

Statement of

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**“H.R. 4979, the Advanced Nuclear Technology Development Act of 2016 and H.R. _____,
Nuclear Utilization of Keynote Energy Policies Act.”**

Before the

**Congress of the United States
House of Representatives
Committee on Energy and Commerce
Subcommittee on Energy and Power
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Introduction

Mr. Chairman and members of the Subcommittee, thank you for providing the Natural Resources Defense Council, Inc. (NRDC) this opportunity to present our views on H.R. 4979, the Advanced Nuclear Technology Development Act of 2016 and H.R.____, Nuclear Utilization of Keynote Energy Policies Act.

NRDC is a national, non-profit organization of scientists, lawyers, and environmental specialists, dedicated to protecting public health and the environment. Founded in 1970, NRDC serves more than one million members, supporters and environmental activists with offices in New York, Washington, Los Angeles, San Francisco, Chicago, Bozeman, and Beijing. We have worked on nuclear safety and regulation issues since our founding, and we will continue to do so.

Summary of Testimony

As an initial matter, we address H.R. 4979, the Advanced Nuclear Technology Development Act of 2016 (“H.R. 4979”), and follow with discussion of its counterpart in this hearing, H.R.____, Nuclear Utilization of Keynote Energy Policies Act (“NUKEPA Discussion Draft”).

H.R. 4979

The pursuit of concepts for advanced nuclear reactors that burn a significant fraction of their radioactive waste, are highly difficult to use to make nuclear weapons, operate at higher temperatures for greater thermal efficiency, and are inherently far safer than today’s technologies, have been science and engineering goals for decades. But while there are several advanced nuclear technologies under development (many of them based on ideas that span the atomic age), none have demonstrated some or all of these traits in a working prototype. Moreover the practical nuclear engineering and economic hurdles inherent to these technologies are such that NRDC questions whether advanced nuclear can ever be transformative – or even shoulder a small fraction of our fast evolving energy markets as we address the pressing needs of climate change. Furthermore, as an environmental advocacy organization, NRDC has concerns that advanced nuclear may serve as a distraction to the rapid, continued scale-up of existing,

economically viable and proven solutions to the threat of climate change from wind, solar and energy efficiency technologies.

H.R. 4979 requires that the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) work together to produce a plan “for developing an efficient, risk-informed, technology-neutral framework for advanced reactor licensing,” including public input, within 270 days after the date of enactment. Such a charge to DOE and NRC has merit in that it asks two of the relevant federal agencies to work together and report to the legislative branch on a potentially necessary set of future regulations. However, NRDC cautions that 270 days is far too short a time period for these two federal agencies to both gather and analyze the necessary technical and regulatory information, and provide it for public comment, with respect to such a complicated a set of problems as licensing advanced reactors will pose. Advanced reactors concepts by definition differ substantially in design and operation, including nuclear fuel cycle aspects, from the current licensed, operating fleet of light water reactors. The 270 day limit set in this draft legislation artificially limits NRC’s and DOE’s opportunity to get full and thorough feedback from States and the public, which NRDC views as crucial in this process.

Further, the bill casts its net of federal agencies too narrowly, as both the Environmental Protection Agency (EPA) and the President’s Council on Environmental Quality (CEQ) should be part of any such enterprise. EPA has standard setting authority for certain radioactive release limits, and CEQ’s authority pertains to oversight of National Environmental Policy Act (NEPA) obligations that will, for certain, loom large in any new licensing proceeding for advanced reactors. All of which takes us to our last caution, the timing of matters. In this matter the involved federal agencies must take their time in assessing the certain wide range of opinion on the appropriate regulatory scheme necessary to ensure the safety of any new potential license for an “advanced” reactor. This cannot be done adequately in the proposed timeframe.

A number of advanced reactor concepts involve reprocessing of spent nuclear fuel and direct use of plutonium in the civilian energy sector. Such advanced nuclear technologies present a heightened risk of proliferation and the threat of terrorist diversion of fissile material to construct

an improvised nuclear device. NRDC notes an inconsistency in the language of HR4979 regarding nuclear weapons proliferation. In Sec. 2. FINDINGS., paragraph (4), the legislation states: “The United States commercial nuclear industry must continue to lead the international civilian nuclear marketplace, because it is one of our most powerful national security tools, guaranteeing the safe, secure and *exclusively peaceful* use of nuclear energy (emphasis added).” In Sec. 3. DEFINITIONS., paragraph (1), states: “The term “advanced reactor” means a nuclear fission reactor with significant design improvements over the most recent generation of nuclear reactors. Such improvements may include inherent safety features, lower waste yields, greater fuel utilization, superior reliability, *resistance to proliferation*, and increased thermal efficiency (emphasis added).” The threat of nuclear proliferation from civilian nuclear energy technologies can be managed but not eliminated. History holds valuable lessons where commercial nuclear energy exports have aided the spread of nuclear weapons to new countries. Whether or not civilian nuclear energy technology is used for exclusively peaceful purposes is not just a technological issue but also one of diplomacy, law and international relations.

