118TH CONGRESS
1ST SESSION

H. RES. 124

Expressing the sense of the House of Representatives that the United States should support the expansion of domestic nuclear energy and advanced nuclear technology as a viable source of power in order to promote United States nuclear energy leadership and global energy independence.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 14, 2023

Mr. DONALDS (for himself, Mr. FLEISCHMANN, Mrs. CAMMACK, Mr. NEHLS, Mr. OWENS, Mr. MOORE of Alabama, Mr. FEENSTRA, Ms. MACE, Mr. CLINE, and Mr. WEBER of Texas) submitted the following resolution; which was referred to the Committee on Energy and Commerce, and in addition to the Committee on Armed Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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RESOLUTION

Expressing the sense of the House of Representatives that the United States should support the expansion of domestic nuclear energy and advanced nuclear technology as a viable source of power in order to promote United States nuclear energy leadership and global energy independence.

Whereas nuclear energy has generated one-fifth of the electricity used in the United States since 1990;

Whereas the Secretary of Energy has stated that, ''nuclear energy is clean energy and it is vital to creating good-

paying jobs, supporting our energy transition, and saving our planet'';

Whereas the International Energy Agency determined that nuclear power forms the cornerstone of zero-carbon electricity generation;

Whereas conventional nuclear energy plants are highly reliable and consistently operate, on average, over 92 percent of the time;

Whereas the generation of electricity from nuclear energy is up to 2 times more reliable than the generation of electricity from natural gas and coal, and up to 3.5 times more reliable than the generation of electricity from wind and solar;

Whereas nuclear reactors produce substantially more energy relative to their land footprint than solar and wind projects, which require over 30 times and 100 times, respectfully, the land area for the same generating capacity;

Whereas 482,000,000 metric tons of carbon emissions were avoided by using nuclear energy in 2021;

Whereas, in 2019, 476,000,000 metric tons of greenhouse gas emissions were not released into the atmosphere due to the utilization of nuclear energy in the United States, which is equivalent to removing 100,000,000 cars off the road;

Whereas conversely, in 2014, Vermont's Yankee Nuclear Plant closed and the State saw a 650,000-metric ton increase in carbon dioxide emissions within just 2 months;

Whereas electricity demand throughout the United States is predicted to increase by approximately 34 percent by 2050;

Whereas, as of July 8, 2020, there are 28 States in which at least 1 commercial nuclear reactor operates;

Whereas many States around the United States have enacted nuclear energy-related laws and are in the process of adopting policies and appropriating funding for the expansion of nuclear energy in their State;

Whereas nuclear energy facilities can repurpose retired fossil fuel power plants by using existing infrastructure and transitioning fossil fuel power plant workers that already understand the basics of operating the nuclear energy facility;

Whereas, in 2022, nuclear energy supported over 475,000 well-paying, sustainable, direct and indirect jobs throughout the American nuclear industry;

Whereas building a conventional nuclear reactor employs up to 7,000 workers at peak construction;

Whereas nuclear energy worker salaries are, on average, 50 percent higher than the salaries of employees that work in other electricity generation facilities;

Whereas the United States nuclear energy industry spends roughly $11,000,000,000 annually on labor, which is approximately $100,000,000 per reactor per year;

Whereas, for every 100 jobs at a nuclear power plant in the United States, 66 other jobs are created in the local community;

Whereas nearly 1 in 4 nuclear energy workers are veterans;

Whereas nuclear energy adds approximately $60,000,000,000 to the United States gross domestic product each year;

Whereas, unlike most energy sources, nuclear power plants have up to 2 years of fuel stored securely on-site, which

makes nuclear power plants hardened against fuel-related supply chain disruptions;

Whereas a uranium pellet the size of a pencil eraser contains the same amount of energy as 17,000 cubic feet of natural gas, 1,780 pounds of coal, or 149 gallons of oil;

Whereas 5 uranium pellets generate enough electricity to power the average household annually, which compares to the same amount of electricity produced by 5 tons of coal;

Whereas global uranium supply is vastly available and the United States can generate nuclear power at its current levels for more than a century with just the natural uranium ore deposits that have already been identified;

Whereas nuclear power plants offer a level of protection against natural and adversarial threats that goes far beyond the protective measures taken at most other American energy generating facilities;

Whereas nuclear power plants' infrastructure and facilities are built to withstand extreme weather, as proven during past and recent hurricanes and freezing temperatures driven by polar vortex events;

Whereas the safe operation of nuclear energy in the United States has resulted in no radiation-related deaths or long-term evacuation of surrounding communities;

Whereas the utilization of conventional and advanced nuclear energy technologies will significantly reduce energy costs, although the initial investment burden of licensing and constructing any type of nuclear reactor will be substantial;

Whereas the production of nuclear energy has become a much safer and more efficient process with the development

and commercialization of innovative advanced nuclear reactors;

