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Chairman McColley, Vice Chair Schuring, Ranking Member Martin, and members of the committee:

For many researched reasons I want to see new generation nuclear reactors in my backyard.

A significant reason is that I am a 2x cancer survivor and one who has benefitted from nuclear medicine. Advancements in nuclear medicine have served my generation in a way unimagined by my grandparents. My hope for the generation in which my 10 grandchildren belong is for even greater advancements in nuclear medicine for early detection of diseases, lowered costs of life saving medical treatment, and that treatment will not involve travel away from family during illness. Currently, the world's supply of radioisotopes is under threat of shortages in the near future.

I briefly present to you my perspective in support of ANTHEM, H. B.434, that will bring to Ohio the nuclear reactors that produce the medical radioisotopes that the world needs.

Worldwide, there are 40 million nuclear medical diagnostic procedures per year; nationwide, there are 20 million...8 million of those are nuclear stress tests. According to the World Nuclear Association report on Radioisotopes in Medicine (world-nuclear.org) demand rises 5% each year. However, The US numbers have been significantly higher within the past ten years. I believe that rationing of limited radioisotopes is raising the cost and that insurance companies are putting barriers between people who want to be well and get back to their productive lives and these costly, but needed procedures.

Medical radioisotopes having a short half-life are used for the millions of:

- Nuclear Medical Diagnostic Procedures/early detection imagery,
- Targeted Alpha Therapies (TAT) for metastasized cancers
- Radiosurgeries on tumors,
- Radiopharmaceuticals (with its own demand rising 10% each year).

Radioisotopes emitting Gamma Rays and having a longer half-life are in heavy demand for use in sterilization processes of blood transfusions, heat sensitive materials, packaged materials, and half of the world's single use medical supplies.

A dozen nuclear reactors in the world supply the demand but none of them are in the United States.

A new nuclear therapy using TAT requires that a patient be near a reactor to access the effective isotope before its half-life is over. Bad news for Americans unless they can afford to travel to save themselves. Bringing isotopes to the patient does spend/waste the best effective material while it travels, goes through customs-like process, and arrives at a hospital for processing before being administered to a patient.

80% of those 40 million nuclear diagnostic and therapeutic procedures use Tc-99 (technetium). It has a 6 hour half-life. Tc-99 comes from Mo-99 (molybdenum). Mo-99 cannot be made without a reactor.

Only 6 reactors in the world produce Mo-99 (as of April 2022).
5 of these reactors are over 50 years old.

The Mo-99 market alone is worth \$5 billion per year (NECSA -Nuclear Energy Corporation of South Africa). The radioisotope market is closer to ~\$30 billion.

To pass ANTHEM, H. B 434, and to give an Ohio home to new generation nuclear reactors, will be to:

- Save lives
- Cure Cancer by providing the effective and rare isotope Ac-225 (actinium)
- Increase nuclear medical isotope production capacity for decades to come
- Secure a domestic supply chain of life saving radioisotopes
- Increase availability of radioisotopes for research
- Increase availability of radioisotopes for development of new cures
- Increase availability of radioisotopes for therapies and treatments
- Lower costs of nuclear imaging for early detection of diseases, treatments, therapies
- Provide needed proximity of reactors for those needing treatment of metastasized cancers
- Eliminate waste of valuable nuclear medical materials
- Not only give Ohio a slice of the multi-billion dollar pie, but make the pie bigger

Many thanks to the committee. Generations of Ohioans' health and prosperity are depending upon you.