NUKEPA Discussion Draft

The NUKEPA Discussion Draft is problematic in several areas. Our testimony addresses our concerns section by section below.

Section 2

Section 2, Fair and Equitable Funding, represents a shift of substantial cost burdens to the taxpayers. The section amends section 6101(c)(2) of the Omnibus Budget Reconciliation Act of 1990 (42 U.S.C. 2214(c)(2)) to revise the amount of annual charges collected from all licensees and certificate holders to equal 100 percent of the budget authority of the NRC for the fiscal year, less existing funding exemptions, infrastructure, and corporate support costs. The draft legislation is not clear as to the precise dollar amount that would no longer be recovered from industry but now be charged to taxpayers, but the amount could plausibly be substantial. For example, in the recent House Report of the Energy and Water Development Appropriations Bill, the appropriators recommended a further to from the FY 17 request of \$319,100,000 to \$305,456,000. *See*, Energy And Water Development Appropriations Bill for FY 17 Committee

Report, 114–532, (April 26, 2016), 114th Congress, 2d Session, House Of Representatives, at 160.

The Report language was explicit on this point: “The recommendation establishes Corporate Support as a new control point. The funds provided for Corporate Support have been reduced by \$3,644,000 as a result of the savings identified in the rebaselining process and by \$10,000,000 to further accelerate the right-sizing of Corporate Support activities. While the Committee notes that the Commission has adopted many of the recommendations proposed by the independent review of corporate support requirements, more needs to be done to reduce corporate support costs.” *Id.* Thus, we note that this legislative language is being offered at a time when NRC is under significant pressure to reduce its budget expenditures, and such a provision, if it were to become law, would unwisely shift costs from the profiting industry to the taxpayers. We recommend rejecting this proposed section.

Section 3

Section 3 requires the Comptroller General, in consultation with DOE, to author a study for congressional review on the feasibility and implications of repealing restrictions under sections 103(d) and 104(d) of the Atomic Energy Act (AEA) on licensing of certain nuclear facility operations by foreign persons. We commend the Committee’s caution in this instance in asking for a study prior to attempting to legislate in this area, especially in a bill related to advanced reactors and the attendant security and proliferation concerns inherent to associated nuclear fuel cycles. Pursuant to that, we urge the section to require an opportunity for public input or comment on the draft or preliminary findings of such a study, as a wide-ranging set of perspectives on the matter can inform Congress whether and how it wishes to take the matter up in the future, if at all.

Section 4

Section 4 amends the AEA to eliminate the requirement to hold a public hearing for new plant construction applications while purportedly maintaining measures for affected parties to request the Commission hold a hearing. NRDC opposes this provision and this section should be

discarded entirely. As our colleague Dr. Edward Lyman of the Union of Concerned Scientists noted in a Senate hearing last week on a similar provision in a Senate bill, “[m]andatory hearings provide an important independent review of uncontested issues addressed in new reactor license approvals and allow the Atomic Safety and Licensing Board (or the NRC commissioners themselves) to examine the adequacy of the NRC staff’s review of license applications. Diane Curran, a lawyer, has identified numerous examples from past mandatory hearings in which serious deficiencies in the NRC staff’s review were uncovered. These issues would not have come to light in the absence of mandatory hearings. This process helps to provide public confidence that all technical issues have been thoroughly and adequately considered by the NRC.” Testimony of Edwin Lyman, PhD Senior Scientist, Union of Concerned Scientists On “Enabling Advanced Reactors and a Legislative Hearing on S.2795, The Nuclear Energy Innovation and Modernization Act.” Before the Subcommittee on Clean Air and Nuclear Safety Committee on Environment and Public Works U.S. Senate April 21, 2016, at 12, *see*, http://www.epw.senate.gov/public/_cache/files/49c19c65-0886-46fc-afc7-b944ca7e2e7c/lyman-testimony.pdf.

