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**Comments of Xcel Energy
to New Mexico Oil Conservation Division
March 13, 2006**

Regarding Application by Duke Energy Field Services, dba Linam Ranch Processing Plant to inject Hydrogen Sulfide gas in Lea County New Mexico

My name is Gale Henslee, and I am Principal Environmental Analyst for Xcel Energy, dba Southwestern Public Service Company. Xcel Energy is a combination electricity and natural gas energy company. We offer a comprehensive portfolio of energy-related products and services to 3.3 million electricity customers and 1.8 million natural gas customers. We have regulated operations in 10 Western and Midwestern states, and revenue of \$8 billion annually; own over 260,000 conductor miles of electricity transmission and distribution lines, and more than 33,000 miles of natural gas pipelines; and operate power plants that generate over 15,200 megawatts of electric power.

Southwestern Public Service Company is a New Mexico Corporation, generating electricity and providing electric service for much of the eastern 1/3 of the state. Maddox Station is a natural gas fueled generating plant located about 9 miles west of Hobbs, and ½ mile west of the proposed injection well. The Maddox Station staff consists of 14 employees during the day, and only two operators at night. Additional employees are shared with Cunningham Station, which is located 3 miles further west.

Xcel opposes the location of a hazardous waste injection well in proximity to our plant and employees.

Hydrogen Sulfide (H₂S) is an extremely toxic substance:

- Listed as a Hazardous Substance at 40 CFR 302
- Listed as Extremely Hazardous Substance at 40 CFR 355
- Listed under CERCLA with a Reportable Quantity (RQ) of 100 pounds
- RCRA Hazardous Waste U135 at 40 CFR 261.33

As such, this well should be classified as a Class I Hazardous Waste Injection Well, and those are prohibited in the State of New Mexico. 20 NMAC 6.2.5004.

At concentrations of 20 to 150 ppm, it may cause irritation of the eyes and at slightly higher concentrations, irritation of the upper respiratory tract. At 500 ppm for 30 minutes, headache, dizziness, excitement, staggering gait, diarrhea, dysuria, bronchitis or bronchopneumonia can occur. At concentrations of 800 to 1000 ppm it may be fatal in less than 30 minutes. Very high concentrations cause death instantly.¹

¹ Sax's Dangerous properties of Industrial materials, 8th Edition

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The gas we're talking about is estimated to range from 200,000 ppm to 350,000 ppm.

The applicant filed a form C-108 with the NMOCD in September, 2005 as required under 19 NMAC 15.9.701. However, that section does not specifically authorize the injection of gas into any formation for the purpose of waste disposal. (see Appendix)

This injection well appears to be very unusual, perhaps of a type not anticipated when the NMOCD rules were formulated, especially section 19.15.9.711.A, which provides an exception from the rules for surface waste facilities for injection wells. However, we believe that this well does present a real risk to the public health, and as such, should be subject to the requirements of 19.15.9.711.B. Form C-137 should be required, and the applicant should be subject to additional public notice, financial assurance, and should implement a "Hydrogen Sulfide Prevention and Contingency Plan" to protect public health. (see Appendix)

Xcel Energy's Maddox Station is located ½ mile due west of the proposed injection well site, but we were not notified of the permit application, even though we are the surface owner adjacent to the property on which the well is proposed to be located. Although it appears that the applicant was not required under NMOCD rules to notify adjacent landowners, we feel this was inappropriate, due to the level of hazard presented by H₂S. We were later provided a copy of the C-108 application, upon request. The information presented in the application regarding land ownership of the Xcel property was incorrect. Southwestern Public Service Company owns the SE ¼ of section 25, and leases the east ½ of the SW ¼ from the State.

The applicant stated that they were unable to obtain water analyses of any drinking water wells within two miles of the proposed injection well. Maddox Station operates a system of eight interconnected wells for industrial purposes, all of which are part of the Public Drinking Water System for Maddox Station. One of these wells is very near the ½ mile radius, and four more are at or within the two-mile radius from the proposed injection well. These wells have been there for many years, and are clearly located on the USGS 7.5 minute quadrangle map. They should have been included in the information developed for the application. Numerous other wells are also clearly indicated on the USGS map, and we feel that some effort on the part of the applicant would have resulted in a more accurate inventory.

If this well is permitted, we would like to see a direct link to the leak detection alarms from the proposed facility into the Maddox Station control room. This would give our employees sufficient time to prepare and protect themselves in the event of a serious leak at the wellhead. Since our employees may be working outdoors, and at locations remote from the plant, it would be helpful if a large windsock and audible alarm were also included at the wellhead.

