

Richard K. Wallace, Ph.D.
1630 Sereno
Los Alamos, NM 87544
RWallacenm@gmail.com
505-603-5074

August 14, 2021

Ms. Angelica Gurule
Los Alamos Resiliency, Energy, and Sustainability Task Force
Los Alamos County Council
Los Alamos, NM 87544

Dear Ms. Gurule,

I would like to apply for the advertised position on the Electricity Supply and Demand Management subcommittee of the Los Alamos Energy and Sustainability Task Force. Chick Keller recommended that I consider applying for this opportunity. I have discussed the goals, procedures and activities of this subcommittee with Chick and I find this to be an extremely exciting and important activity for Los Alamos County.

I am concerned about the accelerating pace of tangible environmental impacts from global climate change, and I am well aware of the lengthy time required to find and implement effective and acceptable mitigation strategies to reduce the community's carbon footprint. I believe it is crucial for Los Alamos to aggressively continue developing creative options and strategies for decarbonizing electricity generation and adopting carbon-free electrification. Current environmental events have brought into question whether Los Alamos can continue to plan for a carbon-neutral/free energy generation by 2040, or if perhaps that goal should be moved slightly closer.

I realize that Los Alamos is a small community within a less-populated state of the Union. However, I have seen that successful developments in a small area can lead the way to much wider adoption, adaptation, and success in a larger scale. As a community known for its innovative development of scientific solutions, I feel we should set an example of how to address a carbon neutral future in an effective and practical way.

My knowledge and experience have prepared me to contribute to this effort, and I am excited for the possible opportunity to do so! My Ph.D. research was in analysis and computational modeling of nuclear energy generation systems in astrophysics. During my 31-year career at Los Alamos, and my subsequent retirement activities, I have applied that knowledge to a wide variety of topics which I believe are relevant to the goals and work scope for this subcommittee. Examples of my relevant experience include the following:

- I am on the Board of Directors, and just completed my term as Board President, of the Pajarito Environment Education Center, which runs the Los Alamos Nature Center and develops educational programs for both children and adults in environmental and science topics. Our goal is to help others understand the science and methodology for uncovering the secrets of nature and the environment.
- I am a founding member of the Jemez Mountain Night Sky Coalition and have researched community lighting to enhance safety and security, while minimizing light pollution, cost and

energy use of lighting installations. I have participated in drafting a model lighting ordinance for submission to Los Alamos County for consideration.

- Just prior to retiring from LANL, I worked for Sara Scott in the Civilian Nuclear Energy Program to analyze the safety, security, and effectiveness of various advanced energy technologies and to communicate the results of those analyses to DOE managers, international energy partners, and the public. The technology studied included modern fast reactors, such as the technology used for the NuScale Power Module included in the Carbon Free Power Project. I also testified as an expert on behalf of LANL before New Mexico legislative boards that were considering nuclear energy and long-term waste management for the state of New Mexico.
- I was both a line manager (Group Leader) and Program Manager at LANL, with responsibility for developing, fundraising, and executing both research and implementation projects. For example, my group participated in analyzing the Fukushima nuclear power plant accident, as well as recommending modified security strategies for the national energy systems of various partner countries.
- During my 3-year appointment at the International Atomic Energy Agency in Vienna, I wrote 65 papers analyzing the safety, security, and energy strategy of various member states, including economic analysis.
- I have installed a photovoltaic (PV) solar power system on my home and in the process of doing so researched various solar power technologies, implementations, grid impacts, and energy storage solutions (battery technologies).
- I have a plug-in electric vehicle (Tesla) and have direct experience with the charging infrastructure in New Mexico for operating such a vehicle, as well as Lithium-battery performance and limitations.
- My general background in physics allows me to understand the main issues associated with emerging energy storage technologies, such as gravitational storage, pumped hydro, and distributed community energy storage systems. I am also familiar with various smart grid demand and supply concepts.

In summary, I believe I could assist the subcommittee in developing options for a Los Alamos carbon-neutral future and planning a strategy to implement such a path forward. I would appreciate the opportunity to do so.

Thank you for your consideration.

Sincerely,
Dr. Richard Wallace

References:

1. Chick Keller, ESDMS member, alfonso@cybermesa.com, 505-690-3993.
2. Sara Scott, Former Program Director and supervisor, LANL, sara.scott@lanl.gov,
3. Katharine Buell, Executive Director of PEEC, director@peecnature.org, 505662-0460.