Nuclear power is a reliable and environmentally-friendly energy source that is underutilized in the United States, largely due to over-regulation. In 2016, nuclear energy accounted for 20 percent of the electricity generated in the U.S. without producing any greenhouse gas emissions.¹

Nuclear energy has a long history of safe and successful operation since its initial creation in 1942. But accidents like the ones at Three Mile Island, Chernobyl, and most recently, Fukushima have marred public opinion of atomic power. Accidents involving nuclear energy are very rare, but highly publicized, creating a misperception that nuclear is far more dangerous than it actually is. Throughout its history, no one has died from a commercial nuclear energy accident in the U.S. In fact, nuclear energy is one of the safest methods of energy production.²

Despite nuclear energy’s environmental and safety benefits, there has been very little expansion of the U.S. nuclear industry over the past 40 years. Most nuclear power plants in the U.S. were constructed in the 1960’s and 70’s.³ This lapse in new construction is likely the result of a strict and overly-cautious regulatory process for the licensing and operation of nuclear power plants, as well as the lack of a permanent storage facility for the nation’s nuclear waste.⁴

Policymakers are enacting regulations to promote safety in response to public fears of nuclear energy. Although these regulations can be beneficial for protecting public health from the negative impacts of an industry, regulations also have trade-offs that can increase costs, reducing economic activity and innovation that could provide public benefits such as affordable access to reliable and clean energy.⁵ Overly stringent regulations, especially for managing nuclear waste and licensing new power plants, are likely reducing investment and innovation in the nuclear industry.

Nuclear developers must jump over countless regulatory hurdles in order to meet constantly changing requirements. The unpredictability and stringency of the current regulatory environment increases costs for developers.⁶ For example, a project by Westinghouse quickly fell behind schedule and over budget, partially because developers had to comply with the newly created Aircraft Impact Assessment, which requires that new nuclear facilities be able to withstand the impact of commercial aircraft.⁷ While security is a major concern, by the NRC’s own admission “…compliance with the rule is not needed for adequate protection to public health and safety or common defense and security.” These cost overruns and schedule delays eventually forced Westinghouse to declare bankruptcy in March 2017.⁸ The over-regulation of nuclear power has also pushed nuclear innovation overseas. In one case, a private nuclear developer announced plans to move its operations to China where the timeline for nuclear licensing is much shorter.⁹

Another roadblock to further nuclear energy development is the lack of a long-term plan for the disposal of the radioactive waste produced by nuclear reactors. Yucca Mountain, a deep underground storage facility in Nevada, was intended to be this disposal site, but due to political and regulatory issues, it has not been operational since 2009. The U.S. government has yet to find an alternative solution for the safe storage of radioactive waste.

was initially meant to be the sole site for handling the storage and disposal of nuclear waste, but public pressure and budget cuts, among other factors, led to the site being shuttered. Now, nuclear waste is stored at nuclear facilities across the nation. These short-term sites are already at full capacity while operating plants in the U.S. continue to produce more waste.

The current regulatory environment for nuclear is stifling the growth of a promising energy source. Streamlining the regulatory process would allow greater opportunity for innovation and expansion of the nuclear energy industry.

Policy suggestions

Two of the largest regulatory hurdles the nuclear industry faces are the design certification process and nuclear waste disposal. Reforming these areas could encourage the development of new, advanced nuclear technologies as well as expansion of the overall nuclear energy industry within the United States. Policymakers should encourage the growth of the nuclear energy sector if the United States is to continue to strive for clean and reliable electricity. Some suggested policy changes that could help increase investments in nuclear energy include:

• **Improve the design certification process to reduce the time and cost needed to obtain certification.**
  To encourage investment in nuclear, the NRC should simplify or eliminate unnecessary tests within the design certification process while maintaining basic safety standards for new plants.

• **Develop an effective long-term waste disposal solution to reduce developer uncertainty.**
  Without a viable waste disposal option, nuclear developers have to store their own waste on-site. This adds uncertainty and a large financial burden. There are a number of potential solutions the NRC could pursue, including building a permanent waste storage facility, allowing permanent on-site waste disposal, or using innovative new waste disposal methods.

• **Alleviate public fears and concerns surrounding nuclear power by educating the public about the realities of nuclear power.**
  Many nuclear regulations were created in response to unfounded public fears of nuclear power. If nuclear energy companies or government agencies better educated the public about the prospects of nuclear power, they could decrease opposition and help remove unnecessary regulations.

• **Shorten the duration of the licensing process to reduce costs.**
  Reducing the time it takes to obtain a license would provide nuclear developers with greater certainty and would reduce regulatory compliance costs.

• **Ease the Combined Operating License amendment process.**
  Nuclear developers currently face a difficult amendment process to make necessary changes. If the NRC eases the amendment process, nuclear developers can make necessary design changes more easily. An overly burdensome amendment process discourages innovation, safety, and the economic viability of nuclear power.

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