REGULATORY ISSUES AFFECTING SOUR CO_2 FLOODS SHOULD BE CONSIDERED EARLY IN PLANNING

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SUMMARY

This paper addresses one method of dealing with produced gas containing carbon dioxide (CO_2) and hydrogen sulfide (H_2S) in CO_2 secondary recovery projects in the Permian Basin of west Texas and southeast New Mexico. Reinjection of produced gas is becoming more common as Permian Basin CO_2 floods mature. Reinjection can be very cost effective, environmentally prudent, and technically beneficial. Reinjection reduces or eliminates sulfur emissions, reduces capital costs by eliminating sweetening facilities, and often reduces the cost of injection CO_2 purchases. However, reinjection of H_2S-containing ("sour") gas creates some regulatory concerns not present with CO_2 or sweet gas. The Railroad Commission of Texas (RRC) has several rules in place designed to ensure public safety. Some of these regulations require expensive solutions if the regulatory issues are not planned in the initial stages of project design. This paper will review the regulations that will affect gas reinjection projects in the Permian Basin, and outline steps to efficiently address the regulatory concerns.

HISTORY OF RULE 36

The RRC is the state regulatory agency overseeing oil and gas operations in the State of Texas. RRC rules address conservation of resources, environmental protection, and protection of correlative rights. Since 1973 there has been one rule, Statewide Rule 36[1], which addresses public safety regarding drilling and production operations in H_2S areas. Rule 36 is very specific regarding drilling, production, workover, and transportation involving hydrocarbons containing over 100 parts per million (ppm) H_2S. Rule **36** directly addresses sour gas injection.

Rule 36 was initially suggested for the protection of workers and the public. H_2S production became a concern in East Texas[2], as the Smackover trend was developed in the early 1970's. Industry proposed a rule to the Commission and the first rules regulating sour production were issued on 25 September 1973. This first version of Rule 36 was very general and did not require a certificate from an operator stating compliance with Rule 36.

FIRST RULE REVISION

On 1 February 1975 a tragic accident claimed the lives of several Denver City, Texas-area residents. An undetected release of residue acid gas containing lethal concentrations of H_2S from an injection system, combined with cool, calm weather conditions, caused the deaths of nine members of the public. Under a

legislative mandate, the RRC revised the rule, again with industry input, and expanded the rule's provisions. Rule 36 was rewritten to include materials specifications, contingency plan submission, training, and security. The revision established regulation of H_2S operations in drilling, workover, production, transportation, storage, and injection of gaseous or liquid hydrocarbon streams where the H_2S concentration is greater than 100 ppm.

An important requirement was the submission of a Certificate of Compliance, Form H-9, whereby the operator stated that all operations covered by the certificate were in compliance with Rule 36. Additionally, the revision required the reporting of a reasonable escape rate, a concentration of H_2S, and a calculated radius of exposure (ROE) for the 100 ppm and 500 ppm concentrations.

The Commission on 17 April 1975 approved this revision.

SECOND RULE REVISION

On 15 March 1976 the Commission approved another revision of the rule, effective 1 September 1976. This revision placed the rule in the form as it appears today. This revision was initiated by the regulated industry, and includes specific levels of compliance for different levels of risk. Other changes in this revision include:

- Specific methods of measuring the H_2S concentration of a system
- Referencing the materials provisions of NACE and API
- Detailed contingency plan specifications
- Allowances for the varied H_2S production concentrations, volumes, and public risks
- Injection provisions specifically requiring public hearing prior to approval

The revision established the future scheme of regulation the rule would require of operators. Some district-specific requirements were instituted[3] through practice, without amending the rule.

THIRD RULE REVISION

The rule was amended again, effective 15 September 1985. This revision added safety equipment and detection provisions to the drilling, workover, and plant provisions. **Also** provisions requiring the training of employees in the characteristics, hazards, and control of H_2S safety were added, along with the requirement for supervisory personnel to be trained in control procedures. An important provision requiring notification the RRC of any accident involving H_2S was included, too.

FOURTH RULE REVISION

Effective 7 April 1995 a provision was included that regulated intentional releases in much the same manner as accidental releases. This was the result of an intentional pipeline blowdown in south Texas that caused an adverse affect on the public. No deaths were caused, but the rule's loophole was closed regarding releases that were planned or intentional. The rule has not changed since this 1995 revision.