Section 5

NRDC objects to this suggested provision. Section 5 weakens the statutory requirements in the AEA to allow for informal adjudicatory procedures established under the Administrative Procedures Act to meet requirements for hearings and judicial review. Unfortunately, this is simply a codification of agency drift to an informal, less rigorous hearing procedures process that has already been long underway.

Essentially, the public role of the AEA hearing provisions was established so that members of the public, including representatives of state, local, and tribal governments, can bring their concerns regarding compliance with the NRC’s statutory mandate and regulatory requirements into the Commission’s licensing and rulemaking processes, where these concerns could theoretically be fairly adjudicated. Along with this, unfortunately, there developed a firm (and unfounded) belief of nuclear power proponents that public involvement in the original nuclear

power licensing process created under the AEA significantly hampered the industry and at least partially caused the subsidence of the first nuclear build-out.¹ So in starting in 1989 and for several years thereafter, the nuclear industry and the NRC worked together to reshape the licensing and public participation regulations more to their liking, setting up what seemed to be a greatly streamlined path to reactor deployment.²

In our judgment this hearing process, as it currently exists, is a stacked deck for any public intervenor or State seeking to wade into what is termed a “strict by design” process. NRDC detailed these difficulties to the Commission in 2013.³ And just so the Committee is clear on what the already burdensome hearing process requires for a State or the public, following the Notice of Opportunity for hearing in the Federal Register, a prospective petitioner who believes [s]he may have an affected interest in the proceeding has *only 60* days in which to: (1) study the voluminous license application and draft environmental report; (2) investigate any safety and/or environmental concerns they have identified in the report; (3) document his/her standing to pursue these concerns; (4) draft admissible safety and/or environmental contentions; (5) seek out technical declarations from experts to support these contentions, and (6) hire expert legal counsel to frame “with specificity” the contentions and their legal bases in ways that satisfy all the “strict-by design” pleading requirements of 10 CFR §2.309 (f).

NRDC advises that, rather than ensuring the hearing process continues to become yet more expedient for industry and more of a restricted venue for States and the public, Congress should be directing NRC to submit a substantially redesigned adjudicatory hearing process that

¹ See, Anthony Z. Roisman et al., *Regulating Nuclear Power in the New Millennium (The Role of the Public)*, 26 PACE ENVTL. L. REV. 317, 318–21 (2009), (explaining the constructive historical role played by public interveners in the nuclear licensing process).

² For a perspective of how this licensing reform was viewed in 2007, see Larry Parker & Mark Holt, Congressional Research Service, Nuclear Power: *Outlook For New U.S. Reactors*, at 3, 6 (2007), available at <https://fas.org/sgp/crs/misc/RL33442.pdf>. The NRC regulations governing reactor licensing can be found at 10 C.F.R. §§ 52.0–.303 (2016), available at [http://www.nrc.gov/reading-rm/doc-collections/cfr/part052/.](http://www.nrc.gov/reading-rm/doc-collections/cfr/part052/)

³ See, Christopher Paine, Nuclear Program Director, Natural Resources Defense Council; *How NRC Rules Suppress Meaningful Public Participation In NRC Regulatory Decision-making*; Before the Nuclear Regulatory Commission Rockville, Maryland, January 31, 2013; found online at https://www.nrdc.org/sites/default/files/nuc_13020601a.pdf.

simplifies the hearing requirements to for substantive, technical issues of safety or environmental concern come to fore rather than entertaining joint industry-Staff efforts to flyspeck, curtail or have dismissed literally every contention that has ever been filed before the Atomic Safety & Licensing Board. Such would new hearing process would (1) allow for more than one opportunity for intervention (for example, with release of the Draft Environmental Impact Statement along with the submission of the license application) and (2) a less administratively burdensome set of contention filing requirements (akin to Federal Civil Procedure “notice pleading”) to resolve onerous issues with demonstrated standing.

Section 6

NRDC objects to this provision. Section 6 amends the AEA to provide hearings on inspections, test, analyses, and acceptance criteria as accepted unless substantial evidence that one or more of the criteria have not been met and the operational consequences will not adequately provide for the protection of public health and safety. Section 6(b) further reduces the number of days for a request of a hearing for the Commission and increases the burden on any petitioner that might seek to intervene on safety by striking the current “prima facie” showing in favor “substantial evidence” and, most troublingly, inserting a clause that bars any intervenor claims over “incomplete information.”

