage on the scale of the Fukushima Daiichi accident, but Congress may be called upon, as outlined in the Act, to provide additional compensation for public liability claims resulting from a nuclear incident if damages occur that exceed the coverage limits.

The Act's Relationship to International Agreements

In addition to covering domestic accidents, the Act provides limited indemnity coverage for incidents involving DOE activities occurring outside the U.S. The scope of the DOE indemnification under the Act for nuclear accidents occurring outside the U.S. is limited to \$2 billion. Also, the coverage extends only to contractual activity engaged in for or on behalf of the DOE.

Major nuclear liability international treaties and protocols include the Paris Convention on Third Party Liability in the Field of Nuclear Energy,²⁰ the Brussels Convention Supplementary to the Paris Convention on Third Party Liability in the Field of Nuclear Energy,²¹ the Vienna Convention on Civil Liability for Nuclear Damage,²² the Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention,²³ and the Convention on Supplementary Compensation for Nuclear Damage.⁴

The Convention on Supplementary Compensation for Nuclear Damage (CSC) is an international convention on civil nuclear liability under a legal framework separate from that housing the Act. The U.S. Senate ratified the CSC in 2006, and the CSC entered into force in 2015. As of January 2023, the CSC has 11 member countries and 19 signatory countries. In the event of a nuclear incident in any party's territory, the CSC requires all parties to contribute to an international supplementary fund to provide an additional tier of compensation beyond that available under that party's national law.

The CSC contains a "grandfather" provision that permitted the U.S. to join the CSC without changing the Price-Anderson legal framework if that framework continues to achieve certain specified objectives. Therefore, no changes were needed in the Act as a

result of ratifying the CSC. However, modifications to the Act would have to consider U.S. obligations under the CSC. Failure to continue the Act or replacement of the Act with a similar law not meeting the requirements of the CSC would be inconsistent with ratification.

In its 2023 report to Congress, the DOE recommended expanding the scope of the Act to also cover materials not owned by the U.S. and to increase the DOE indemnification limit from \$500 million to \$2 billion.² The DOE report pointed out that, with the entry into force on January 1, 2022, of the 2004 Paris Convention and the 2004 Brussels Convention Supplementary to the Paris Convention, the liability limit for member countries to those conventions is approximately \$1.75 billion. The most recent update to the Act eliminates an unnecessary constraint on DOE missions in the national interest and provides equitable compensation to members of the public in amounts comparable to that available in other countries.²

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