Whereas advanced nuclear reactors present uniquely innovative options for the sustainable generation of clean energy in the United States and around the world;

Whereas a typical 1,000-megawatt nuclear power plant in the United States requires approximately one square mile of land to operate, however an advanced nuclear reactor requires about 3 times less land area compared to a conventional nuclear power plant, depending on the reactor type and the specific characteristics of the community;

Whereas the Nuclear Regulatory Commission regulates 31 research and test reactors;

Whereas approximately 98 universities in the United States offer a nuclear engineering program and several universities have expressed interest in advanced nuclear reactors as a power source for their campuses;

Whereas more than 45 companies and research organizations across the United States have advanced nuclear energy projects underway;

Whereas many advanced nuclear reactors, in comparison to conventional nuclear reactors, can operate at much higher temperatures without water, have built in safety features (such as automatic shutoff mechanisms), can operate autonomously without disruption for several years at a time, and have a naturally enhanced resistance to nuclear proliferation;

Whereas low-emission heat and steam from advanced nuclear reactors can supply reliable, clean energy for hard-to-decarbonize sectors, such as the industrial sector and chemical production sector;

Whereas the total amount of spent nuclear fuel produced over the tenure of the United States nuclear energy industry could fit within the bounds of a football field at a depth of less than 10 yards;

Whereas spent nuclear fuel can—

(1) be safely stored in a deep geological repository;

(2) be repurposed and recycled using innovative technology; and

(3) potentially be safely stored underground using techniques such as deep borehole drilling;

Whereas certain advanced nuclear reactors have the capability to use spent nuclear fuel from another nuclear reactor as a fuel source;

Whereas recycling spent nuclear fuel could significantly reduce the burden of storing spent nuclear fuel, which would make the nuclear fuel cycle more sustainable and further reduce the already-low carbon footprint of nuclear energy;

Whereas 96 percent of spent nuclear fuel content is reusable energy, and recycling spent nuclear fuel can cut the use of natural uranium resources by 25 percent, reduce the volume of high-level waste slated for disposal by 75 percent, and reduce the waste's toxicity by approximately 90 percent;

Whereas spent nuclear fuel can be reprocessed up to 3 cycles;

Whereas, by 2050, energy produced by advanced nuclear reactors may account for a significant amount of the clean energy generated in the United States, with certain estimates predicting that up to 50 percent of total United States electricity generation could come from conventional and advanced nuclear energy sources;

Whereas the offsite component fabrication and modular manufacturing process for advanced nuclear reactors will likely lead to cheaper and faster installation, reduced regulatory burdens, and ultimately a streamlined commercial deployment of advanced nuclear reactors;

Whereas advanced nuclear reactors offer seamless integration to complement other renewables within microgrids, balancing out variations in generation over time to reliably meet demand in the United States;

Whereas, in the aftermath of a natural disaster when power outages persist, an easily transportable advanced nuclear reactor could provide electricity or heat for essential services, such as hospitals, airports, communications centers, government offices, and water purification facilities, instead of diesel generators, thereby producing a cleaner and more efficient source of power that can last up to 20 years without refueling;

Whereas nuclear medicine, including the use of medical radioactive isotopes, can be used to diagnose and treat different diseases with pinpoint precision, which will ultimately save American lives;

Whereas radioactivity used for medical diagnostics and treatments is elementally the same as that used for nuclear power;

Whereas medical isotopes are made in nuclear reactors;

Whereas, with advances in nuclear science and technology, and new approaches to the medical application of radioisotope technology, outcomes for cancer patients have improved tremendously;

Whereas nuclear power plants produce a vital resource in the global fight against COVID–19: Cobalt–60, which has

sterilized billions of pieces of medical equipment in hospitals on the front lines of the pandemic;

Whereas nuclear radiation is used to treat food and kill bacteria, insects, and parasites that cause illness;

Whereas the Armed Forces have intentions to utilize advanced nuclear reactors at United States military bases, both domestically and internationally, because of advanced nuclear reactor's ability to generate clean electricity consistently and reliably in locations that experience severe weather patterns;

Whereas the Armed Forces are currently using diesel for generators in these remote locations to provide electricity, such as in Alaska, which require refueling approximately every 72 hours;

Whereas, since 1954, the Naval Nuclear Propulsion Program has maintained and operated more than 100 naval nuclear reactors, serviced and supplied by thousands of American workers, to power United States aircraft carriers, submarines, and other military vessels;

Whereas advanced nuclear propulsion provides an alternative clean energy source to power commercial ships to cut emissions and remove the costly refueling infrastructure needs for liquid-based energy carriers;

Whereas floating nuclear barges are being designed and developed to supply energy to remote locations and areas impacted by a natural disaster;

Whereas the advantages of using advanced nuclear propulsion include long intervals between refueling, faster transit speeds, production of heat or cooling for cargo, reduced draft allowing increased cargo capacity, eliminating the need to transport huge quantities of engine fuel, and re-

ducing the probability of environmental damage from fuel leakages;