As a first matter, this is a significant weakening of what was already a problematic reactor licensing process set up years ago. The former two-step licensing requirements—(1) approving construction of a specific safe reactor design at an environmentally suitable site, and (2) attesting to the readiness of the reactor as built to operate safely—were merged into a single combined Construction and Operating License (“COL”).⁴ The clear intent of these regulatory revisions, even according to the NRC, was to reduce the applicant’s risk of exposure to intervenor contentions that could lead to costly delays in starting up or completing a plant. *Id.* at 5.⁵ Both

⁴ U.S. Nuclear Regulatory Comm’n, Nuclear Plant Licensing Process 1, 3 (2005), available at <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/licensing-process-fs.pdf>, (hereinafter “Nuclear Fact Sheet”)

⁵ An application for a combined license under 10 CFR Part 52 (2016) can incorporate by reference a design certification and/or an early site permit. This approach allows for issues resolved during the design certification

NRC staff and the licensee currently must agree in advance on the specific acceptance criteria for critical items that will later be verified by NRC inspectors as having been completed correctly as construction proceeds. Thus, opportunities for the public to raise concerns at this stage are already limited. According to the NRC, at unspecified periodic intervals during construction, it will publish “notices of these completions in the Federal Register. Then, not less than 180 days before the date scheduled for initial loading of fuel, the NRC will publish a notice of intended operation of the facility in the Federal Register. There is an opportunity for a hearing at this time, but the NRC will consider petitions for a hearing only if the petitioner demonstrates that the licensee has not met or will not meet the acceptance criteria.”⁶ But now, the NUKEPA Discussion Draft that is a subject of today’s hearing proposes taking this already limited, constrained process and making it even harder for a State or the public to provide what has been demonstrated to be an important role to improve nuclear safety.

The final clause in Section 6, barring “incomplete information” as a basis for granting a hearing is especially objectionable. The perception that hearings cause delays due to the number of hearing days or unfounded contentions is without basis.⁷ In fact, nuclear licensing applications and documents, while typically lengthy, in fact have been shown to be deficient in detail and noticeably lacking in the specifics on issues of greatest concern to the intervening public or state. This was detailed in a 2009 Law Review article by Anthony Roisman that describes the burdens *on NRC Staff and the public* incurred in this process:

The NRC Staff is also aware that the applications as filed and accepted for docketing are seriously deficient. It devotes months of its efforts to submitting requests for additional information (RAIs) to the applicant to complete the required details of the application. This iterative process is not, in and of itself, inappropriate and apparently reflects a serious commitment by the NRC Staff to

rulemaking and the early site permit hearing processes to be precluded from reconsideration later at the combined license stage.

⁶ Nuclear Fact Sheet at 1, 3.

⁷ See Roisman et al., *Regulating Nuclear Power* at 322-328 (2009), full cite at note 1.

improve the quality of the information it must review to make safety determinations. However, docketing the application long before the application is complete, when it often contains substantial areas in which the applicant merely promises to address an issue at a later date or leaves out most of the significant details of its proposed actions, creates the false impression that the time between when the application is “docketed” and when a final decision is rendered is attributable to the hearing process and public participation. This “delay” is then used to justify even further restrictions on the public's right to participate.

Id. at 323 (citations omitted).

Section 7

NRDC objects to this provision. As with the problems identified in Section 6, it is our view that the problems and controversies created by Section 7 will prove extensive. Section 7 amends the AEA to establish draconian deadlines for the NRC to complete major license application milestones, including filing a draft environmental impact statement within one year, the technical review process and safety evaluation report within two years, and public licensing hearings within 30 months of the filing of the application. The section further weakens NEPA to allow for limit environmental impact statements to purely “supplemental” status (on the theory that it will be tiered to an “early site permit” – but that includes each and every reactor relicensing or licensing application) and based solely on new and significant information that would “materially change the prior findings or conclusions.” The section finally requires the Commission initiate a rulemaking in one year to amend the regulations and provides a (theoretical) severance clause that nothing in the subsection exempts the Commission from compliance with NEPA.

Make no mistake, this section would do grave harm to NEPA and likely bar any meaningful NEPA review by Staff and challenge by the public or an affected State. The current NEPA process as it is practiced by the NRC is already problematic and heavily slanted against the

public and meaningful oversight. Adoption of this suggested provision would turn it into a mere fig leaf, if even that.