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We want to know why the wellhead could not be located at a safer location, perhaps employing directional drilling and locating the wellhead farther from public places.

There are several old faults located within the area, with displacements of hundreds of feet. Although the faults appear to be deep, and inactive, the injection zone is into formations affected by these faults. We would like to see more analysis regarding whether the injection well could cause movement of these faults, possibly subjecting our water wells, pipelines or other equipment to mechanical damage.

Xcel Energy and SPS are customers of the pipelines served by Linam Ranch, and want to continue to have a positive relationship with the company. We believe that additional time and communications are needed to resolve unanswered questions, and urge the Commission to act accordingly. We also urge the Commission to consider the potential public hazard involved, and act to require protection of the public commensurate with the degree of hazard posed by this waste.

Appendix

Excerpts from New Mexico Regulations

19.15.9.701 INJECTION OF FLUIDS INTO RESERVOIRS:

A. Permit for injection required. The injection of gas, liquefied petroleum gas, air, water or any other medium into any reservoir **for the purpose of maintaining reservoir pressure or for the purpose of secondary or other enhanced recovery or for storage or the injection of water into any formation for the purpose of water disposal** shall be permitted only by order of the division after notice and hearing, unless otherwise provided herein. The division shall grant a permit for injection under 19.15.9.701 NMAC only to an operator who is in compliance with Subsection A of 19.15.1.40 NMAC. The division may revoke a permit for injection issued under 19.15.9.701 NMAC after notice and hearing if the operator is not in compliance with Subsection A of 19.15.1.40 NMAC.

19.15.9.711 APPLICABLE TO SURFACE WASTE MANAGEMENT FACILITIES ONLY:

A. A surface waste management facility is defined as any facility that receives for collection, disposal, evaporation, remediation, reclamation, treatment or storage any produced water, drilling fluids, drill cuttings, completion fluids, contaminated soils, bottom sediment and water (BS&W), tank bottoms, waste oil or, upon written approval by the division, other oilfield related waste.

Provided, however, if (a) a facility performing these functions utilizes underground injection wells subject to regulation by the division pursuant to the federal Safe Drinking Water Act, and does not manage oilfield wastes on the ground in pits, ponds, below grade tanks or land application units, (b) if a facility, such as a tank only facility, does not manage oilfield wastes on the ground in pits, ponds below grade tanks or land application units or (c) if a facility performing these functions is subject to Water Quality Control Commission Regulations, then the facility shall not be subject to this rule.

B. Unless exempt from Section 19.15.9.711 NMAC, all commercial and centralized facilities including facilities in operation on the effective date of Section 19.15.9.711 NMAC, new facilities prior to construction and all existing facilities prior to major modification or major expansion shall be permitted by the division in accordance with the following requirements:

(1) Application Requirements - An application, Form C-137, for a permit for a new facility or to modify an existing facility shall be filed in DUPLICATE with the Santa Fe office of the division and ONE COPY with the appropriate division district office. The application shall comply with division guidelines and shall include:

- (a) The names and addresses of the applicant and all principal officers of the business if different from the applicant;
- (b) A plat and topographic map showing the location of the facility in relation to governmental surveys (1/4 1/4 section, township, and range), highways or roads giving access to the facility site, watercourses, water sources, and dwellings within one (1) mile of the site;
- (c) The names and addresses of the surface owners of the real property on which the management facility is sited and surface owners of the real property of record within one (1) mile of the site;
- (d) A description of the facility with a diagram indicating location of fences and cattle guards, and detailed construction/installation diagrams of any pits, liners, dikes, piping, sprayers, and tanks on the facility;
- (e) A plan for management of approved wastes.
- (f) A contingency plan for reporting and cleanup of spills or releases;
- (g) A routine inspection and maintenance plan to ensure permit compliance;
- (h) A Hydrogen Sulfide Prevention and Contingency Plan to protect public health;
- (i) A closure plan including a cost estimate sufficient to close the facility to protect public health and the environment; said estimate to be based upon the use of equipment normally available to a third party contractor;
- (j) Geological/hydrological evidence, including depth to and quality of groundwater beneath the site, demonstrating that disposal of oilfield wastes will not adversely impact fresh water;
- (k) Proof that the notice requirements of Section 19.15.9.711 NMAC have been met;

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- (l) Certification by an authorized representative of the applicant that information submitted in the application is true, accurate, and complete to the best of the applicant's knowledge.
- (m) Such other information as is necessary to demonstrate that the operation of the facility will not adversely impact public health or the environment and that the facility will be in compliance with OCD rules and orders.

