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Monitored this issue:

US Election 2024: White House & Congress' Display Bipartisan Support for Existential Nuclear Threats

By Paul Gunter, Beyond Nuclear, Takoma Park, MD, USA

With the November 5, 2024 General Election Day approaching in the United States, a rush of campaign pronouncements and speculation will inundate US voters seeking to inform their choices with distinctions in policy between the candidates of nation's two major Democratic and Republican parties.

Both major US political parties profess to support an "all of the above" national energy economy. But on examination, Democrats and Republicans differ on a number of energy matters including the ratio of energy generation sources. President Biden's Democratic Party Administration is getting credit for championing globally historical record production of crude oil, liquid natural gas and renewable energy. Republicans are furiously criticizing Biden for pouring billions of dollars into renewable energy while hastening the closure of more coal-fired generation plants by increasing standards and subsequently the rising cost for carbon capture technology. At the same time, the Biden Administration is being strongly criticized by climate action and environmental activists, as well as "climate-hawk" Democrats, for delaying the deployment of the same carbon capture technology for the nation's record breaking production of natural gas. The US is now the world's leading exporter of climate-destroying natural gas where the Biden Administration has only recently responded to pressure to declare a "temporary" cap on the nation's huge gas exports.

But when it comes to tilting the expansion of an "all of the above" US energy policy to include nuclear power, it's very nearly a political consensus. Both parties are in harmony to expedite new reactor design certification, fast track the commercial licensing process and reactor construction for both domestic use and export, cut back "overly burdensome" federal regulatory oversight and enforcement of nuclear safety and reopen domestic uranium mining targeting indigenous people's land. Democrat and Republican bipartisan support for a nuclear power expansion is at a fever pitch despite the US industry's well documented history of broken promises, financial failures and a recurring inability to control cost-of-completion and time-to-completion. Still, the industry lobby has persuasively won over strong bipartisan Congress support and the White House to jump start yet another era, and likely dangerous error, of nuclear power relapse in national energy policy. According to the March 9, 2007 US Congressional Research Service (CRS) **report** the last so-called US nuclear "renaissance" was commissioned by Congress' with the passage of the Energy Policy Act of 2005, launching new domestic reactor projects for 34 units by 2007. Seventeen years later, only two of those units ever became operational. Vogtle Units 3 and 4 cost more than double their estimated cost of completion in excess of $35 billion and years behind schedule. The other 32 units were cancelled and only two units to start construction at South Carolina's V.C. Summer nuclear power station site that were abandoned mid-construction with $9 billion in sunk costs.

Here are two critical examples of the current delusional thinking that grips the Democratic Party controlled White House and an otherwise sharply divided Congress. This Congress has reached a bipartisan consensus

to potentially squander hundreds of billions of US dollars and precious little time to expand nuclear power's global role that ultimately threatens two existential threats; climate failure and nuclear war.

Bipartisan US delegation to COP28 boasts of its legislation for nuclear power expansion at climate talks

The nuclear industry is once again reimaging itself in the 21st Century as "the answer to climate change." The industry made its most dubious pitch yet at the December 2023 United Nations Conference Of Parties (COP28) on climate change in Dubai, United Arab Emirates, to triple nuclear power generating capacity by 2050. The US congressional COP delegation sent to sell nuclear power to the global climate conference was led by the Biden Administration's Special Presidential Envoy on Climate, former Secretary of State John Kerry, longstanding US Democrat Senator from Massachusetts and the Democratic Party's 2004 nominee for President of the United States.

Top lawmakers from the U.S. House Energy and Commerce Subcommittee on Energy, Climate and Grid Security, Republican Chair Jeff Duncan (South Carolina) and ranking Democrat member Diana DeGette (Colorado), shared the COP28 platform to tout their bipartisan legislative support for the "Atomic Energy Advancement Act" (House Resolution-6544). The resolution had just passed the full US House Energy and Commerce Committee (47 to 2) the day before its members departed for the Dubai COP. The Nuclear Advancement Act combines congressional legislation to ensure that a next generation of US reactors can be licensed on time and a cost-effective basis despite the industry's long and recurring history to the contrary. The US Senate version, the "Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy (ADVANCE) Act" (Senate Bill 1111) was passed folded into the US National Defense Authorization Act on a "must pass" rider.

The ADVANCE Act was led by the Senate Environment and Public Works (EPW) Committee's Ranking Republican Senate Member Shelley Moore Capito (West Virginia), Democrat Chair Senator Chairman Tom Carper (Delaware), Democrat Senator Sheldon Whitehouse (Rhode Island) and a bipartisan group of colleagues to reassert America as the "undisputed international leader for nuclear energy."