Whereas nuclear thermal propulsion and nuclear electric propulsion vehicles are to be made at one-third to one-half the size of comparable chemical propulsion vehicles, which would increase travel speeds and cut costs of space missions;

Whereas nuclear thermal propulsion can be used to transport astronauts and cargo to Mars in 4 to 5 months, rapidly decreasing long term radiation exposure in space, as opposed to 7 to 9 months using traditional chemical fuels;

Whereas the National Aeronautics and Space Administration (NASA) and private companies are creating technologies that use advanced nuclear radioisotopes to channel heat into electricity, even in temperatures below -280° F on the lunar surface, for both manned and unmanned missions to Earth's satellites, the Earth's Moon, Mars, and deep space;

Whereas NASA and the Department of Defense have programs in place to put a lunar nuclear reactor on the moon in the early 2030s to supply electricity for Artemis missions, since the lunar night is roughly 14 days and solar panels would not be able to generate power from the sun and energy storage is too large and costly;

Whereas advanced lunar nuclear reactors can be used for future space missions to Mars, since Mars has dust storms that cover solar panels, rendering them useless, which recently led to the shut down of NASA's Insight Mission after only 4 years;

Whereas nuclear energy may be used to desalinate highly salty waters and industrial wastewater to ultimately produce multiuse potable water;

Whereas nuclear energy has the potential to cleanly power large-scale hydrogen production facilities and utilize direct heat from the nuclear reactor to assist with the hydrogen production process;

Whereas advanced nuclear reactors offer the possibility of a clean source of energy to power energy intensive mining operations that are typically powered by diesel generators;

Whereas advanced nuclear reactors can be coupled with other renewable sources of energy, such as wind and solar, to power electric railroads and electric vehicle charging stations;

Whereas advanced nuclear reactors can produce clean, consistent, and reliable energy to power data centers which typically require large amounts of energy; and

Whereas the future of cryptocurrency mining, which requires extensive energy output, will greatly benefit from utilizing a noncarbon-emitting, stable, and cost-competitive nuclear power source: Now, therefore, be it

Resolved, That it is the sense of the House of Representatives that, in order to meet the growing energy demands of the United States in a domestically favorable fashion and to promote American nuclear energy leadership while retaining the United States economic viability in the worldwide nuclear energy marketplace, it is necessary to expand the use of nuclear energy by—

(1) embracing efforts to maintain the existing nuclear fleet and promoting efforts that seek to utilize emerging innovative nuclear energy technologies, such as advanced nuclear reactors, to promote increased energy output, improve public safety, more effectively reduce greenhouse gas emissions, and alleviate the continuous challenge relating to storing spent nuclear fuel;

(2) recognizing nuclear energy as one of the cleanest power sources in regard to greenhouse gas emissions, while simultaneously understanding nuclear energy's capability of being coupled with other clean energy sources, and stressing the importance of nuclear energy being recognized on a level regulatory playing field that is similar to other clean energy generating sources;

(3) supporting initiatives by the Department of Defense for the deployment of nuclear reactors to enhance energy resiliency and electricity assurance for critical military missions, systems, and assets in contested logistical environments where fuel supplies are targeted or denied;

(4) addressing critical domestic gaps in the procurement of nuclear reactor construction material, and resolving current barriers and obstacles that re-

late to a domestic supply of nuclear fuel and other nuclear supply chain challenges;

(5) encouraging sustainable domestic mining of uranium, in addition to increasing uranium enrichment, fabrication, and deconversion capabilities in the United States to efficiently secure America's energy independence and power United States nuclear reactors without the need to rely on other countries;

(6) actively increasing public awareness surrounding the safety of nuclear energy and continuously combating false information relating to nuclear power, including nuclear energy's negative connotation in the United States which originates from the only 3 nuclear accidents in the history of the world, including the only event that took place in the United States in March of 1979 at Three Mile Island Nuclear Generating Station Facility, in which no deaths or medical symptoms were directly tied to the nuclear incident;

(7) streamlining the regulatory process, providing the Nuclear Regulatory Commission the necessary resources to effectuate positive change, and reducing the regulatory barriers that currently derive from the Nuclear Regulatory Commission's cautious and traditionalistic approach to the licensing

and constructing of new nuclear reactors, which such regulatory approach is based on outdated technology standards dating back over 50 years when the agency was first established and solely focused on safely regulating conventional nuclear reactors, to ultimately bolster innovation and encourage the use of emerging technologies, such as advanced nuclear reactors, to secure America's energy independence and allow for the greater exercise of free enterprise, including participation by America's small businesses that seek to get involved in the nuclear industry, without reducing safety precautions; and

(8) promoting the use of new advanced nuclear technologies within energy, water, medicine, manufacturing, space, digital assets, transportation, and other public policy areas.

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