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Comments on NY Nuclear Blueprint

Holtec International appreciates the opportunity to provide comments on the New York State Draft Blueprint for Consideration of Advanced Nuclear Technologies. As a global leader in the development, design, and deployment of nuclear technologies, including advanced Small Modular Reactors (SMRs), Holtec is uniquely positioned to contribute to the State's energy future. Our comments focus on the key areas outlined in the blueprint, offering insights on how New York can effectively incorporate advanced nuclear technologies into its energy strategy.

In general, we would strongly recommend that the State should prioritize a robust public education campaign to demystify nuclear energy, emphasizing its safety, reliability, and critical role in achieving net-zero carbon goals. Misinformation and public apprehension about nuclear power can hinder deployment. Holtec can offer expertise to support these educational efforts, ensuring communities have access to factual information about advanced nuclear technologies.

Technological Readiness:

New York State should leverage well-established and trusted third-party resources, such as the U.S. Department of Energy (DOE) Office of Nuclear Energy and the Nuclear Energy Institute (NEI), for objective and transparent information on the technological readiness of advanced nuclear reactors. These entities provide comprehensive data that can support the State in making informed decisions about the role of nuclear power in its energy portfolio.

In considering new reactor technologies, it is essential for New York to focus on designs that are closest to commercial deployment. Pressurized Water Reactors (PWR), such as the AP-1000 recently deployed in Georgia, and Small Modular Reactors (SMRs) like Holtec's SMR-300, represent viable, near-term options for New York. These technologies are capable of being deployed within this decade, offering a pathway to reliable, carbon-free power generation.

Licensing, Safety, and Siting:

The State should actively engage with the U.S. Nuclear Regulatory Commission (NRC), which is recognized globally as an independent and transparent regulator. The NRC's licensing process is built on a foundation of open public participation, ensuring that safety is prioritized based on facts rather than fear. Furthermore, U.S. nuclear safety standards are the benchmark for the global industry, and New York can confidently adopt and build upon these practices. The Institute of Nuclear Power Operations (INPO) plays a critical role in sharing best practices across the industry, and it is important to highlight that nuclear power maintains an exemplary safety record both in energy generation and industrial operations.

In terms of physical and cybersecurity, advanced nuclear facilities do not pose significant risks. The NRC's stringent cyber safety regulations ensure that nuclear power plants are well-protected against external threats, and physical security is rigorously enforced. The State should not perceive these as barriers to nuclear deployment but rather as proof of the sector's high level of preparedness.

When considering siting for advanced nuclear plants, New York should prioritize locations where existing transmission infrastructure and historical energy generation assets are already in place. This approach will maximize the efficient use of current resources while minimizing additional construction. Furthermore, the State can look to models like Wyoming, where an educational outreach and competitive bidding process has been used to engage stakeholders in siting discussions.

Environmental and Climate Justice:

While much of the nuclear fuel cycle occurs outside New York, the State can still play an important role in promoting environmental and climate justice. Exploring opportunities for consolidated interim storage and fuel reprocessing within New York could help position the State as a leader in the nuclear fuel economy.

Advanced nuclear technologies offer an opportunity to improve air quality, particularly in communities that have been disproportionately impacted by fossil fuel emissions. By educating local communities and engaging in meaningful dialogue, New York can ensure that nuclear energy projects are developed in a way that meets the needs of historically underserved populations. Additionally, locating non-carbon-emitting nuclear facilities in areas previously affected by fossil fuel plants can directly improve local environmental conditions.

In terms of equitable access to job and training opportunities, New York should partner with local universities and technical colleges to build a pipeline of skilled workers for the nuclear industry. To this end, the New York State Energy Research and Development Authority (NYSERDA) can be utilized by expanding existing workforce development programs, including the creation of specialty apprenticeship programs, certification paths, and job placement services. These initiatives would help ensure that New York's communities, especially those historically marginalized, benefit from the high-paying jobs created by the nuclear sector.

Costs, Supply Chain Development, and Financing:

The cost of deploying advanced nuclear technologies, particularly Small Modular Reactors (SMRs), is expected to decrease as designs become standardized and multiple units are built. For example, the lessons learned from the AP-1000 project in Georgia demonstrate that costs and timelines decrease as standardized designs are replicated. Furthermore, federal incentives and tax credits available through programs like the DOE Loan Program Office (LPO) and the 48C tax credit program can significantly reduce financial risks.

It is important to weigh the costs of nuclear energy not just against the direct costs of wind and solar but also considering the subsidies that wind and solar projects receive, which significantly help finance their deployment. Additionally, the health impacts of continued fossil fuel usage must be factored in. Nuclear energy's superior energy density and small physical footprint offer key advantages. For example, nuclear plants operate at efficiency levels of over 90%, compared to around 30% for wind and solar. This means that you would need to build roughly three times as much wind or solar capacity to generate the same amount of energy as a single nuclear asset. This significant difference in efficiency, coupled with the land use requirements for large-scale solar and wind installations, underscores the importance of considering nuclear energy as a reliable, space-efficient, and consistent energy source.

The State should also prioritize selecting a developer with an integrated supply chain. Holtec, for example, not only designs nuclear reactors but also manufactures many of the components in-house, ensuring greater control over costs and deployment timelines. Standardizing designs will further streamline the supply chain, making the deployment of multiple units more efficient.
There are also significant opportunities for New York to capitalize on national supply chain shortages by attracting nuclear technology manufacturing to the State. By committing to multiple-unit deployments, New York can encourage developers to establish manufacturing facilities within the State, driving economic development and creating high-quality jobs.

Waste Generation and Disposal:

It is important to recognize that over 90% of the energy in used nuclear fuel remains untapped, meaning that much of what is currently classified as waste can be reprocessed and reused. The State should focus on supporting efforts to reprocess used fuel rather than prioritizing disposal. In partnership with the DOE, New York can also play a role in the ongoing consent-based siting process for interim storage facilities, which is expected to be established in the next 10-15 years.

Holtec International strongly believes that advanced nuclear technologies, particularly SMRs, represent a crucial component of New York's clean energy future. By focusing on technologies that are closest to deployment, engaging with established regulatory frameworks, and fostering local economic development through supply chain and workforce initiatives, New York can position itself as a leader in the advanced nuclear sector. We are committed to supporting the State as it navigates these opportunities and look forward to continuing to collaborate on solutions that provide safe, reliable, and sustainable energy for New Yorkers.