

Current Rule 118 Fallacies:

- Advisory Rule rather than Requirement.
- Exempted certain tanks with H₂S concentrations of < 1000 ppm. The new proposed rule will be <300 ppm.
- Exempted certain facilities with H₂S concentrations of < 500 ppm. The new proposed rule will be <100 ppm.
- Exempted all facilities from the following requirements if the H₂S fraction of the gas stream equated to less than 10 MCF/Day:
 - No safety devices or procedures required.
 - No signs or fencing required.
 - No Contingency Plans required.

Current Rule

Fallacy of 10 MCF Exemption

Current Rule Exempts any Facility with an H₂S Volume Fraction less than (<) 10 MCF/day.

Example:

- 1,000 mcf/day @ 10,000 ppm (1%) of H₂S = 10 mcf/day of pure H₂S.

- 10 mcf/day equates to the following Radius of Exposures (ROE):

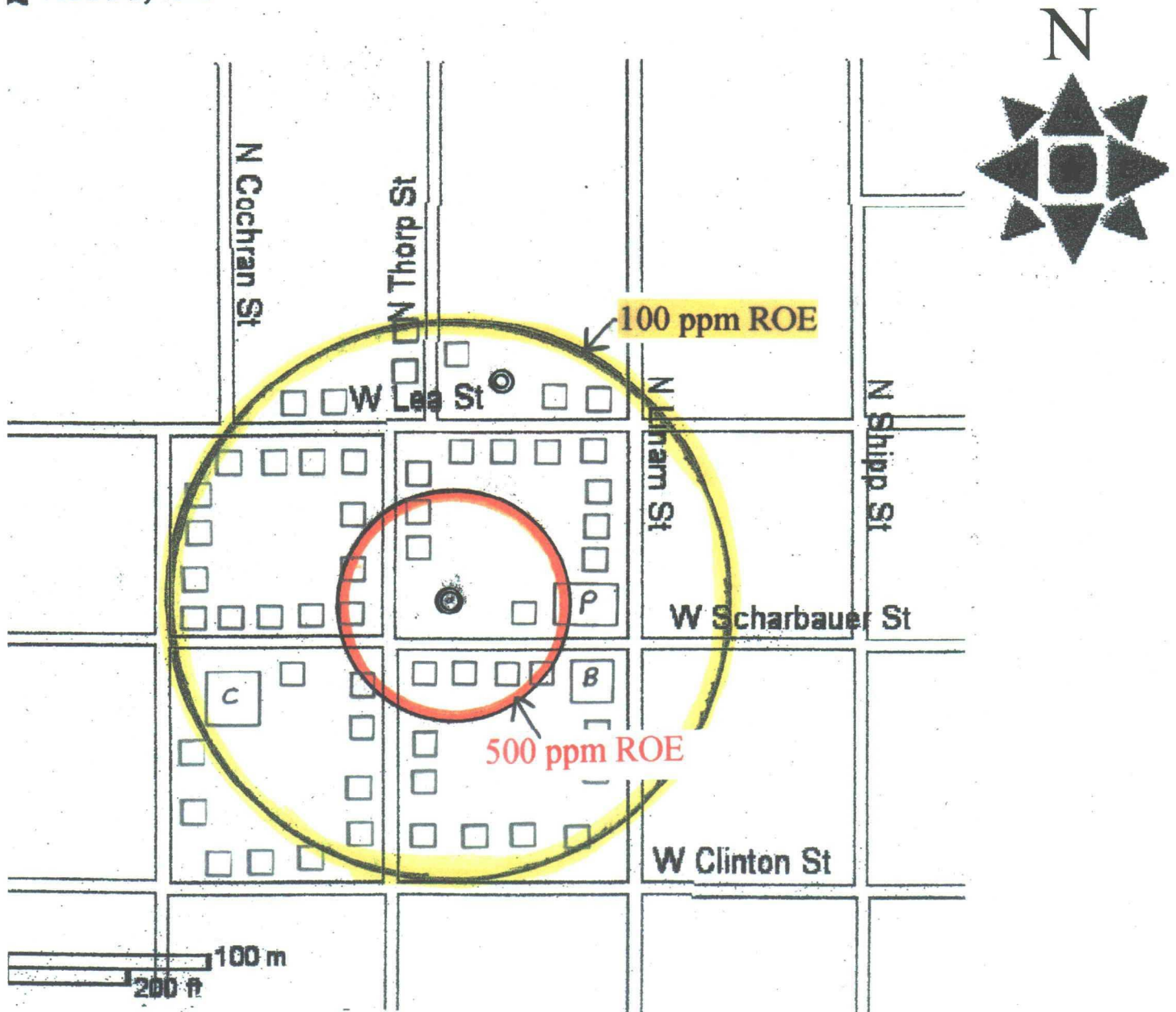
500 ppm @ 200 feet

100 ppm @ 450 feet

Next slide reflects the impact of a 10 mcf/day release for the example given above. All the houses, business and public meeting places may not have been protected under the current rule.

Areas inside of the circles below are exempted from public safety contingency plans and other safety control requirements under the current rule 118.

★ Hobbs, NM



Proposed Rule

General

subsection A.

Identifies the Hazards and Characteristics
of Hydrogen Sulfide H₂S

Proposed Rule

Scope

subsection B.

Provides for Public Safety in areas where
potentially hazardous volumes of H₂S may exist
and defines who is regulated by this rule.

Proposed Rule

Key Definitions

subsection C.

Potentially Hazardous Volumes (PHV)

Volume of H₂S gas of such concentration that:

- 100 ppm Radius of Exposure (ROE) includes a Public Area.
- 500 ppm Radius of Exposure (ROE) includes a Public Road.
- 100 ppm Radius of Exposure (ROE) is in excess of 3,000 feet.

Proposed Rule

Key Definitions

subsection C. Cont'd

Radius of Exposure (ROE):

An imaginary circle constructed around a point of escape, the radius of which is calculated using the Pasquill-Gifford equation which is derived from the well know Gaussian Plume Model assuming a continuous source.

Example Equation for determining the distance in feet of a ROE of 100 ppm H₂S.

$$X(\text{feet}) = \{1.589 \times \text{H}_2\text{S ppm} \times \text{Gas flow}\}^{.6258}$$

Other Models or methods may be used if approved by OCD.

Proposed Rule

Determination of H₂S Risk

subsection D.

Requirements:

- Requires qualified testing of gas systems.
- Allows operators to submit previous data if not over one year old.
- All existing wells are exempt from testing if representative data is available.
- Facilities >100 ppm must calculate ROE.
- If ROE meets definition of PHV then Test data and ROE calculations must be submitted electronically within 180 days.
- Recalculation Required.

If Facilities <100 ppm, then facility is exempted from this Rule.

Proposed Rule

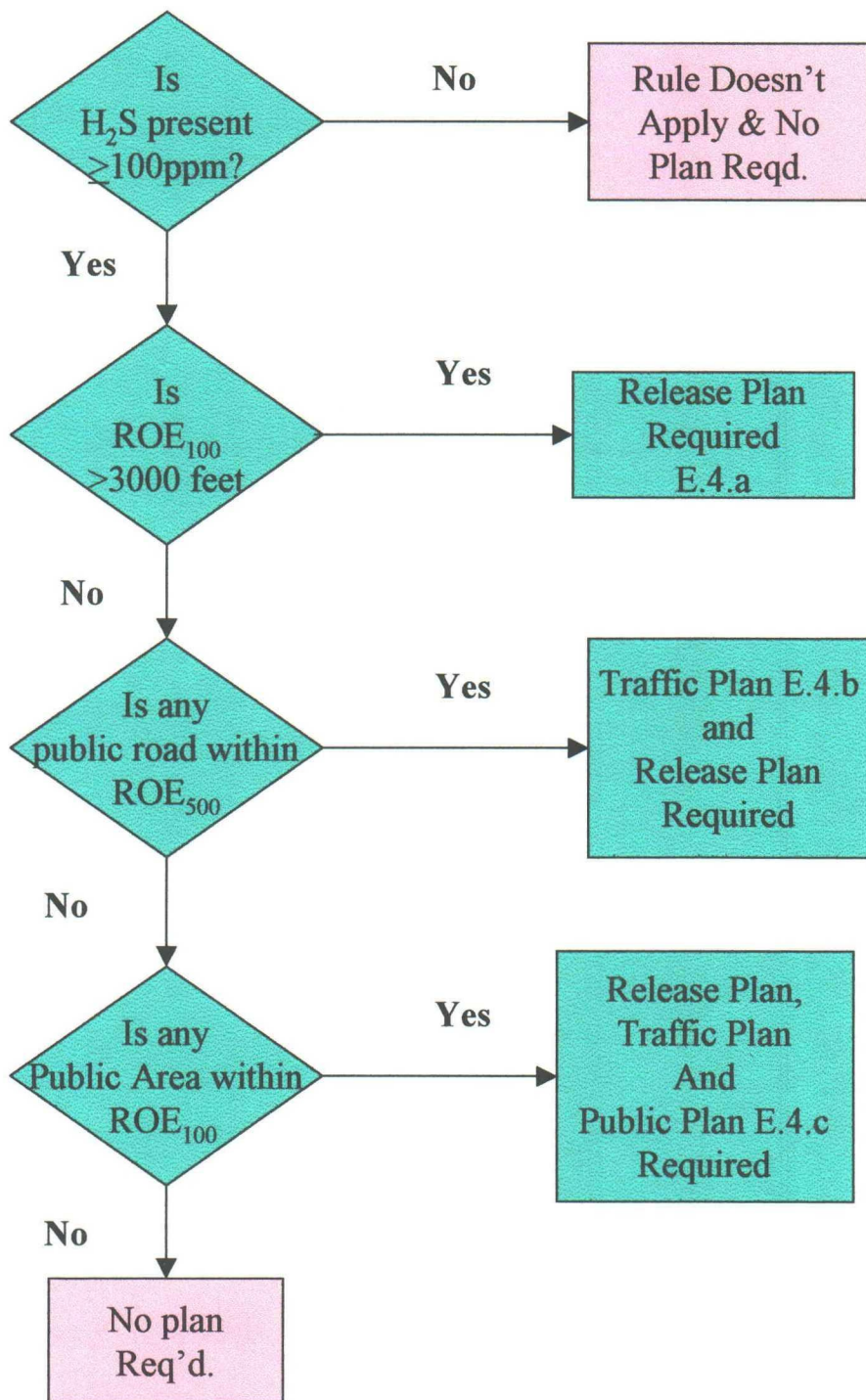
H₂S Contingency Plans

subsection E.

- **General:**
 - To alert and protect people at risk
 - To control, monitor and abate the discharge
- **When Required:**
 - