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Sent: Tuesday, December 26, 2023 5:02 PM
To: tam Tran; Susybelle L Gosslee; Susybelle L Gosslee
Subject: [External_Sender] Statement Re Comanche Peak Nuclear Reactor Docket ID: NRC-2022-0183
Attachments: Comments personal to NRC re Comanche Peak Nuclear Reactor Environmental Impact Review Docket ID NR-2022-0183 23-12-26.docx

Mr. Tran,

I submitted my statement regarding Docket ID; NRC-2022-0183 on the NRC website today around 3:15 p.m. Central Time. I am not sure that the statement went through and was accepted on the website. I am sending the statement to you directly in this email to ensure that you get my comment. Please see the attached document.

I called you on the phone number provided to reach you at 301-415-3617 to ensure that you had received the statement. However, I am have not received a call back.

Please call me at 214-732-8610 to confirm that you have gotten my written comment.

Thank you.

Susybell Gosslee

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I am Susybelle Gosslee. Thank you for accepting my comments on the Preliminary Results of the Environmental Review for the Comanche Peak Nuclear Power Plant Units 1 and 2 License Renewal.

I approach to nuclear issues is one of problem-solving. The League aims to work constructively for the maximum protection of public health and safety and the environment and citizen participation in the decision-making process at all levels of government. The League opposes increased reliance on nuclear fission but recognizes its place in the nation's energy mix.

I support:

- Energy goals and policies that acknowledge the United States as a responsible member of the world community.
- Reduction of energy growth rates.
- Use of a variety of energy sources, with emphasis on conserving energy and using energy-efficient technologies.
- The environmentally sound use of energy resources, with consideration of the entire cycle of energy production.
- Predominant reliance on renewable resources.
- Policies that limit reliance on nuclear fission.
- Action by appropriate levels of government to encourage the use of renewable resources and energy conservation through funding for research and development, financial incentives, rate-setting policies, and mandatory standards.

The re-licensing decision concerning the Comanche Nuclear Reactor should be made after, not before, a complete evaluation is made of all aspects of the reactor and its on- and off-site systems, structures, threats, and management, to avoid a crisis and protect the public's health and the environment. The Draft EIS should consider the impact of climate change in every part of the analysis.

The production of energy is in transition toward renewable sources, especially in Texas. Texas is No. 1 in the nation for wind energy capacity production, which is 45% greater than California, the second-ranked state. It is the biggest producer of wind and solar. During the last decade, wind energy production has increased 234%, solar has increased 14,000%, and is expected to double again in the next two years. In 2019, Texas generated more electricity from renewable energy sources than from coal. NBC News reports that 35% of Texas energy comes from wind and solar; yet, in 2011, the state had no solar production. With federal tax incentives, renewable energy will continue to increase productivity.

Texas has increased its renewable energy production in such a short time and will

continue to expand, making renewable energy a major source of electricity in the future with no negative impacts or dangerous waste needing expensive storage and at a lower cost per kilowatt hour. Comanche Peak's nuclear energy will not be needed wind and solar are advancing so rapidly and without nuclear or other hazardous waste.

NUCLEAR ENERGY IS NOT CLEAN ENERGY

Because nuclear reactors produce large volumes of high-level radioactive waste that lasts thousands of years. More explanation about nuclear energy not being clean energy will be explained in more detail later in this paper. Texas plans to continue to increase renewable energy production to meet the people's energy needs as the temperature continues to escalate.

Key Texas Renewable Energy Ranking data reports that Texas is Number 1: in wind energy capacity; wind energy-related manufacturing, wind industry employment, total renewable energy employment, biodiesel production, and solar potential. Texas ranks Number 6 in solar energy industry employment and Number 4 for clean energy-related patents. Small modular reactors are not a good option as a source of energy, because the costs have climbed 53%, and it has radioactive waste. The creation of high-level radioactive waste takes nuclear energy out of the category of clean energy.

Texas' renewable energy growth from 1985 to 2021 is from 100 trillion BTU to nearly 500 trillion BTU. (Source: Page 7, <https://gov.texas.gov/uploads/files/business/renewableenergy-report.pdf>), indicating that Texas has a tremendous potential to provide plenty of energy to consumers.

NUCLEAR REACTORS DO NOT PRODUCE CLEAN ENERGY.

The nuclear industry professes to be clean, but it creates high-level radioactive waste, the most dangerous material in the world, and has unsurmountable risks. "*The Dangers of Using Nuclear Power to Combat Global Climate Change*," produced by the non-profit Institute for Energy and Environmental Research (IEER), documents accident, proliferation, and contamination threats associated with reviving the nuclear industry as part of efforts to reduce greenhouse gas emissions, states IEER website's report by Dr. Brice Smith, senior scientist at IEER, who holds a Ph.D. in physics from the Massachusetts Institute of Technology.