RULE 36 DISCUSSIONS

Rule 36 has worked as intended. Since the implementation of the current form of the rule in 1977, no deaths to the general public in Texas have occurred. The regulated industry has taken the intent of the rule, public safety, and implemented the requirements of the rule throughout the State of Texas. The impact of the rule is huge; there are over 400 facilities in the Permian Basin of west Texas that operate with active contingency plans as required.

PIPELINE SAFETY RULES

One issue with Rule 36 is that there are no pre-construction permits or public notice provisions. A series of events near Cedar Creek Reservoir in east central Texas spurred the introduction of legislation into the 75th session of the Texas Legislature.

Briefly, in 1996 a pipeline was to be built from a well capable of producing sour gas to a treating facility in Henderson County, Texas. The proposed route of the pipeline would have hindered evacuation of the local population in the event of a catastrophic failure of the pipeline due to the proximity of Cedar Creek Reservoir and the location of escape routes. The residents of this area were concerned and brought the matter to the attention of their State Representative. Legislation was introduced in the 75th Legislature to address the concerns of the residents by providing public notice and the opportunity to protest sour gas pipeline installations. The legislation, House Bill 3194[4], was passed by the legislature and signed into law by Governor George W. Bush, Jr. on 16 June 1997. This law established authority for the RRC to begin the rulemaking process for a new rule that requires an operator to obtain a Commission permit before beginning construction of **a** sour gas pipeline facility.

In response to this legislation, the Commission proposed new Statewide Rule 106, relating to sour gas pipeline facility construction permits[5]. This proposed rule defines sour gas pipelines, and specifies the conditions requiring a pre-construction permit. It is important to understand that for the purpose of this paper, the rule is a **proposal,** and is not finalized. The rulemaking authority enables the Commission to begin the rulemaking process, which is a series of statutorily required steps all rules must undergo. The discussions in this paper are in the context of the proposed rule being approved for adoption as written. All rules undergo this process and ultimately, many are revised in response to industry and public comments.

PROPOSED RULE 106

The text and discussion of Proposed Rule 106 is given in Appendix **A.**

The proposed Rule 106 defines a sour gas pipeline facility as a pipeline and associated equipment that:

- Contains 100 ppm H_2S or more, and
- Leaves the tract of production, and
- Is subject to Commission Rule 36' that regulates sour gas production and transportation.

It is important to understand that the proposed rule includes inter-lease transfer lines for sour CO_2 transportation. Therefore, the operator planning the installation or modification of a CO_2 flood should take the requirements of the rule into consideration.

However, the rule proposal also exempts certain pipelines and facilities. Pipeline and facilities are exempted from the requirements if:

- A system extension is not longer than five miles, and the "nominal" pipe size is not greater than six inches, and written notice is provided not less than 24 hours before construction is started.
- A *new* gathering system operates at less than 50 PSIG
- An *extension* of a gathering system operates at less than 50 PSIG and is currently in compliance with Rule 36
- A pipeline is classified as an interstate pipeline (regulated by the US Department of Transportation)
- Replacement or upgrade of a system does not increase the ROE to include a public area.

For purposes of this discussion, all pipelines and facilities discussed within are subject to all provisions of Commission Rule 36. The above exemptions are for the proposed Rule 106, not Rule 36.

To obtain a pre-construction permit for a pipeline, an operator must first file Forms PS-79 (Application for a Permit to Construct a Sour Gas Pipeline Facility) and T-4 (Application for Permit to Operate a Pipeline), and a plat of the proposed route with the Commission's Pipeline Safety Section. Note that the T-4 form may not be applicable in all situations. The Commission will then automatically assign a docket number to the application. **A** complete Form H-9 (Certificate of Compliance) and a contingency plan must also be filed with the Commission's district office to support the application.

Since the proposed Rule 106 requires public notice, a newspaper notice must be published in a paper of general circulation in each county of the proposed route. The notice requirements are specific, and the notice must contain the following information: Operator name and contact information, description of the proposed route, description of the ROE for the pipeline, a statement that the line will transport sour gas of more than 100 ppm H_2S, protest instructions, and a plat descriptive enough to show the route of the proposed pipeline.

When all supporting documentation is filed, the Commission district office will review the contingency plan, ROE maps, ROE calculations and assumptions, proposed monitoring and detection program, **H-9** Certificate of Compliance, materials provision compliance, public exposure risks, and other pertinent documentation. Critical to the district review is a physical inspection of the proposed route. In addition to verifying the applicant's information regarding public exposure, the district representative will review the route for public exposure risks that may not be readily apparent to the applicant. When the district representative has determined that the applicant's proposal will be in compliance with all aspects of Rule 36, a formal recommendation will be forwarded from the district to the Commission's Austin office recommending approval of the application to construct the facility.

