



A Bright Future for Nuclear Power

Energy source is reliable, safe and effective

By Ben Lieberman

The debate over nuclear power is filled with contradictions. Depending on whom you ask or what you look at, interpretations radically differ: nuclear power is either dangerous or safe, environmentally harmful or beneficial, expensive or cheap. Of course, the truth lies somewhere in the middle of these extremes. But overall, the prospects are good for construction of new nuclear power plants within the next ten years. This is especially true given the many pro-nuclear provisions in the recently passed energy bill.

Strong Safety Record

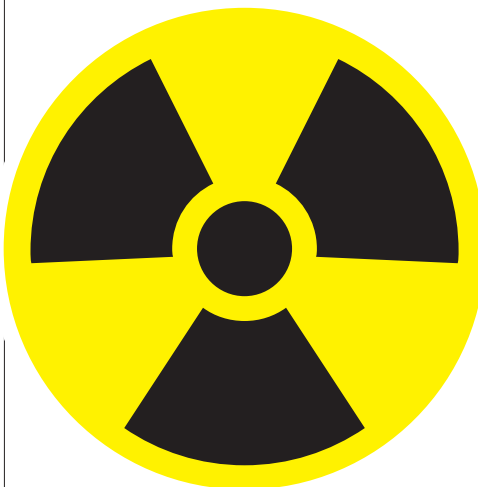
Nuclear power currently provides 20 percent of America's electricity. Remarkably, it does so despite only a handful of new facilities coming online in the last 25 years. The 1979 incident at Three Mile Island put an abrupt end to new nuclear power projects that persists to this day. Still, 103 American nuclear facilities, either predating Three Mile Island or already in the works at the time, continue to operate and have amassed a strong safety record over the last quarter century. In addition, new and safer designs have been introduced that are in widespread and problem-free use throughout the world. Although it can never be said that the risk of catastrophic failures is zero, the risk in a new state-of-the-art nuclear plant would be exceedingly small.

Challenges, however, remain. One of the chief among them is the storage of spent fuel. Absent a national repository (Yucca Mountain Nevada has yet to receive its first shipment due to successful delaying tactics by Nevada's congressional delegation and state officials), nuclear waste is stored on-site, which is far from ideal. Furthermore, opponents of nuclear power have raised fears that terrorists would try to attack facilities and/or nuclear materials in transit. But most experts believe such risks are small and can be defended against.

Nuclear power has long had its toughest critics within the environmental community, but the monolith of green opposition is beginning to crack. At least some formerly "no-nukes" greens are now willing

to balance the long-held fears about the release of radiation against the benefits of nuclear power.

Nuclear power is the only economically feasible means of generating significant amounts of electricity without any emissions. Renewable sources like wind, solar, and biomass are just as clean, but are not capable of generating more than a few percent of America's growing energy needs. Coal is inexpensive and abundant. It is currently used to generate half the nation's



electricity. But its combustion emits several air pollutants as well as carbon dioxide, a greenhouse gas. Natural gas is a much cleaner fossil fuel than coal. But natural gas' tight supply and high price raises doubts about its ability to supply the nation's expanding electricity needs, which are projected by the Energy Information Administration to increase by 1.8 percent annually through 2025.

Absence of Emissions

One can question the extent of nuclear energy's environmental benefits. After all, pollution from coal-fired plants has been declining for decades. Thus, the downside of coal use is being reduced without need for substitution. In addition, the science is mixed over the effects of global warming, and it may well prove to be considerably less of a threat than once feared. Nonetheless, the absence of emissions is a

plus for nuclear power, and one that even some of the industry's strongest critics are willing to acknowledge.

Cost presents another conundrum for nuclear power. On the one hand, nuclear plants are very expensive to build, but once they are up and running they generate massive amounts of kilowatt hours at low operating costs. Indeed, in the early days of nuclear power proponents envisioned a future where electricity would be "too cheap to meter." Using nuclear power for future base-load additions would also have the advantage of taking some price pressure off natural gas.

The initial cost barriers to nuclear power have proven almost as formidable as the political ones. But that may change with the recent passage of the Energy Policy Act of 2005, which contains a host of generous—critics say far too generous—provisions designed to encourage new nuclear plants. This includes federally funded research and development, reauthorization of federal indemnification, insurance against regulatory and legal delays, loan guarantees, and hefty tax credits for the electricity sold by new nuclear plants. By some estimates, these benefits could exceed \$5 billion.

Industry consortia already exist and are busy navigating the lengthy approval process for new nuclear plants. A state-of-the-art nuclear facility, considered a near impossibility at the beginning of the decade, could possibly be under construction before the end of it. And if one gets built, more will likely follow. In addition, virtually all of the existing nuclear plants are set to stay online for the foreseeable future, and indeed most are generating more electricity now than when they were new.

Overall, nuclear power has a bright future and will continue to play an important and potentially growing role in meeting America's energy needs.

— Ben Lieberman is a Senior Policy Analyst with the Thomas A. Roe Institute for Economic Policy Studies at the Heritage Foundation in Washington, DC.