Another researcher, Mark Z. Jacobson, Ph.D. has been a professor of Civil and Environmental Engineering at Stanford for over 29 years. His research is "*Evaluation of Nuclear Power as a Proposed Solution to Global Warming, Air Pollution, and Energy Security*." Dr. Jacobson reports that risks associated with nuclear power can be broken down into two categories: (1) risks affecting its ability to reduce global warming and air pollution, and (2) risks affecting its ability to provide energy and environmental (aside from climate and air pollution) security. Risks in the former category include delays between planning and operation, emissions contributing to global warming and outdoor air pollution, and costs. Risks in the latter category include weapons proliferation risk, reactor meltdown risk, radioactive waste risk, and mining cancer and land despoilment risks." (Retrieved 12-23-23. <https://beyondnuclear.org/wp-content/uploads/2023/12/12-5-23-Jacobson-declaration-signed-Palisades-APPX-Cvr-11-COMPILED.pdf>)

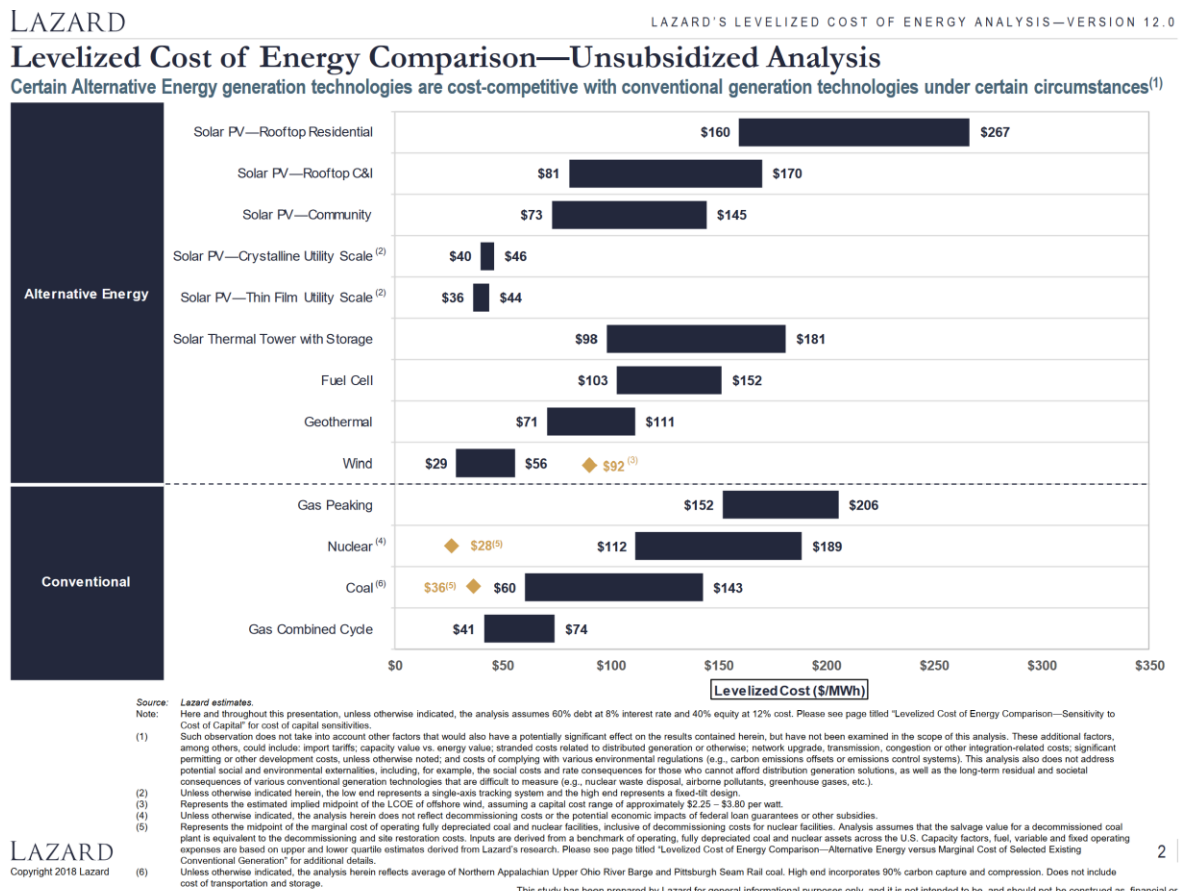
Zero- or close-to-zero-emission nuclear power plants do not exist, according to Dr. Jacobson. Existing plants emit because of the continuous mining and refining of uranium needed for the reactor to operate; however, all plants also emit 4.4 g-CO₂e/kWh from the water vapor and heat released. Solar panels and wind turbines reduce heat and water vapor fluxes into the air

by about 2.2 g- CO₂e/kWh creating a net difference from this factor alone of 6.6 g-CO₂e/kWh.