If there have been no protests of the application, an administrative order is proposed by the Commission's examiner for approval by the Commission. Once signed by the Commissioners, the order granting the permit for construction is approved. Should there be a protest, the matter will then be set for hearing. **A** Commission examiner will preside over the hearing, issue a proposal, and present the matter to the Commission for approval or denial.

Once an order has been secured granting the pre-construction permit, the operator of the pipeline facility may begin actual construction of the line. An operator should consider the pre-construction permitting process early in the design stages of a project. Many design factors can influence the ROE and public exposure, and decisions made early in the process may reduce exposure risks and costs later in the project. Additionally, the time required for approval of a pre-construction permit may range from 60 to 90 days. Many of these delays are statutorily required, and some are a function of coordination between the applicant and the district office.

INJECTION WELL PERMITTING ISSUES

Each injection well in Texas must be permitted for it's specific fluid type. This includes and differentiates between fresh water, brackish water, produced water, CO_2, hydrocarbon gas, and H_2S. Each injection well must be permitted for "H_2S" if the injection stream contains more than 100 ppm H_2S. This fluid must be listed specifically on the injection permit for each well in a project. But to obtain a permit for H_2S injection, a certification of compliance with all aspects of Rule 36 is required. This is obtained from the Commission's District Office after a complete review of all aspects of the project, including public protection, contingency plans, and materials provisions compliance, and other aspects of Rule 36 have been reviewed. Only after this certification has been obtained, will the Commission's Underground Injection Control (UIC) section consider a permit application.

In some cases, where the injection well ROE encompasses a public area or public road, a rule-mandated public hearing will be required. This hearing places on record all protection measures taken by the operator. If successful, the operator then obtains a Commission order allowing injection of H_2S in a project. In projects where the ROE does not affect a public area or road, the Commission's District Office will provide the certification. In any case, the injection authority is valid only if the project is in compliance with Commission Rule 36.

PUBLIC SAFETY CONSIDERATIONS

When planning a CO_2 flood, engineers should look to the future regarding the need for possible sour gas injection. Sulfur emission regulations are becoming more stringent, and the injection of sour produced gas containing CO_2 is often the most attractive option for complying with these requirements. The requirements of Rule 36 and proposed Rule 106 must be carefully considered even early in the planning stages. Considerations include:

- The ROE for a sour injection well is generally assumed to be a function of the well's absolute open flow (AOF) and H_2S concentration, not the injection rate or volume.
- The ROE for a compressor is generally the maximum throughput of the compressor, as would be assumed if there was a catastrophic failure at the discharge manifold.
- The potential hazard for a sour injection stream is a function of the H_2S content, because the H_2S is a toxic material. The potential hazard for CO_2 is generally not addressed. CO_2 may become a suffocating gas under the proper conditions, and should be considered in a project's design.
- All sour gas injection lines have parallel ROE limits. By definition, the ROE of an injection line or a production line must be addressed if the line crosses a public road.

- **A** system should be designed with the materials provisions of Rule **36** in mind. should a future conversion to sour CO_2 injection be warranted. Sour service requires materials that satisfy the provisions of NACE Standard MR-01-75 and API RP-14E. Failure to do so may prevent the Commission from certifying compliance with Rule **36** for the facility, thus preventing the sour CO_2 injection.
- Sour facilities must have security to prevent public access. This includes sour CO_2 compression and injection facilities, if they are located in an area accessible to the public.
- Sour CO_2 releases must be considered in a contingency plan.
- **A** method of handling the produced gas in event of upset should be considered. Flares, including flares with auto-igniters and automatic fail-safe systems, should be viewed as essential. The location of a flare is of concern, too, as a flare can fail to ignite, causing H_2S gas to be released to the atmosphere.
- The installation of H_2S monitors may not always be the best detection method. Often, low-pressure fail-safe valves provide a greater degree of public protection.
- Injection flowline monitoring may be necessary to prevent the ongoing release of sour gas.
- It is often far more cost effective to remove a potential source of H_2S than monitor a source for public protection.

EXAMPLES

The following examples are actual cases where planning would have saved each operator considerable time and money. The examples have been made generic; however each case can be found in Commission files.

