

**Crucial Issues to Raise at the NRC's**  
**Environmental Impact Scoping Hearing**  
**on January 6, 2009   Glen Rose, Texas**

Nuclear power is a bad choice for generating electricity and would divert precious resources from readily available technologies to reduce global warming gases that are both cheaper and can be deployed faster.

Nuclear power:

- Is not a useful solution to climate change.
- Is vulnerable to severe climate conditions which prevent reliable operation.
- Is not the alternative to coal. Efficiency, energy storage and renewable energy can do the job.
- Is not clean.
- Is not safe.
- Poses serious terrorism risks.
- Is the most expensive way to generate electricity.
- Radioactive waste remains an unsolved problem.
- Fosters nuclear weapons proliferation.
- Is not the solution to energy independence.
- Has negative health impacts.
- Is not supported by the public at large.

Why is nuclear power even being considered at a time when clean, affordable energy solutions exist? When nuclear reactors were licensed in the 1970's there were no great alternatives. Wind and solar energy are well developed now and more affordable than nuclear power. Energy efficiency helps curb demand. We do not need nuclear power or the risks that it entails. It is time to ask whether it is moral to leave radioactive waste to generations to come and the nightmare of storing and repackaging it for millions of years.

The US-APWR reactors proposed by Luminant are a design that is not approved by the Nuclear Regulatory Commission and has never been built anywhere in the world. Why should Texans be the guinea pigs for a radioactive experiment? The reactor design isn't even scheduled to be approved until shortly before the license is to be granted. Citizens won't have the benefit of the NRC analysis of the design, while the licensing process speeds forward.

The Environmental Impact Statement should stress the need for a complete and approved design before any further steps are taken in the licensing process. Human and environmental health are at risk due to this major fast-tracking of nuclear reactor licensing. The design should be submitted and not approved until deemed adequate, then construction licensing should be considered, followed by consideration of an operating license, but all three processes are occurring simultaneously in a rush to get plants licensed. Health, safety and economic concerns are being put on the back burner, while Luminant and other utilities greedily reach for loan guarantees, a subsidy that ratepayers will pay for in the end with higher electric bills.

The two proposed Comanche Peak reactors could cost up to \$22 billion according to Luminant's own documents. This is before cost overruns. This amount could make 7.3 million homes more energy efficient. Pursuing efficiency lowers bills, reduces electricity consumed, and creates local jobs. The existing Comanche Peak reactors ran ten times over budget and were years late coming online. What if this happened again?

### **Cancer: More radiation means higher risk**

The Environmental Impact Statement (EIS) should thoroughly examine radiation health risks.

No national (MACT) standard has been set for radionuclide emissions, despite the fact that nuclear reactors routinely emit cancer-causing radioactivity. No new reactors should be licensed until this standard is set.

- Research has shown an increase in cancer rates around nuclear plants. Dr. Joseph Mangano of the Radiation and Public Health Project studied the cancer death rate in the three counties closest to the South Texas Nuclear Project, an area that originally had a cancer rate below the statewide rate. Sixteen years after the reactors began running, the cancer death rate in the in the area had risen over 16%.
- The National Academy of Sciences has concluded that radiation is dangerous even at low levels (BEIR VII study).
- While low-level radiation exposure is not as damaging as high-level radiation on a short-term basis, prolonged exposure to low-level radioactivity can be just as damaging to humans.
- The EIS should research the extent to which new reactors would add to cancer risks. Four reactors at one site would produce significantly more radioactive risk than the two existing reactors. What would be the total amount of low-level radiation emitted? How much would surrounding populations be exposed? How much radioactivity would be in routine operations?
- The EIS should use background radiation levels not only from before the construction of the two existing nuclear reactors also from before the testing of nuclear weapons in the United States, which resulted in radioactive fallout.

### **Radioactive Waste - No solution in sight**

No high or low-level waste sites are available.

- Nuclear reactors produce tons of high and low-level radioactive waste that remains dangerous to living beings for tens of thousands of years. Radioactive and toxic waste is produced at every stage of the fuel cycle, including routine plant operations.
- Federal law prohibits the licensing of any new nuclear plant until there is an adequate waste disposal plan. Nuclear plants have been operating for 50 years, but the waste disposal problem has not been solved. Radioactive waste remains stored onsite at reactors across the county.
- There is no national storage facility for high-level radioactive waste and the Yucca Mountain repository is unlikely to open in the near future. The Associated Press wrote: "The Energy Department is cutting operations and the chief contractor is laying off its staff at the desert site where the government plans to build a national nuclear waste repository..." Jan 8, 2008.

- The Andrews County low-level waste dump application has been deemed incomplete by the Texas Commission on Environmental Quality.
- The impacts and risks of storing additional high -level radioactive waste on site needs to be studied thoroughly in the EIS. The long- term cumulative health impacts of additional low-level radiation need to be studied thoroughly and included in the environmental impact study as well. Impacts on humans, wildlife and plant life need to be considered, with special attention given to threatened and endangered species.
- The EIS should study the additional safety and security risks of more radioactive waste.
- The license for two new reactors at Comanche Peak, or any other reactor, should not be issued since there is no effective resolution of the storage issue.

## Accident and Security Risks

- The risk of a nuclear accident and the magnitude of devastation would increase with more reactors on the site.
- The public deserves to know the real risks of nuclear power. In 1980 the NRC conducted a study of what would happen under a worst-case scenario accident at each nuclear plant site. The Comanche Peak estimates were:
  - **1210 early deaths (25 mile radius around plant)**
  - **13,800 early injuries (35 mile radius)**
  - **\$117 billion (1980 dollars) in financial consequences**

The Environmental Impact Statement should include a similar study to update these risk figures, since the population of the region has grown and since there would be more reactors.

- The EIS should analyze and publicize the impacts of an airplane crashing into a nuclear reactor or the spent fuel pool and the impact that such a disaster would have for both humans and the environment.
- Terrorists have considered crashing airplanes into nuclear reactors. Terrorist risks must be more thoroughly analyzed, as it would be easy enough to lob mortar from a construction site toward the existing spent fuel pool, creating a major nuclear accident. Heavy construction equipment could breach barricades between a construction site and existing reactors. Workers would come from any number of foreign countries, creating language barriers and security challenges.
- The EIS should recommend that no new nuclear reactors be licensed until they can at least meet the same post-911 security hardening requirements as existing reactors.
- The EIS should also recommend that no design be approved that cannot safely withstand an airplane attack or other form of terrorist assault.

## Water Quantity and Contamination Risks

- Nuclear reactors consume vast quantities of water. Each reactor would use over a million gallons of water every minute for the circulating water system used for cooling. 103,717 acre-feet/year would be drawn from Lake Granbury and 42,100 acre-feet/year would be returned.
- Every minute 31,341 gallons of makeup water from Lake Granbury would be needed for each reactor. (from Environmental report 3.3-5) “Makeup water” replaces the water lost to evaporation and the water called “blowdown” would be returned to Lake Granbury.
- Biocide, algacide, pH adjuster, corrosion inhibitor and silt dispersant would be injected into water drawn from Lake Granbury, and only a fraction of the “blowdown” water would be treated before being returned to the lake or sent to an evaporation pond. Why wouldn’t all of the water be treated before being returned to the lake?

- The EIS must do a full analysis of how much of each of these contaminants would end up in Lake Granbury, how much would migrate into the Brazos River and how much would escape through evaporation. The exact chemical names must be included, not just generic terms such as “biocide.” The impacts of exposure of humans, animals and wildlife to these toxic compounds should be analyzed.
- The EIS should examine the impacts of vast water consumption on the aquifer and the water table levels. Will wells be sucked dry? How high is the risk of contamination of the aquifer and other waterways through radioactive leaks? Could the problem ever be remediated if radioactive or chemical leaks occurred?
- Radioactive tritium can leak from nuclear reactors and increase cancer risks. According to NRC reports tritium levels are already high at the Comanche Peak site compared to other reactor sites. What would adding more reactors do to the already high levels of contamination?
- Numerous radioactive tritium leaks in Illinois are so severe that people can’t drink or bathe in their water due to contamination. Cancer cluster, wildlife impacts, fines and lawsuits resulted.
- Nuclear reactors heat up the air and water around them. Several U.S. reactors have had to cut back electric generation because the cooling water got too hot. During the 2006 heat wave in France nuclear and coal plants had to be shut down because the water was too hot to cool them. 2000 MW of energy had to be imported. (Source: False Promises, Debunking Nuclear Industry Propaganda, Nuclear Information and Resource Service, May 2008.)
- If global warming is occurring and as severe as scientists predict will there be enough cool water to operate the reactors safely? The EIS needs to include analysis based on input from global warming scientists.
- In drought conditions, will there be enough water for cities, businesses, farms and ranches if two nuclear reactors are built?

## **Evacuation Plans Must Be Improved**

Luminant and the NRC need to do more to prepare the community for action in the event of an accident or disaster, including distributing potassium iodide tablets. Readiness for an accident is a serious issue.

- If there is an accident, will the community be able to evacuate? What hospitals would be used to care for those who might be exposed to radiation and how many people could they care for? How does the hospital facility availability compare to the number of potential injuries and radiation exposure victims?
- Are there adequate firefighting and police forces? Do they have any training or any equipment to shield themselves from radioactivity in case of a nuclear accident? What more is needed to protect themselves, as well as others?
- Potassium iodide tablets would be needed if there were a nuclear accident. The tablets would reduce human uptake of radioactive iodine, a carcinogen which goes to the thyroid gland. According to NRC rules, residents near nuclear plants must receive potassium iodide tablets in case of emergency.
- Has anyone in the 50-mile radius around the existing two Comanche Peak reactors ever received potassium iodide tablets? Have they been told how to get them?

## **Need for Power: The need has not been demonstrated, better alternatives exist**

Luminant has not proven there is a need for this new energy.

- The application ignores the effect energy efficiency and renewable energy will have in the future. Are recent state-mandated energy efficiency and renewable energy goals be factored into the energy needs assessment?
- Studies have shown that Dallas/Ft. Worth could meet 101% of projected growth in demand using efficiency and renewable energy.
- State energy use projections should be revisited in light of the economic downturn.

## **Subsidence: Overuse of groundwater**

Subsidence is a shifting downward of the earth's surface. Causes of subsidence include depleted groundwater, mining, natural gas and oil extraction. What impacts are there from existing industries that put the area at risk? What landfills are still in existence that could contaminate cooling water? Will local oil and gas operations impact the plant site or vice versa?

## **Transportation/ Power lines**

The new plant will need to use existing roads and to build new ones. Lots of cars, trucks, and machinery will pass over them.

- How will Luminant ensure that roads are not congested? How will Luminant transport uranium and on which highways? Which communities will it pass through, and will their police and firefighting forces be trained to deal with a radioactive accident?
- How would Luminant transport low-level and high-level radioactive waste if offsite storage ever gets approved?
- What land will need to be condemned or purchased in order to build or upgrade new transmission lines?
- What environmental and economic impacts will result from new transmission lines, including the 345 kV line planned to go between the plant site and the Whitney Switch, going through much of Somervell and Bosque Counties?

## **Environmental Justice**

The proposed new plants would affect low income and minority residents.

- How much will rent go up when the influx of construction workers and their families come to Somervell County?
- Will pollution from construction and operation reach low-income housing areas?

## **Contamination from Uranium would increase in South Texas**

Mining and enriching uranium results in radioactive contamination of the environment and risks to public health. Exposure to radon has been shown to cause kidney failure, chronic lung disease, and tumors for the brain, bone, lung, and nasal passage.

- In the last ten years, the Texas Department of Health Services has cited several instances of radioactive waste spills by uranium mining companies, including Cogema Inc.'s 1998 spill of over 20,000 gallons of radioactive solution in Bruni, Texas.
- The Environmental Protection Agency has warned residents of Kleberg County that their groundwater currently contains unsafe levels of uranium, and strongly advises against drinking it.
- Residents of Goliad and Kleberg counties have both publicly opposed the continued operations of mining companies in their communities.
- The aquifer below Karnes County has been contaminated by uranium mill tailings. The Department of Energy estimates clean up will cost \$348 million but, according to a Texas Department of Agriculture report, will not implement the clean up plan.

## **Competence and Character in question, Poor Track Record at Existing Reactors**

Here are some excerpts from articles about Comanche Peak reactors:

### **NRC Staff Proposes Fine Against Unit of Texas Utilities**-Wall Street Journal, 01/02/1984

The Nuclear Regulatory Commission staff charged that a supervisor "intimidated" quality-control inspectors working at Texas Utilities Generating Co.'s Comanche Peak nuclear power plant.

### **Comanche Peak Plant in Texas Is Undergoing Major NRC Inspection** -Wall Street Journal, 7/12/1984

The Nuclear Regulatory Commission began a major inspection of the Comanche Peak nuclear power plant because of the large number of unresolved allegations of poor workmanship at the uncompleted plant, principally owned by Texas Utilities Electric Co.

The NRC said 45 inspectors are investigating the 404 complaints that center on safety conditions at the plant, located 75 miles southeast of Dallas near Glen Rose. The commission said the high number of complaints warranted the investigation, which is expected to take 2 ½ months to complete and cost \$1 million.

The inspection will concentrate on the plant's safety, construction, wiring and quality control. The NRC said 181 of the complaints raise questions on the plant's record-keeping process, which includes quality control and safety records.

(This article came 9 ½ years after construction began, a consumer group had already raised concerns about inadequate welding.)

### **Safety Procedures at Comanche Peak Cited by NRC Panel** -Wall Street Journal, 10/02/1984

The troubled plant has been under construction since 1974 when it was expected to cost \$780 million. Since then, Comanche Peak has been plagued by cost overruns and delays, increasing its estimated cost to \$3.89 billion this year.

### **Texas Utilities Co. Finds New Problems at Comanche Peak** - Wall Street Journal, 7/16/1986

Texas Utilities Co. said it discovered new problems at its Comanche Peak nuclear power plant that will increase the plant's cost and delay the start of operations beyond mid-1988.

In a filing with the Securities and Exchange Commission, Texas Utilities said the problems were discovered in several design calculations, reinspection and, in some cases, repairs.

In April the company said it would have to modify about 30% of the pipe supports in Unit 1 and replace sleeves where electrical wires run through walls in the containment buildings, delaying the project and increasing the cost.

Each additional month's delay in the plant's completion costs \$35 million in financing costs, taxes, insurance, staff and utilities.

### **NRC Criticizes Managers in Texas Office On Data for Comanche Peak Nuclear Unit** - Wall Street Journal, 12/12/1986

Nuclear Regulatory Commission investigators found that managers in the commission's Texas regional office pressured agency inspectors to downgrade or delete findings of violations at the Comanche Peak nuclear power plant.

The NRC's Office of Inspector and Auditor also found that also found that the regional office's reports on its own inspections were sometimes inaccurate or flatly false. Further, it concluded that the office's inspection of quality assurance programs at the Comanche Peak plant were inadequate and exacerbated weaknesses of the plant's oversight of its construction quality.

The plant, originally scheduled to begin operating in 1980, currently is aiming for 1989 and the utility estimates its cost will reach \$6.7 billion.

Investigators concluded that it appears the region's quality assurance inspection effort couldn't be relied upon "as evidence of the safe construction" of the plant, which is about 75 miles southwest of Dallas.

The report, however, said some officials believe that a heavily staffed NRC effort to review the plant's parts in recent years may enable the NRC to decide whether the plant should be licensed to operate.

*(The separate decision on whether to grant an operating license provided a safety margin that current licensing procedures have eliminated since the construction and operating license is combined.)*

### **Texas Plant Comes Under Scrutiny As Cover-Up of Problems Charged** - New York Times, 10/17/1989

The inspectors maintained that Comanche Peak was not ready to begin loading fuel and that senior commission officials had manipulated inspection data to make it look as though it was read.

"We believe that the commission should be aware of what we view as manipulation and the exclusion of factual information" the inspectors wrote in the letter, a copy of which was made available to the Associated Press.

### **Leak in cooling system closes Comanche Peak** - Ft. Worth Star-Telegram, 3/20/1991

...the plant was shut down after sodium levels in the water in the non-nuclear parts of the plant became too high. Tests early today showed that the water from Squaw Creek Reservoir, the plant's cooling pond, had mixed with the water used for steam to operate turbines, Hedrick said. The turbine water will need to be chemically cleaned to remove any impurities that entered from the leak. Impurities can cause deposits and corrosion in the turbine, Hedrick said.



**EPA tests water near nuclear facility** – Ft. Worth Star Telegram, 3/23/1991

...investigating a report that 25 to 30 drums are submerged in Squaw Creek Reservoir near the Comanche Peak nuclear power plant outside Glen Rose. At least one drum was marked "Delta Petroleum Products," Reed said.

Brown and root, the contractor building the \$10 billion Comanche Peak project, build seven industrial waste landfills near the reservoir. Two of the landfills were found to have contained a small amount of illegal hazardous waste, Ramsey said.