In addition, the loss of carbon can be averaged over 100 years and is caused by covering the land and clearing vegetation to build the nuclear facility, mining for uranium, drilling for fossil fuels, which creates a release of carbon, and by roads, railways and pipelines needed to transport and dispose of the radioactive waste. There is no loss of carbon when solar PV rooftop, wind-offshore, wave, or tidal power are used to create power. More information can be found in Dr. Jacobson’s research.

LEVELIZED COST OF ENERGY COMPARISON

Cost comparisons can be easily seen in the following charts created by Lazard.com.



(Source: Retrieved 12-23-23, <https://www.lazard.com/media/0hqfye2m/lazards-levelized-cost-of-energy-version-120-vfinal.pdf>)

Levelized Cost of Energy Comparison—Sensitivity to Cost of Capital

A key consideration for utility-scale generation technologies is the impact of the availability and cost of capital⁽¹⁾ on LCOE values; availability and cost of capital have a particularly significant impact on Alternative Energy generation technologies, whose costs reflect essentially the return on, and of, the capital investment required to build them

Midpoint of Unsubsidized LCOE⁽²⁾



Source: Lazard estimates.
 Note: Analysis assumes 60% debt and 40% equity.
 (1) Cost of capital as used herein indicates the cost of capital for the asset/plant and not the cost of capital of a particular investor/owner.
 (2) Reflects the average of the high and low LCOE for each respective cost of capital assumption.

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The cost of producing nuclear reactor energy is considerably higher than producing renewable energy as the chart indicates. Please see the two charts above show the levelized cost of energy comparison – unsubsidized comparison and the levelized cost of energy comparison, sensitive to the cost of capital. When the cost of creating energy from nuclear energy is so much higher, renewable energy sources are a better investment.

Nuclear power creates radioactive waste such as uranium mill tailings, spent(used) reactor fuel, and other radioactive wastes, which have been dangerous to human health for thousands of years. Renewable energy does not produce radioactive waste at a lower cost. Wind is the lowest cost and is abundant in Texas.

The production of renewable energy by increasing solar and wind at a lower cost to build and operate with no hazardous radioactive waste or other waste is the best option for Texas. The relicensing of the Comanche Peak Nuclear Reactor is not a good investment, and not good for the environment or public health and safety.

In addition, a permanent and costly storage site for high-level radioactive waste is highly unlikely at any time in the foreseeable future.

Additional Points to Consider:

NRC’s PUBLIC COMMENT AND MEETING PROCESSES

The NRC's public comment process has not been adequate to fully meet the obligation of a public process and needs to be improved. Publicity for the two public meetings and the two webinars for Comanche Peak were inadequate and did not follow the principles of good government, or show accountability or transparency. An agency in a democratic government should have full disclosure and broad publicity through the media.

When the virtual licensing meeting was held on Thursday, December 7, 2023, many people from the public and even the NRC staff could not enter online to participate. The night meeting on December 7 was so poorly publicized that only one member of the public attended and the outside lighting of the building was off so that people could have thought that there was no meeting or if they attended, the one attendee had to walk in the dark across curbs and an irregular parking lot surface to enter the building. When unsafe conditions were at the open meeting, it raised questions about the safety of the plant.

WATER AND DROUGHT RISKS

Water issues should have a thorough investigation in the environmental impact statement. Nearly 80% of Texas is experiencing some level of drought conditions ranging from "moderate" to "exceptional." Drying natural springs in Central Texas warn of water shortages ahead, reports Dylan Baddour in Inside Climate News. "Heat, drought and booming population growth have stressed the aquifers that supply drinking water to millions." The Paluxy River dried up in the center of the town of Glen Rose, the closest town to Comanche Peak, indicating a lack of water in the area. Vistra has purchased water rights at other lakes, which could be a loss of water to the public and agriculture who depend on the same water sources during drought conditions. Increases in population in the area also put a strain on water resources.