EXAMPLE: LACK OF FORWARD PLANNING

The operator of a large, successful San Andres formation CO_2 flood began to have capacity problems at the sweetening plant that serviced the unit. As CO_2 injection progresses, the produced gas contains more and more CO_2 as the breakthrough increases. Because of sulfur emission regulations, flaring the excess sour gas was not an option. This operator had processed all casinghead gas to remove H_2S prior to reinjection of the CO_2 stream. The operator had two options to consider at this point: first, major expansion of it's sweetening plant; and second, the reinjection ***of*** the sour CO_2 into the flood.

Unfortunately, the operator constructed the injection system with materials that are not suited to sour service. The injection lines, headers, and wells were constructed with materials appropriate for sweet CO_2 service. These materials do not comply with **NACE** or **API** standards for sour service. **As** a result, the Commission's District Office issued an opinion that the sour injection service would not comply with Rule ***36,*** and as a result, would not be approved. The only option available at this point, is expansion of the sweetening capacity at a cost of many millions of dollars.

The lack of planning limits the options available, and increases the cost to avail these options.

EXAMPLE: COST SAVINGS FROM PLANNING

A major operator was installing a pilot CO_2 flood utilizing horizontal injection wells in the San Andres formation of west Texas. This project would require the collection, compression, and reinjection of casinghead gas after CO_2 breakthrough. Because of the time-sensitive nature of the project, the operator elected to secure all permits and authorities prior to starting the CO_2 flood. The ROE of the compressor, injection lines, and injection wells was projected to be approximately 2000 ft. Numerous residents, roads, and public areas would be located within the compressor's ROE. Compliance with Rule 36, to protect the public from a release of gas containing H_2S, was a significant logistical and cost issue.

The operator presented their contingency plan proposal for approval. The Commission's review of the plan revealed that the protection of the public could be better achieved if the compression facility was relocated a greater distance from the population. The operator overlooked this in the planning of the facilities, and agreed to relocate the compressor. By relocating the compressor, the operator was able to eliminate several H_2S monitor stations, injection line leak monitoring, personnel costs for increased surveillance of the lease, and associated monitoring costs. The new location of the compressor removed approximately 50 residents from the ROE, and eliminated the need to purchase several dwellings that were unacceptably close to the facility. The protection of the public was increased at less cost to the operator.

EXAMPLE: EXPENSIVE PERMITTING PROBLEMS

A major operator initiated a sweet CO_2 pilot flood in a Pennsylvanian Canyon Reef formation in District 8A. The CO_2 flood was successful, however, there was no facility in the area capable of processing sour produced gas containing CO_2. Upon inquiry by the district office, the operator stated their practice was to route the sour produced gas back into their pilot project for reinjection. Permits allowing this sour injection were not in place; as a result, the operator was forced to shut-in the sour injection and the associated production. For the duration of the permitting process, which included Rule 36 injection approval by hearing, the operator lost approximately 800 bbl per day production. The shut-in period lasted over 30 days.

It is apparent that the lack of planning for the CO_2 breakthrough was an expensive omission. In addition, the loss of production was a significant cost, too.

EXAMPLE: EXPENSIVE **LACK** OF PERMITTING

A pipeline operator in Commission District 10 installed a new sour gas pipeline without going through the HB 3194 process of obtaining a pre-construction permit. This line was constructed after the date the law was effective.

This line was an 8-inch, 4-mile long new line. Operating pressure was approximately 200 PSIG. H_2S content was approximately 1200 ppm, with a throughput of approximately 6 MMCFD. The line crossed several public highways. The Commission's district office learned of the pipeline and immediately requested that the operator cease using the line until all permits were obtained. This caused a delay of approximately 10 months before the permits were in place and the line was approved for use.

Additionally, this incident could have subjected the operator to enforcement action because the operator failed to obtain the pre-construction permit. Typically enforcement actions assess fines of up to $10,000 per day per violation.

EXAMPLE: EXPENSIVE **LACK** OF FORESIGHT

A pipeline operator installed a new 27-mile, 12-inch and 16-inch sweet gas pipeline in west Texas. The operator installed the line for sweet service, knowing that within two years the line would be converted to sour residue gas service. In spite of the recommendation of the Commission's staff, the operator elected to not permit the line under the provisions of HB 3194, which would have required a pre-construction permit and hearing. The line was permitted and constructed as a sweet gas gathering line, however, the operator did elect to build the line to sour service specifications in anticipation of eventual H_2S service.

After operating the line in sweet service for almost two years, the operator decided to place the line into sour service, with an H_2S concentration of 7300 ppm and an operating pressure of 1000 PSIG. Gas throughput of **28** MMCFD was planned. The ROE for this line was approximately 2800 ft and encompassed 20 residences and several public highways, including one interstate highway. The District's Rule 36 compliance inspection revealed serious deficiencies in ability to detect an ongoing release of H_2S gas. To attain compliance for sour service, the District required the installation of pressure and rate monitoring via an electronic SCADA system. This additional monitoring would immediately notify the operator of a loss in pressure or decrease in throughput caused by rupture of the line and immediately initiate a shutdown and notification process. According to the operator, the required monitoring equipment caused the expenditure of $75,000 that could have been minimized if the line had been constructed to Rule 106 standards initially. Installation of the required equipment will necessitate bringing the line out of service for at least one day, also, which will cause the loss of revenues associated with the operation of the line.

EXCERPT FROM TEXAS REGISTER, VOL. 24, PAGE 6167, AUGUST 13,1999.

For the convenience of the reader, the text of the Proposed Rule 106, as found in the Texas Register, is presented:

Proposed Statewide Rule 106

TITLE 16. ECONOMIC REGULATION

Part 1. Railroad Commission of Texas

Chapter 3. Oil and Gas Division

16 TAC 53.106

The Railroad Commission of Texas proposes new §3.106, relating to Sour Gas Pipeline Facility Construction Permits, to add procedures for the required permit for construction of a sour gas pipeline facility. The proposed new section sets forth the requirements germane to the sour gas pipeline permit process. Proposed new §3.106 defines terms; requires a permit to construct a sour gas pipeline facility and identifies those sour gas pipelines which will be exempted from the new rule; explains the permit application process; states those items which will be required for approval of the permit; establishes guidelines for filing protests; provides for hearings in certain circumstances; and establishes deadlines for processing applications.

The commission proposes this new section to facilitate implementation of House Bill 3194, 75th Legislature, Regular Session, 1997, which enacted Texas Civil Statutes, Article 6053-4, which requires an operator to obtain a commission permit before beginning construction of a sour gas pipeline facility.

Rita Percival, Planning and Administration, Oil and Gas Division, has determined that for each year of the first five years the proposed 53.106 is in effect there will be fiscal implications for state government as a result of enforcing or administering the proposed new section. It is not possible to determine in advance that the commission will or will not be required to conduct a hearing on an application for a sour gas pipeline facility permit or, if it does, what the fiscal impact on state government would be. However, should a hearing be required, the commission will use current staff and will not hire additional personnel for that purpose. For each year of the first five years the proposed amendments are in effect there will be no fiscal implications for local governments as a result of enforcing or administering the proposed section.

Rita Percival, Planning and Administration, Oil and Gas Division, also has determined that the public benefit anticipated as a result of enforcing the proposed new section will be improved compliance with statutory permitting requirements, a consistent opportunity for affected persons to have information about proposed sour gas pipeline facilities before they are constructed, and an opportunity for an administrative hearing if an affected person files a protest or if an unprotested application is denied. There are anticipated additional economic costs to small businesses and to individuals as a result of the proposed new section, but it **is** not possible to determine the amount or the impact of that cost.

All persons planning to construct a sour gas pipeline facility will be required to comply, at a minimum, with the requirement to publish notice of the proposed facility; the cost will vary depending on the location and the number of the counties in which notice is published. Some additional cost may be incurred due to the short, but calculable, delay built into the application process by H.B. 3194. Applicants will be required to wait at least 30 days from the date notice is first published *to* learn if there is a protest, in which case a hearing is mandatory.

Even in the absence of a protest, if the commission's designee declines to recommend approval of the application, the applicant may either amend the application to cure the defects or may request a hearing on the application as filed. The public benefit anticipated as a result of the proposed new section is greater flexibility for the commission in carrying out its mandate to ensure the safe operations of pipeline facilities in the State of Texas.

Comments on the proposed new rule should be submitted to Terri Eaton, Assistant Director, Office of General Counsel, Railroad Commission of Texas, P.O. Box 12967, Capitol Station, Austin, Texas 78711-2967. Comments will be accepted for 30 days following publication in the Texas Register. For additional information call Terri Eaton at (512) 463-6077 or Charles Ross at (512) 463-6829.