**Brace hit plant lines, TU says Water leak prompts an early shutdown** – Ft. Worth Star Telegram, 3/28/1991

The Comanche Peak nuclear power plant, scheduled for a 42-day fuel-conserving closure next month, has shut down three weeks early because a temporary metal brace fell and punctured lines that carry water to cool steam used in electricity generation, an official said yesterday. "It was a 3-foot, temporary brace used during construction and, for whatever reason, the brace came loose from its position and struck and damaged three condenser tubes," TU Electric spokesman Jerry Lee said of the March 20 incident. The damage allowed reservoir water to mix with purified steam, triggering an alarm indicating sodium contamination in the system, he said.

The spokesman said the early closure and condenser repair would have minimal economic impact on the plant, completed at a cost of \$9.1 billion, more than 10 times its originally estimated cost of \$779 million.

**Comanche Peak called No. 1 in safety violations** -Ft. Worth Star Telegram, 4/26/1991

Comanche Peak is a "nuclear lemon" that leads the nation in safety violations but performs slightly better overall than other troubled nuclear plants, says a report released yesterday by a citizen watchdog group. The findings for the plant near Glen Rose, about 45 miles southwest of Fort Worth, reflect a myriad of start-up problems common to many new nuclear plants, say both the watchdog group Public Citizen and officials of TU Electric, which owns the plant. "We should never give a lot of slack to new plants just because they're new," said Ken Bossong, who directs the organization's Critical Mass Energy Project, which monitors safety at nuclear power plants nationwide.

He cited the Three Mile Island plant near Harrisburg, Pa., which had been operating for just six months in 1979 when it became the site of the worst nuclear plant disaster in U.S. history. Comanche Peak also had an unusually large number of emergency plant shutdowns, the group said. It was shut down six times, more than any other plant in the country except the South Texas power plant in Matagorda County, which had to be shut down 18 times.

**Utility delays restart Nuclear plant looks at damaged turbine** –Ft. Worth Star-Telegram 05/01/1991

Comanche Peak Nuclear Power Plant officials are searching for the cause of damage to a steam turbine, delaying the reopening of the plant, which has been closed since the discovery of a water leak in March.

Since the plant opened in April 1990, it has shut down 19 times for repairs, said TU Electric spokesman George Hedrick; eleven of those involved the nuclear portion of the plant, he said. None of the problems posed a hazard, he said.

Plant officials and a spokesman for the regional Nuclear Regulatory Commission office in Arlington said problems at the Glen Rose facility have been average for a plant just getting started.

**Oil spill wiped up at reactor Workers' error causes 3,000 gallon deluge** – Ft. Worth Star-Telegram, 5/05/1991

Cleanup crews for TU Electric and its contractors worked yesterday to clean up nearly 3,000 gallons of heavy-weight oil that spilled from a turbine system at Comanche Peak nuclear power plant, a utility spokesman confirmed last night. TU Electric spokesman Jerry Lee said 90-weight generator oil gushed for nearly five minutes after a pipe was mistakenly opened while workers tried to clean the turbine's hydraulic systems about midnight Monday.

He said the heavy oil covered the second floor of the plant's turbine generator building, spilled onto the ground level and leaked into the plant's drainage system before operators could shut it off.

"The contractors who were working thought they had clearance from the control room to open the system, when they did not," Lee said.

**Reactor turbine badly damaged by heat surge** – Ft. Worth Star-Telegram, 5/16/1999

The owner of the Comanche Peak nuclear power plant is investigating a possible error by plant operators that may have prompted the near destruction of a multimilliondollar steam turbine and will idle the \$9.45 billion facility through the end of May. Records obtained from the Nuclear Regulatory Commission yesterday show that an unexplained heat surge inside one of the three turbines generating electricity from the Unit 1 reactor melted portions of the turbine's rotor blades. The surge also damaged the turbine casing, disintegrated a shroud that guards the blades of the giant turbine and scattered shards of metal throughout the equipment.

Officials of plant owner TU Electric said the turbine could have operated for months in its badly damaged condition. Contractors checking the equipment April 23 found that the rotor's 4-foot blades had expanded, bent and fused into the middle layer of heavy metal casings in the turbine.

Plant spokesman Jerry Lee said the utility is shortening the rotor blades within the 4-ton turbine system to remove the damaged sections and may restart the plant by the end of May. Lee said replacing the massive rotor will cost several million dollars. A spokesman for the state Public Utility Commission in Austin said yesterday that ratepayers may have to pick up the tab For the damage and some of the lost revenues from the closure. The commission would decide that question when the utility seeks its next rate increase.

For more information – visit [www.NukeFreeTexas.org](http://www.NukeFreeTexas.org)