The nuclear reactor plant relies on Squaw Creek Reservoir for cooling water. The reservoir water contains radioactive tritium and other hazardous materials in it. "Cancer is the main risk from humans ingesting tritium. When tritium decays, it spits out a low-energy electron (roughly 18,000 electron volts) that escapes and slams into DNA, a ribosome, or some other biologically important molecule," David Biello explains in Scientific American. "And, unlike other radionuclides, tritium is usually part of water, so it ends up in all parts of the body and therefore can, in theory, promote any kind of cancer. But that also helps reduce the risk: any tritiated water is typically excreted in less than a month." An additional danger is that the water is periodically released into the Brazos River which contaminates further downstream.

Several sources report that the majority of Texas is currently experiencing a drought that started in October 2010. Data reported in May 2023 by the U.S. drought monitor, states that about 75% of Texas is experiencing drought conditions. Most of the state has been under the worst drought in more than a decade. Fires in the area are another concern. Chalk Mountain Fire, in Somervell County, destroyed sixteen homes, damaged five others, and burned an estimated 6,339 acres during the summer of 2022, According to Drought.gov, (<https://www.drought.gov/states/texas/county/somervell>), one hundred percent of the people in Somervell County are affected by drought. The Paluxy River which flows through Glen Rose dried up almost entirely in most parts of Dinosaur Valley State Park revealing 113-million-year-old- old dinosaur tracks in August 2022. The water situation is

expected to get worse.

Comanche Peak Reactor is dependent on water. Can we be sure that water will be in the area for use by the nuclear plant, agriculture, and the people in the area for the next 30 years and beyond when the area has been in drought for years in the past? Projections are that the area will be in drought for many years. What is the plan for the Reactor when there is little or no water in the future? (Source: U.S. Drought Monitor (<https://droughtmonitor.unl.edu/CurrentMap.aspx> <https://www.drought.gov/states/texas>))

HEALTH EMERGENCY PROCEDURES AT THE REACTOR AND WITHIN 50-MILE RADIUS The population of the surroundings of Comanche Peak continues to increase, yet hospitals and medical services are decreasing. An evaluation of the health resources in the area needs to be evaluated to ensure that adequate resources are available during an accident or a terrorist attack.

EMERGENCY PROCEDURES COORDINATION AT THE REACTOR AND WITH SURROUNDING COMMUNITY

A full investigation and thorough written report should be done on the emergency procedures at the nuclear reactor and in the surrounding area to prepare for an accident or an intentional attack by foreign or domestic terrorists. All safety equipment should be in the report with the results of tests and the history of investigations. The report should also include the technological, fire, flooding, tornado, or other extreme wind and water events, physical crashes into and on the site, and infiltration of the reactor and technology systems should occur. All safety systems and manuals should be reviewed and updated with more and improved best practices added to the safety equipment and manuals on an annual basis with costs of upgrades included.

OPERATING LICENSE FOR COMANCHE PEAK NUCLEAR REACTOR

I urge the NRC staff to think outside the box in evaluating and reporting on Comanche Peak Nuclear Reactor's EIS. The world of technology is changing rapidly, and changes in the climate in Texas are evident. Cyber and physical attacks have been made on the power grid and infrastructure by foreign and domestic extremist groups and terrorists. Some news reports have identified neo-Nazis and white supremacists as the perpetrators and say they now represent the most significant terrorist threats to the U.S. In addition, normal wear and tear of equipment and systems at the plant can cause them to be less reliable.

Concerns arise that if these trends continue, they will be as other problems unknown. What will the future be like in the next 20 years and thereafter? Technology creates a different dynamic that raises a different set of questions when re-licensing Vistra to extend the operating licenses for the Comanche Peak Nuclear Power Reactors Units 1 and 2 for an additional 20 years. There are other options to create energy that are safe without emissions or waste and have a lower cost. Renewable energy could be another option for Vistra to develop.

The reason for not permitting and re-licensing is to protect the public health, safety, security, environmental, and financial health of the area near the reactor and throughout

Texas. The regulations require that nuclear power plants be designed, constructed, and operated to keep levels of radioactive materials in effluents to unrestricted areas as low as “reasonably” achievable (ALARA); yet, Comanche Peak has not met this standard. Nuclear power plants conduct both controlled and uncontrolled releases of radiation as one example. Today, pregnant women don’t get X-rays, because they are unsafe. So why does the nuclear power plant not reveal its periodic emissions? The public does not know the danger to themselves and their children. More than 60 studies worldwide show an increased rate of leukemia among children under five years old living close to nuclear power plants. The closer the children lived to the reactor, the higher the leukemia rates. High-level radioactive waste is another tremendous hazard.

The reactors should retire as originally built, licensed, and as planned. They were built to last for about 30 years; so, retirement would be on or before 2030 and 2033. Quality assurance, accountability, and high costs continue to be significant issues. Renewable energy now provides 45% of Texas energy at a lower cost per kilowatt hour and without the hazardous high-level radioactive waste that has to be stored for thousands of years in deep geological formations. Furthermore, since the 1940s, no permanent deep geological site has been identified in the U.S., and most people do not want a nuclear waste disposal site in their area.

Other areas to investigate:

- COORDINATION OF EMERGENCY PROCEDURES IN NORTH TEXAS
- DEVELOPMENT OF FUTURE ARTIFICIAL INTELLIGENCE SYSTEMS AND TECHNOLOGY(<https://www.nytimes.com/2023/03/12/opinion/chatbots-artificial-intelligence-future-weirdness.html>)
- ECONOMIC IMPACTS OF ACCIDENTS AT THE REACTOR THROUGHOUT TEXAS
- HEALTH RISKS FOR CHILDREN AND ADULTS NEAR NUCLEAR REACTORS
(Source: [https://www.reuters.com/article/nuclear-leukaemia-france-idUSL6E8CB5QY20120111#:~:text=The%20study%2C%20conducted%20by%20the%20French%20health%20research,2%2C753%20cases%20were%20diagnosed%20in%20the%20same%20period\).](https://www.reuters.com/article/nuclear-leukaemia-france-idUSL6E8CB5QY20120111#:~:text=The%20study%2C%20conducted%20by%20the%20French%20health%20research,2%2C753%20cases%20were%20diagnosed%20in%20the%20same%20period).)
- PUBLIC INFORMATION ABOUT THE PERIODIC RELEASES OF RADIATION ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT SHOULD BE IN THE REPORT
- INCLUDE THE ANNUAL RADIOLOGICAL ENVIRONMENT OPERATING REPORT IN THE EIS
- WASTE STORAGE ON THE SITE AND LONG-TERM PERMANENT STORAGE ISSUES
- TRANSPORTATION RISKS IN TEXAS CONSIDERING THE ADDITIONAL HIGH-LEVEL RADIOACTIVE WASTE CREATED IN THE PAST AND DURING THE NEXT 20

TO 30 YEARS FOR CURRENT AND FUTURE GENERATIONS

- INCREASED SAFETY AND FINANCIAL RISKS SUCH AS ASSURANCES
- INCREASED SEISMIC RISKS TO THE REACTOR, SQUAW CREEK RESERVOIR, AND THE DAM
- AIR QUALITY RISKS
- FIRE AND TORNADO RISKS
- DIVERSIFICATION TO RENEWABLE ENERGY IS LESS RISKY AND CREATES JOBS
- LOBBYING EFFECTS BY THE PLANT OWNER, LUMINANT, AND THE INDUSTRY

CLOSING

Glen Rose, Somervell County, and all of the state are beautiful with a rich history going back centuries and into millennia. Everything works until it doesn't, as was seen with the East Palestine, Ohio train wreck. Systems were deregulated in the railroad industry and shortcuts were taken. Less oversight created more profits, but the people did not profit. They have been devastated by the calamity. Accidents happen all the time. Old nuclear power plants are like old cars. They are constantly needing repair and updating.

There are 7.76 million residents in nearby Dallas/Ft. Worth. Public health and safety should come first in the re-licensing decision. The longer Comanche Peak Nuclear Power Plant operates, the more risk there is of accidents. Radiation releases are emitted and have been emitted into the air in the area for decades. Do the people in the area know about those emissions and the risks they face due to those emissions?

“It is difficult to get a man to understand something when his salary depends on his not understanding it,” Upton Sinclair. I urge the staff at the Nuclear Regulatory Commission to do their research with integrity and in the interest of the Common Good of all people, to protect public health, the environment, and the economy of Texas. The “for profit” motive often leads to decisions that benefit the company’s bottom line and are not in the public’s interest.

I wish to emphasize that the production of renewable energy and increasing solar and wind at a lower cost to build and operate with no hazardous radioactive waste or other waste is the best option for Texas. The relicensing of the Comanche Peak Nuclear Reactor is not a good investment, not good for the environment or public health and safety.

I urge you to reject the application submitted to extend the operating licenses for the

Comanche Peak Nuclear Power Reactors Units 1 and 2 for an additional 20 years. My research indicates that Comanche Peak Nuclear Reactor should not have its operating license extended by 20 years to ensure the safety of the people in this area and the state of Texas. The Draft EIS Supplement for Comanche Peak Nuclear Reactor is inadequate and needs to be completed.

Thank you for reading and considering my remarks.

Susybelle L. Gosslee