The commission proposes the new section under Texas Utilities Code, §§121.201-121.205 and Texas Natural Resources Code, §§117.001-117.101, which authorize the commission to adopt safety standards and practices applicable to the transportation of gas and hazardous liquids and all gas and hazardous liquid pipeline facilities within Texas to the maximum degree permissible under, and to take any other requisite action in accordance with, 49 U.S.C. §60101, et seq. (West 1998).

Texas Utilities Code, §§121.201-121.205, Texas Civil Statutes, Article 6053-4, and Texas Natural Resources Code, §§117.001-117.101 are affected by the proposed new section.

Issued in Austin, Texas, on July 27, 1999

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§3.106. Sour Gas Pipeline Facility Construction Permit.

(a) Definitions. The following words and terms when used in this section shall have the following meanings, unless the context clearly indicates otherwise.

(1) Affected person--The owner or occupant of real property located in the area of exposure of the proposed route of a sour gas pipeline facility. For purposes of this definition, the owner shall be the owner of record as of the final day to protest an application. The occupant shall be the occupant as of the final day to protest an application.

(2) Applicant--A person who has filed an application for a permit to construct a sour gas pipeline facility, or a representative of that person.

(3) Application--An Application for a Permit to Construct a Sour Gas Pipeline Facility, and all required attachments.

(4) Area of exposure--The area within a set of circles constructed from each possible point of escape along a sour gas pipeline facility with a possible point of escape being the center of each circle and the radius of exposure being the radius of each circle.

(5) Construction of a facility--Any activity conducted during the initial construction of a pipeline including the removal of earth, vegetation, or obstructions along the proposed pipeline right-of-way. The term does not include:

(A) surveying or acquiring the right-of-way;

(B) clearing the right-of-way with the consent of the owner;

(C) repairing or maintaining an existing sour gas pipeline facility; or

(D) installing valves or meters.

(6) Extension of a sour gas pipeline facility--An addition to an operating sour gas pipeline facility regardless of ownership of the addition.

(7) Nominal pipe size--The industry convention for naming pipe based on the approximate outer diameter. Six-inch nominal size pipe corresponds to pipe with an outside diameter of six and five-eights inches. The inner diameter of six-inch nominal pipe varies based on the weight and grade of the pipe.

(8) Person--An individual, partnership, firm, corporation, joint venture, trust, association, or any other business entity, a state agency or institution, county, municipality, school district, or other governmental subdivision.

(9) Radius or radii of exposure--The 100 parts per million radius of exposure as calculated in §3.36(c)(1)-(3) of this title (relating to Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas) for the portion of the sour gas pipeline facility extending off the tract of production.

(10) Sour gas pipeline facility--A pipeline and ancillary equipment that:

(A) contains a concentration of 100 parts per million or more of hydrogen sulfide;

(B) leaves the tract of production; and

(C) is subject to the requirements of $3.36 of this title.

(11) Tract of production--The surface area which overlies the strata from which oil, gas, or other minerals containing sour gas are produced if such area is treated by the Oil and Gas Division of the commission as a single tract.

(b) Permit Required; Exceptions. No construction of a facility shall commence within this State without a permit if the facility is initially used as a sour gas pipeline facility except for the following:

(1) an extension of an existing sour gas pipeline facility that at the time of construction of the extension is in compliance with $3.36 of this title, (relating to Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas) if:

(A) the extension is not longer than five miles;

(B) the nominal pipe size is not larger than six inches; and

(C) the operator causes to be delivered to the Pipeline Safety Section, Gas Services Division, written notice of construction of the extension not later than 24 hours before the start of construction;

(2) a new gathering system that operates at a working pressure of less than 50 pounds per square inch gauge;

(3) an extension of a gathering system which operates at a working pressure of less than 50 pounds per square inch gauge;

(4) an interstate gas pipeline facility, as defined by 49 U.S.C. $60101, that is used for the transportation of sour gas; or

(5) replacement of all or part of a sour gas pipeline facility if the area of exposure of the replaced portion of the facility does not increase so as to include a public area, as defined in §3.36(b)(5) of this title, not included in the area of exposure of the portion of the replaced sour gas pipeline facility.

(c) Filing and Assignment of Docket Number. Upon filing of an application with the Oil and Gas Division, staff will assign a docket number to the application and will notify the applicant of the assigned docket number. Thereafter, all documents relating to that application shall include the assigned docket number.

(d) Application. A complete application consists of:

(1) a properly completed application Form PS-79, with the original signature, in ink, of the applicant;

(2) a plat which meets the requirements of subsection (f)(4) of this section and identifies the boundaries of surveys and blocks or sections as appropriate within the area of exposure;

(3) a copy of the applicant's Application for Permit to Operate a Pipeline, Form T-4, if applicable, including all attachments;

(4) a copy of the completed application for a Statewide Rule 36 Certificate of Compliance, Form H-9, including any attachment required under $3.36 of this title (relating to Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas); and

(5) proof of notice evidenced as follows:

(A) a receipt from each county clerk with whom an application form and plat is required to be filed pursuant to subsection (e)(1) of this section; and

(B) the full page(s) of the newspaper containing the published notice required under subsection (e)(2) of this section including the name of the paper, the date the notice was published, and the page number.

(e) Notice. For each county that contains all or part of the proposed route of a sour gas pipeline facility, the applicant shall:

(1) cause to be delivered to the county clerk no later than the first date of publication in that county a copy of the items described in subsection (d)(1)-(3) of this section;

(2) publish notice of its application in a newspaper of general circulation in each county that contains all or a portion of the route of the proposed sour gas pipeline. Such notice shall meet the requirements of subsection (f) of this section and be published in a section of the newspaper containing news items of state or local interest.

(f) The published notice of application shall be at least three inches by five inches in size, exclusive of the plat, and shall contain the following:

(1) the name, business address, and telephone number of the applicant and of the applicant's authorized representative, if any;

(2) a description of the geographic location of the sour gas pipeline facility and the length of the radius of exposure, to the extent not clearly identified in the plat required to be published in subsection (f)(4) of this section;

(3) the following statement, completed as appropriate: This proposed pipeline facility will transport sour gas that contains 100 parts per million, or more, of hydrogen sulfide. A copy of application forms and a map showing the location of the pipeline is available for public inspection at the offices of the (insert County name) County Clerk, located at the following address: (insert address of county clerk). Any owner or occupant of land located within the 100 ppm radius of exposure of the proposed sour gas pipeline facility desiring to protest this application can do so by mailing or otherwise delivering a letter referring to Docket Number (insert docket number) and stating their desire to protest to: Docket Services, Office of General Counsel, Railroad Commission of Texas, P.O. Box 12967, Austin, Texas 78711-2967. Protests shall be in writing received by Docket Services not later than (specify 30th day after the first date notice of the application is to be published). The letter shall include the name, address, and telephone number of every person on whose behalf the protest is filed and shall state the reasons each such person believes that he or she is the owner or occupant of property within the area of exposure of the proposed pipeline facility. It is recommended that a copy of this notice be included with the letter; and

(4) a plat identifying:

(A) the location of the pipeline facility;

(B) area of exposure;

(C) compass;

(D) scale;

(E) geographic subdivisions appropriate for the scale; and

(F) by inset or otherwise, landmarks or other features such as roads and highways in relation to the proposed route of the sour gas pipeline. These landmarks or other features shall be of sufficient detail to allow a reasonable individual to ascertain whether he or she is likely to own or occupy property that is within the area of exposure of the proposed sour gas pipeline. Examples of acceptable plats are included in this subsection as Figures 1 and 2.

Figure 1: 16 TAC §3.106(f)(4)

Figure 2: 16 TAC §3.106(f)(4)

(g) Protests. Affected persons have standing to file a protest to an application. **All** such protests shall:

(1) be in writing and filed at the commission no later than the 30th day after the notice is published in a newspaper in the county in which the person filing the protest owns or occupies real property;

(2) identify the docket number of the application being protested;

(3) state the name, address, and telephone number of every person on whose behalf the protest is being filed; and

(4) include a statement of the facts on which the person filing the protest relies to conclude that each person on whose behalf the protest is being filed is an affected person, as defined in subsection (a)(1) of this section.

(h) Division Review.

(1) Within 14 days of receipt of the application, the commission's designee will provide written notice to the applicant that the application is either complete and accepted for filing, or incomplete and specify the additional information required for acceptance. The application must be completed within 30 days of notification that the application is incomplete or such longer time as may be requested by the applicant, in writing, and approved by the commission's designee. If the application is not completed within the specified time period, the commission's designee shall send notice of intent to deny the application to the applicant. Within ten days of issuance of a notice of intent to deny the application for failure to complete the application, the applicant may request a hearing on the application as it exists at that time. If a request for hearing is not filed within ten days of issuance of a notice of intent to deny the application for failure to complete the application, the application shall be dismissed without prejudice by the commission's designee.