20.6.2.5004 PROHIBITED UNDERGROUND INJECTION CONTROL ACTIVITIES AND WELLS:

A. No person shall perform the following underground injection activities nor operate the following underground injection control wells:

(3) The injection of any hazardous or radioactive waste into a well is prohibited, except as provided in this Subsection.

(a) Class I hazardous or radioactive waste injection wells are prohibited, except naturally-occurring radioactive material (NORM) regulated under Section 20.3.1.1407 NMAC is allowed as a Class I non-hazardous waste injection well pursuant to Subsection B (1) of Section 20.6.2.5002 NMAC;

**Bobby Gonzales, CFI, CFII, PI
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Cunningham/Maddox Power Plants
Hobbs, New Mexico 88240**

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**Addendum To Gale Henslee, Principal Environmental
Analyst, Xcel Energy/Southwestern Public Service
Company**

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As Safety Consultant to the Cunningham/Maddox Power Generating Plants my concern is obviously, the overall safety to our employees, emergency response personnel and the general public relative to the potential hazards involved here; particularly H₂S (Hydrogen Sulfide). As you know, H₂S is a toxic, flammable gas with a distinct "rotten-egg" smell. H₂S is a colorless liquid, which rapidly turns into a gas at standard atmospheric temperatures and pressures. Inhalation of various concentrations can result in unconsciousness, coma and death. Contact with rapidly expanding gases, or contact with the liquid, may cause frostbite. Both the liquid and gas pose a serious fire hazard when accidentally released. The gas is heavier than air and may spread long distances making distant ignition and flashback possible. Flame or high temperature impinging on a localized area of a cylinder of H₂S can cause the cylinder to rupture without activating the cylinders relief devices. Adequate release detection alarm devices, personal protective equipment, fire protection, training and evacuation are paramount. This becomes an even greater consequence given the close proximity of our facility to the proposed injection well site; approximately 1/3 of a mile. The most significant route of exposure for H₂S is by inhalation. Inhalation of high concentrations of H₂S can cause dizziness, headache, and nausea. Exposure of higher concentrations can result in respiratory arrest, coma or unconsciousness. Exposure for more than 30 minutes at concentrations greater than 600 PPM has been fatal. Continuous inhalation of low concentrations may cause olfactory fatigue, so that the odor is no longer an effective warning of the presence of H₂S. Emergency Evacuation and Preparedness are also a grave concern in that distinct emergency evacuation measures have not been established here. Depending on wind directions, it is quite possible the only means of egress, in an emergency situation, would be in the direction of the point of origin. Again, proper detection alarm devices, personal protective equipment, fire protection, training and evacuation are paramount and may be a matter of life and death.

**Jeffrey Parham
Xcel Energy Power Plant Engineer
Cunningham/Maddox Power Plants
Hobbs, New Mexico 88240**

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As Plant Engineer to the Cunningham/Maddox Power Generating Plants my concern is Maddox Station's power generating equipment. The equipment I am mostly concerned about is the steam turbine, the generator, and the boiler. According to our operation policy, "we will not leave our power plant unmanned while the unit is running." This means that during any type of evacuation it is necessary that we trip our turbine and boiler to prevent catastrophic failure.

We require two operators stationed at the plant at all times, a control room operator and a plant operator. Even with a good well thought out evacuation plan I must point out some of the liabilities involved in shutting down our plant during an emergency evacuation situation. During an emergency evacuation our operators are trained to hit both the turbine and boiler trips as they are hurrying out of the control room door. Without anyone in the plant while the turbine is coasting down to a stop there is no one to put the unit on turning gear. Turning gear is used to keep the turbine and generator rotors from bowing. Bowing will cause major damage to the rotors possibly resulting in replacement. No one will be able to determine if the auxiliary oil pump or the direct current oil pump turned on. If they do not run the turbine and generator will coast down with dry bearings,

which will destroy the bearings and scar the journals (rotor) causing quite costly repairs. If the generator breakers fail to open as designed by the generator relay trips the generator will be motorized and destroy the windings. This again should be observed by the operators during a shutdown to ensure proper operation of the generator breakers. Boiler trips are meant to protect the boiler during a shutdown. During an emergency shut down we must have the opportunity to see if the burners into the boiler are no longer flowing gas. If control is lost to our boiler catastrophic, unforeseen damage could occur. The loss of Maddox Station's generation could also result in the loss of other power plants in the surrounding area such as Cunningham station due to under frequency. This would create a company generation lost liability.

Maddox Station is vital to the generation in Southeastern New Mexico and West Texas. We want to be sure that Duke Energy and the Oil Conservation Division is aware of the liabilities involved with evacuating Maddox Station, even during a false alarm.