As of May 8, 2024, the US House had approved another bill, the Fire Grants and Safety Act (393 to 13) with the ADVANCE Nuclear Act bipartisan nuclear legislation neatly tucked inside. The House passage increases the chances to pass the Senate compromise nuclear bill awaited by President Biden for signature sometime in 2024.

Republican Congressman Duncan took the opportunity in Dubai to boast to media that the climate conference talks had become the "nuclear COP" solution for climate action with the US declaration leading more than 20 countries (though conspicuously missing Russia and China) to triple the world's nuclear energy production by 2050. In fact, the "nuclear COP" did capture headlines around the world even though 116 countries also signed the "Global Renewable Pledge and Energy Efficiency Pledge" in an agreement to triple renewable energy generation capacity to at least 11 Terawatts by 2030 and double global energy efficiency improvement rates from around 2% per year now to more than 4% per year.

Still overshadowing the COP28's bombastic vision to triple nuclear power is the declaration's dubious invitation to World Bank shareholders, international financial institutions and development banks to reverse their organizations' prohibition on lending policies to unpredictably expensive nuclear power projects with unreliable records of completion. It is the World Bank that has already pledged in 2013, "we don't do nuclear energy." Nothing in the industry's

performance to date other than a media feeding frenzy on the barrage of unfounded promises has changed the negative financial outlook held by these financial institutions. In fact, unproven "advanced" and Small Modular Reactor designs are proving to be more vulnerable to "diseconomies of scale" where "small" is more expensive per unit of power than the previous generations of large reactors.

As for nuclear power's efficacy in actually mitigating climate crisis, there is more than initially meets the eye. The bipartisan party argument for ramping up nuclear power to mitigate the climate crisis is narrowly limited to nuclear power reduced carbon emissions impact on climate change. However, it is Democrat Senator Sheldon Whitehouse (Rhode Island), a congressional nuclear booster with the COP28 delegation and member of the Senate Committee on Environment and Public Works (EPW) that oversees the US Nuclear Regulatory Commission, who had earlier interrogated the Commissioners on another critical factor; climate change impacts on safe reactor operations now and into the future.

On April 2, 2019 during the Senate EPW committee hearing [@time mark **01:12:31**] Senator Whitehouse confronted the five NRC Commissioners on the regulatory agency's non-existent oversight of the safety impacts of climate change upon nuclear power plant operations now and projected into the future. Senator Whitehouse delivered a stern rebuke of the seated Commissioners for watering down a post-Fukushima nuclear accident rulemaking with direct bearing the mitigating the consequences of climate change impacts on nuclear accident risks. The NRC staff had submitted a proposed final rulemaking to the Commission to make recommendations to make the upgrade of reactor flood protection "mandatory." After an industry and public comment period was closed and receiving no comments to the contrary, the Commissioners instead voted in the majority to make the safety-related reactor flood protection as in place today, and tomorrow, "voluntary." The Senator's incredulity was visible as he addresses the Commissioner's lack of accountability to deliberately ignore climate change's projected impacts on safe nuclear power plant operations.

Senator Whitehouse: "Do any of you doubt that climate change is causing sea levels to rise around the globe and along our shores? [No audible response] Let the record reflect, no doubt. Okay. Does anybody contest that post-Fukushima it has been established that flooding interferes with nuclear plant operations? Pretty obvious statement, isn't it? [No audible response.] Okay, all agreed, let the record reflect. I represent a coastal State. For those of you that aren't from coastal States, let me let you know that we all coastal States are looking at dire and uncontested and best science predictions of significant sea level rise and harm to our coasts, just so you know. So it is from that background that I wonder about the recent chain of events along this timeline..."

Senator Whitehouse took the Commissioners through the timeline of the NRC staff's promulgation of the proposed Fukushima rulemaking on flood protection actions for US reactors from November 2015 to January 2019 when an NRC Commissioners majority weakened the flood protection rule from "mandatory" to "voluntary."

Senator Whitehouse concluded his remarks that regarded the Commissioners' actions as a retreat from its regulatory accountable as well as its apparent violation of the US Administrative Procedures Act by ignoring climate change impacts on reactor safety that ultimately threatens both old and new reactors alike, "… you don't take sea level rise seriously. You don't think this is a real risk for the nine nuclear plants that are within three kilometers of our coast or the four that have been deemed susceptible to sea level rise and flooding." And with that, Senator Whitehouse

closes, “So I intend to pursue this, and I am just putting you on notice that I think this is really serious.