(2) The commission's designee shall make a written recommendation as to whether the materials to be used in and method of construction and operation of a proposed sour gas pipeline facility comply with the rules and safety standards of the commission if the application is not protested, by the latter of the 14th day after the end of the 30-day protest period or the 14th day after the day notice of a complete application is issued.

(3) If, pursuant to subsection (i) of this section, a hearing is held the staff may introduce evidence relating to the materials to be used in and method of construction and operation of a proposed sour gas pipeline facility.

(4) In determining whether or not the materials to be used in and method of construction and operation of a proposed sour gas pipeline facility comply with the rules and safety standards of the commission, relevant provisions of §3.36 and §3.65 of this title (relating to Oil, Gas, or Geothermal Resource Operation in Hydrogen Sulfide Areas, and Pipeline Permits Required, respectively) shall be considered. And, if applicable, §§7.70-7.73 of this title (relating to Natural Gas Pipeline Safety Rules) and §§7.80-7.87 of this title (relating to Hazardous Liquids Pipeline Safety Rules) shall also be considered.

(5) If no affected person files a protest with the commission by the 30th day after publication of notice of application was published, the commission's designee shall either make a written recommendation that the permit be issued, that the permit be conditionally granted, or that the permit be denied. If the commission's designee recommends that the permit be conditionally granted or be denied, the reasons for such recommendation shall be explained. If the commission's designee recommends that the application be conditionally granted or be denied, the applicant shall have a right to a hearing upon written request received no later than 15 days after the date of issuance of notice of conditional grant or denial.

(i) Hearing.

(1) A hearing shall be convened to consider an application for a sour gas pipeline construction permit if:

(A) a protest is timely filed by an affected person;

(B) a request is timely filed by an applicant; or

(C) the commission so elects on its own motion.

(2) The Office of General Counsel shall assign an examiner who shall conduct a hearing in accordance with the procedural requirements of Texas Government Code, Chapter 2001 (the Administrative Procedure Act), and Chapter 1 of this title (relating to the General Rules of Practice and Procedure).

(3) The commission shall convene a hearing not later than the 60th day after a protest is filed, the applicant submits a request for hearing, or the commission gives notice of intent *to* convene a hearing on its own motion. If the application is not complete as of the date the request for hearing is filed or notice of hearing issued, the 60-day time period for convening a hearing shall not begin to run until such time as notice of a complete application is issued unless the hearing is held pursuant to the provisions of subsection (h)(1) of this section. If the hearing is held pursuant to the provisions of subsection (h)(1), the hearing will be held within 60 days of receipt of a request for hearing.

(4) In any hearing convened to consider an application, the applicant has the burden of showing that the materials to be used in and method of construction and operation comply with the applicable rules and safety standards adopted by the commission.

(j) Order.

(1) An order approving an application shall include a finding that the materials to be used in and method of construction and operation of the facility comply with the applicable rules and safety standards adopted by the commission. The order shall also grant the permit required under §3.65 of this title (Rule 70, Relating to Pipeline Permits Required).

(2) An order denying an application shall state the reason or reasons for the denial.

(3) In the case of an application for which a hearing is conducted, the commission will render a decision not later than the 60th day after the date on which the hearing is finally closed.

(4) If no hearing is held on an application, the commission will render a decision not later than the 60th day after the staff prepares its written recommendation in accordance with subsection (h) (2)(A) and (h)(4) of this section.

This agency hereby certifies that the proposal has been reviewed by legal counsel and found to be within the agency's legal authority to adopt.

Filed with the Office of the Secretary of State, on July 28, 1999.

Mary Ross McDonald
Deputy General Counsel
Railroad Commission of Texas

Earliest possible date of adoption: September 12, 1999

SUMMARY

As presented here, the lack of planning is likely to increase the cost and time required to institute a sour CO_2 injection project. The injection of sour CO_2 is often environmentally prudent and cost-effective. The operator should understand that significant regulations, designed to ensure the safety of the general

public, are in place and decisions affecting the installation of sour CO_2 floods should include such regulatory requirements.

The Railroad Commission's district offices are often a good place to enquire about Rule 36 and proposed Rule 106, and the district staff often may have cost-saving and public safety-enhancing ideas.

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