To put it into context for the Committee, the idea behind NEPA is that a federal agency must produce environmental impact statements on a timetable that allows the environmental considerations to be explored and commented upon by the public *and then considered* on a schedule that meaningfully informs agency decision-making with respect to the *proposed* action. CEQ rules prohibit *ex post facto* use of environmental impact statements to justify decisions already taken. So, this requires the agency to determine—early in the agency’s decision process and with public input—the appropriate scope of its required environmental analysis. After which, the agency prepares a draft statement for public comment outlining various reasonable alternatives for implementing its proposed action that would either prevent, reduce, or mitigate harmful environmental impacts, and identifying the agency’s preferred alternative, if it has one. Then typically at least 30 days prior to any formal “Record of Decision” to move forward with implementing the proposed action, the Agency must issue a final environmental impact statement that responds to the public comments received, and identifies any changes to the draft analysis or preferred alternative.

In NRDC’s judgment, NEPA doesn’t work as intended at the NRC and this draft provision would make matters – already untenable – worse. In contrast to other federal agencies – which guarantees to those who can show they might be harmed by an agency action predicated on a flawed NEPA analysis, the right to challenge it in federal district court – the NRC hurdles are substantially higher. NRDC’s Mr. Paine’s detailed to the Commission (cited at n. 3) how the Commission’s rules routinely deny this right of judicial review to any state or member of the public who has not previously gained party status at the outset of the licensing proceeding years before NRC has even issued the first draft NEPA document (and to gain party status the State or public must file at least one admissible contention based on a “genuine dispute” with the applicant’s environmental report on a “material issue of law or fact” in the truncated process described *infra* at 6).

And now, as this section suggests, to accomplish the entirety of a new reactor’s NEPA compliance in one bare year and to limit the public only to issues not raised (perhaps decades)

before in the Early Site Permitting process is at best far-fetched, and would assuredly make the process nearly meaningless. Rather, Congress should be looking at strengthening hearing and NEPA requirements so that public and State trust in the industry and NRC can be restored. As a 30 year serving ASLB Judge wrote just a few years ago,

The Petitioners were instrumental in focusing the Board's attention on the troubling matters discussed above. That they did so is a testament to the contribution that they, and others like them, can make to a proceeding. Moreover, in doing so they often labor under a number of disadvantages.

In the Matter of Shaw Areva Mox Services (Mixed Oxide Fuel Fabrication Facility), LB-08-11, Docket No. 70-3098-MLA, at 49 (June 27, 2008) (Farrar, J., concurring).

Section 8

ection 8 of the NUKEPA Discussion Draft is concerned with the matter of nuclear reactor decommissioning. We note that attention to reactor decommissioning by the NRC came late, after extensive nuclear power plant construction and operation in the United States. Currently the NRC has stated an objective of 2019 for completion of a rulemaking on reactor decommissioning, having issued an Advance Notice Of Proposed Rulemaking (ANPR), "Regulatory Improvements for Decommissioning Power Reactors" on November 19, 2015, and concluded this ANPR public comment period on March 18, 2016. NRC was candid in the ANPR that the agency "has never promulgated comprehensive regulations governing the decommissioning of nuclear power reactors." Decommissioning issues will likely grow in importance given recent, unplanned reactor retirements and the growing challenges for the U.S. nuclear industry related to aging, reliability and safety, and economic competitiveness. The NUKEPA Discussion Draft requires the NRC to initiate the rulemaking proceeding within 90 days after then enactment, to be completed not later than 48 months after that date. NRDC cautions that the initiation of the rulemaking would allow the NRC roughly four months with which to consider public comment on the ANPR, which in our view is too short – at least six months should be allotted for Staff to analyze and respond to the information received during the

public comment period from the ANPR. Indeed, we urge the Committee to solicit NRC's input on how much time is required. However, the four year requirement on a final rulemaking is consistent with the timetable proposed by the NRC.

NRDC recommends striking the text in (b) FACTORS entirely from the draft legislation, as this language can prejudice and distort the final rulemaking. During decommissioning a large radiological source term is still present. Spent fuel pool fires can occur due to a loss of pool water inventory caused by either accidents or terrorist attacks. The absolute probability of such an event cannot be known with certainty. The risk of zirconium fire from spent nuclear fuel stored onsite during decommissioning is a radiological risk that could have large impacts in terms of off-site radiological contamination. In general the risk of a radiological release from a decommissioning reactor is not just a factor of whether the reactor is generating electricity or not, but also impacted by facility maintenance, accident mitigation measures and security. In NRDC's comments on the NRC ANPR, we cautioned against any erosion of emergency planning, physical security requirements, fitness for duty requirements, or training requirements until the physical protection of dry cask storage creates a more robust barrier to release of fission products from spent nuclear fuel.

Thank you again for this opportunity and I am happy to answer any questions.