However, Senator Whitehouse’s pursuit of good intentions has yet held NRC and the industry accountable. Instead, he has pursued the passage of bipartisan promotional legislation for a new reactor build-out and supported extreme operating license extensions of aging and increasingly uneconomical nuclear plants into an oncoming climate crisis. Similarly, the US Congressional nuclear delegation to the COP28 left Dubai in 2023 without getting to the bottom of a litany of old and new emerging conundrums arising out of the inherently dangerous technology.

Along these same lines, two other strong proponents of nuclear power expansion, US Senator Joe Manchin, Democrat from West Virginia, Chair of the Senate Committee on Energy and Natural Resources and US Senator Tom Carper, Democrat from Rhode Island, Chair of the Senate Committee on Environment and Public Works, wrote a letter to the United States Government Accountability Office (GAO) asking Congress’ investigative arm to review the climate resilience of the nation’s energy infrastructure. The GAO chose to focus on the nation’s nuclear power plants’ resilience to climate change by examining, “1) how climate change is expected to affect nuclear power plants and; (2) what actions NRC has taken to address the risks to nuclear power plants from climate change.”

On April 2, 2024, the GAO released its Report to Congressional Requesters, “Nuclear Power Plants: NRC Should Take Actions to Fully Consider the Potential Effects of Climate Change,” (**GAO-24-106326**). Senator’s Manchin and Carper may not have been expecting the critical findings of the government’s investigative report that confirmed the “NRC’s actions to address risks from natural hazards do not fully consider potential climate change effects.”

Concerns that were also raised by Senate Whitehouse to the Commissioners for the absence of critical planning for sea level rise as just one of the climate-related hazard. The GAO more broadly critiqued the NRCs’ for not fully managing its licensing and environmental review process for the adverse impacts of climate change on reactor systems, structures and components. **Others hazards** reviewed in the GAO report include severe flooding, wildfire, hurricane storm surge, extreme cold weather events and drought that can impact safety-related reactor cooling capacity.

The GAO investigation determined “the NRC primarily uses historical data in its licensing and oversight processes rather than climate projections data.” While NRC officials interviewed by GAO were confident that their current processes to provide an adequate margin of safety for reactor systems, structures and components to address climate risks, the GAO noted “the NRC has not conducted an assessment to demonstrate that this is the case. Assessing its processes to determine whether they adequately address the potential for increased risks from climate change would help ensure NRC fully considers risks to existing and proposed plants. Specifically, identifying any gaps in its processes and developing a plan to address them, including by using climate projections data, would help ensure that NRC adopts a more comprehensive approach for assessing risks and is better able to fulfill its mission to protect public health and safety.”

However, not surprisingly, the NRC’s day-to-day approach to relicensing existing reactors and new licensing of proposed reactors is running contrary the GAO recommendations. The NRC’s January 2024 North Anna nuclear power station Units 1 and 2 draft site-specific environmental impact statement being reviewed for a second 20-year operating license extension out to 2058 and 2060 is a good example. Rather than “look for gaps” in potential climate change impact analysis on safe reactor operations and “develop a plan to

address them," the NRCs' environmental impact statement asserts, "The effects of climate change on North Anna (nuclear power station) structures, systems, and component are outside the scope of the NRC staff's SLR (Subsequent License Renewal) environmental review." [Emphasis added]

The conclusion is that current bipartisan congressional support for the US nuclear industry and pressure on the NRC emphasizes "keep costs down," "reduce regulatory burden" and prioritize "profit margins over safety margins."

Bipartisan support for the export of US advanced reactors threatens nuclear weapons proliferation

Democrat and Republican bipartisan support for new reactor development for both domestic use and export is undermining international nuclear nonproliferation goals with the intended export of "dual purpose" nuclear power technology capable of providing both electric power generation and nuclear weapon materials development.

Nonproliferation groups have long recognized and warned of the increased proliferation risk associated with the spread of nuclear power generation and the expansion of nuclear weapons development. In a **November 29, 2021** letter to the Biden Administration's Secretary of Energy Jennifer Grandholm, former Democrat Governor of the State of Michigan, the Nonproliferation Policy Education Center (NPEC) warned that among the Energy Department's "advanced reactors" supported for commercialization and export are sodium-cooled fast reactors that can "provide easy access around the world to nuclear weapons-grade plutonium." The Grandholm letter's authors, Henry Sokolski and Victor Gilinsky, point out that the natural nuclear fuel for these new "advanced" fast reactors designs or "breeder reactors", which have around since the 1940s, is plutonium. One of those new designs is Bill Gates' TerraPower Natrium 300-megawatt electric liquid metal sodium cooled fast reactor. While TerraPower's executives insist that the Natrium fast reactor is designed to use High Assay Low Enriched Uranium (HALEU) enriched to below 20% fissionable uranium-235, Sokolski and Glinsky point out to Secretary Grandholm , "…fast reactors are very flexible regarding fuel use, and its customers, especially its foreign customers, will view the reactor as a potential 'breeder' reactor, indeed it is the main attraction of such machines, and we expect the exporters will accommodate the customers." Sokolski and Gilinsky further warn that once the design is transferred, the fuel choice can revert back to "super grade" nuclear weapons development.

