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South Dakota Public Utilities Commission
Public Utilities Commission
Caption Building, 1st floor
500 E. Capitol Ave.
Pierre, SD 57501-5070

RE: Docket HP 22-001

Dear Chair Nelson, Commissioner Header, and Commissioner Hanson,

Gentlemen,

I have been in Industrial and Power Plant Maintenance and Operation all my life, starting as a Machinist Mate in the US Navy from 1970 thru 1975. I have worked in a manufacturing plant of safety equipment, zirconium tubing plant for nuclear fuel and control rods, 'N' Reactor Power Plant and Plutonium Finishing Plant in Washington State for the US DOE producing weapons grade plutonium, Ben French Power Plant (coal fired) in Rapid City, and at Big Bend Project at Fort Thompson for US Army Corps of Engineers. Having worked with coal, fuel oil, nuclear, steam, water, acids/caustics, hydraulics and pneumatics, and Safety, I have a good understanding of most things.

In 2016 and 2017, I attended 4 of the 6 meetings held in Spink, Stanley and Haakon counties for the Bore Hole Project sponsored by the US Doe. It was with my help that the people asked the proper questions, so they could decide for themselves that the Bore Hole Project wasn't for South Dakotans.

I am speaking up again against a project that isn't for South Dakota, or anywhere for that matter. CO2 is a naturally occurring gas that is necessary for vegetation growth. In higher concentrations, it's heavier than air and collects in lows spots. That's why it makes a great extinguishing agent for fighting small fires. It's not good in an enclosed area or confined space as it is IDLH (immediately dangerous to life and health). In other than atmospheric conditions, it must be pressurized to transport or store it. It is always seeking to escape, that why fire extinguishers must be weighed annually to make sure they are still useable.

First of all, the process of transporting this gas, it must be under high pressure, which means the it will always try to escape. Its transportation pressure is almost 3 times the pressure of transporting natural gas, 1200 to 2500 psi. CO2 is 1.5 times heavier than air, which means that it will displace oxygen. It's not like natural gas that is lighter than air and will dissipate quickly. It will gather in a low spot endangering people, livestock and other animals. Since it is odorless, no one will know it is there. A person driving their vehicle through a cloud of this gas, the vehicle will die, because it needs oxygen that won't exist, and they will die before they can escape it, one breath of concentrated CO2 will be their last.

With all piping systems, expansion loops are used to increase the flexibility of the piping system, to reduce the generated expansion stress and displacement caused by thermal expansion or contraction.

How are expansion loops going to work underground? With the ground shifting continuously, there will be a high probability of leaks due to ground shift. Look at our roads and see how often they need repair due to heaving and dropping. How many CO2 detectors will it take to monitor this 2000 mile pipeline and who will monitor it?

Second, how will the CO2 be kept from attracting H2O from condensation. Water combined with carbon dioxide creates carbonic acid which is highly corrosive. The transport piping, valves and controls will have to be made of stainless steel which is much more expensive than steel, and requires complex welding techniques for construction and repair. Because of the leak probabilities, there will need to be more frequent valving stations to control flow.

Third, because of the hazards and danger of leaks, local community first responders and medical personnel will need to be trained in responding and caring for the injured public. Anyone living, visiting, or commuting in the area of the CO2 piping, will have to be warned and trained how to deal with these hazardous areas. You just can't throw a hazardous pipeline in peoples faces and expect them to say, Show Me the Money. Money won't pay for their life or the lives of their animals.

Fourth, once the CO2 is transported to its end location, what happens then? If it is used for oil fracking, one major concern with CCS (carbon capture and storage) is that CO2 could leak out of these underground reservoirs into the surrounding air and contribute to climate change, or taint nearby water supplies. Another is the risk of human-made tremors caused by the build-up of pressure underground, known as induced seismicity.

We need to reduce emissions, not transport them to elongate the life of them. Wind, solar, hydroelectric and Nuclear are better choices.

Sincerely,

Gregg S. Jankord