In the Middle East, TerraPower has **moved ahead** with a memorandum of understanding with the United Arab Emirates civil nuclear power program to explore "the commercialization and global deployment of the Natrium technology" with the Natrium liquid sodium cooled fast reactor.

Saudi Arabia demand is pursuing the development of a civil nuclear energy deal with United States companies is reliant upon the Kingdom of Saudi Arabia having its own uranium enrichment program. As a signatory to the international Nuclear Nonproliferation Treaty (NPT), once in possession of enrichment technology, Saudi Arabia has on one hand vowed not to enrich uranium to nuclear weapons grade. On the other, Saudi Arabian Crown Prince Mohammed bin Salman has vowed that should Iran be discovered to be developing nuclear weapons, the Saudis will drop their agreement to adhere to the NPT and obtain their own nuclear weapons with their own enrichment technology. With that out on the table, according to experts, Reuters reported on April 18, 2024 that Iran's "**breakout time**" needed to produce enough weapons-grade uranium for its first nuclear bombs "is close to zero, likely a matter of weeks or days" and within as little as seven months could manufacture its first nuclear weapon.

In September 2023, a bipartisan group of more than two dozen nuclear and **Middle East experts wrote to President Biden** warning, "The experts stressed that uranium enrichment on Saudi soil could bring Saudi Arabia to the brink of acquiring nuclear arms — a reality U.S. policy should keep from happening." Despite concerns, the Biden Administration announced talks with Saudi Arabia on **May 18, 2024**, for a US/Saudi Arabia Nuclear Power Deal to launch a "civil" nuclear cooperation agreement that will load up the Middle East with more building blocks for nuclear weapons.

The hype surrounding SMRs is way overblown

By Jan van Evert, editor Nuclear Monitor

Small Modular Reactors or SMRs are increasingly popular for a couple of years. Some politicians see them as an alternative for the current reactors that can be build quicker, simpler, and cheaper. This month, the Polish ministry of Climate and Environment approved a plan for a Rolls-Royce SMR of 470 MW.

SMRs are nuclear reactors that are 'small' (defined as 300 megawatts of electrical power or less), can be largely assembled in a centralized facility, and would be installed in a modular fashion at power generation sites. The only SMR currently under construction is in China. In the United States, only one company has applied to the Nuclear Regulatory Commission (NRC) for a permit to build a reactor of 345 megawatts. This example and the one in Poland show that in practice SMRs are not always small. The reactor in the Polish plan is of the same size as for instance the Borssele nuclear power plant in The Netherlands.

There are however, several problems surrounding SMRs that make them a lot less attractive than they seem. First of all, small reactors are less economical than large ones. In other words, they produce more expensive electricity than larger nuclear power plants. SMR developers try to reduce capital cost by reducing or eliminating many of the safety features required for operating reactors. But these changes so far haven't had much of an impact on the total cost. On top of that, SMRs still have a long way to go to compete with wind and solar power.

Secondly, Small Modular Reactors can't solve the radioactive waste problem. The industry makes highly misleading claims that certain SMRs will reduce the problem of radioactive waste management by generating less waste, or even by "recycling" their own wastes.

In reality, small reactors will produce just as much nuclear waste as large reactors per unit of heat generated.

Thirdly, SMRs do not use fuel more efficiently than large reactors. The amount of uranium fuel that must undergo nuclear fission to produce a certain amount of heat, is the same whether a reactor is large or small. Although reactors that use coolants other than water operate at higher temperatures, which can increase the efficiency of energy conversion, this is not a big enough effect to outweigh other factors that decrease fuel efficiency.

Finally, any nuclear reactor needs several permits such as a construction permit, an environmental license etc. This administrative process usually takes several years and constitutes a large part of the total time needed to build a nuclear power plant. Building smaller units won't gain any time.

Read the full article here.

United States ban import of uranium from Russia

By Jan van Evert, editor Nuclear Monitor

On the 13th of May President Biden signed the Prohibiting Russian Uranium Imports Act - two weeks after the bill was passed unanimously by the US Senate. The law bans the import of low-enriched uranium (LEU) that is produced in Russia or by a Russian entity and is another sanction against Russia because of the war against Ukraine. LEU contains less than five percent of Uranium-235 and is used in nuclear reactors.

The prohibition would come into effect 90 days after the date of the enactment of the bill, and would terminate in 2040. The Department of Energy may however waive the ban if it determines that "no alternative viable source of low-enriched uranium is available to sustain the continued operation of a nuclear reactor or a US nuclear energy company" or that importation of uranium is in the national interest. The amount of uranium that could be imported under such a waiver is limited, and must terminate by the 1st of January 2028.

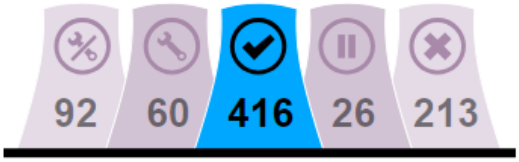
Almost all the uranium used in US commercial reactors is imported. After reaching a peak in 1980, domestic mining now accounts for about only five percent of the fuel used in US reactors. At least twelve percent of US uranium imports comes from Russia. Another 48 percent is imported from Russian satellites Kazakhstan and Uzbekistan.

Why did it take two years for this act to come into effect? The answer is simple: the US is not planning to scale down its nuclear energy production. On the contrary, the new law is preceded by the recently passed Nuclear Fuel Security Act. This act aims to establish and expand critical US nuclear fuel programmes to boost domestic uranium mining, production, conversion and enrichment capacity. The United states has only one uranium conversion plant that converts uranium oxide into uranium hexafluoride for enrichment.

The bill's enactment "releases $2.72 billion in appropriated funds to the Department of Energy to invest in domestic uranium enrichment" said the US State Department.

However, the effect of the ban on the Russian economy remains to be seen. Even though Kazakhstan is the world's largest producer of uranium, much of its milled uranium travels through Russian conversion plants before it is exported.

NUCLEAR NEWS



Number of Reactors
(as of May 2024)

Compared to the last edition of the Nuclear Monitor (915); nothing changed.

How Conservative Media Fuels Australia's Nuclear Power Debate

Debates over nuclear power in Australia continue to be stoked not by industry or voters, but by the media.
https://thediplomat.com/2024/04/how-conservative-media-fuels-australias-nuclear-power-debate/

European Investment Bank: Risk of nuclear energy too great

The financing of nuclear power plants is current in Brussels. In recent months, industry and several governments have pushed for the European Investment Bank (EIB) to support nuclear energy. A leaked EIB roadmap for the period 2023-2027 again states that the bank is 'technology neutral' and therefore does not necessarily rule out financing nuclear energy. You might think "Good for nuclear energy", because financing is a tricky issue for that. But new nuclear power plants, as far as the EIB is concerned, do have a major problem here: profitability. Because although the EIB appears to be government money, EIB loans must provide sufficient returns. Thanks to its prestigious 'AAA' rating, the EIB can raise money itself at low interest rates, but in order to maintain that rating, the bank does not grant loans if there is a significant chance of no or insufficient return. So, exit nuclear energy.
Source: https://www.laka.org/
Original article: https://www.euractiv.com/section/energy-environment/news/eib-financing-for-nuclear-reactor-construction-remains-off-the-agenda/

"Terrible news"

In response to the ban on the import of uranium from Russia laid down in the Prohibiting Russian Uranium Imports Act signed by President Biden on May 13, 2024, Linda Gunter Pentz wrote an article; "Terrible News".
In this article she describes that; Russian uranium ban reopens the threat of an escalation of uranium mining in the US.
Read the full article at https://beyondnuclearinternational.org/2024/05/19/terrible-news/

New independent research: nuclear six times the cost of renewables

An independent report commissioned by the Clean Energy Council and conducted by Egis, a leading global consulting, construction and engineering firm, has confirmed that nuclear is the most expensive form of new energy in Australia.
https://www.cleanenergycouncil.org.au/news/new-independent-research-nuclear-six-times-the-cost-of-renewables

Kilifi residents clash with police over nuclear plant construction

A section of residents of Matsangoni, Kilifi County, Kenya clashed with police as they opposed plans to construct a nuclear plant in the area.
https://www.the-star.co.ke/news/realtime/2024-05-23-kilifi-residents-clash-with-police-over-nuclear-plant-construction/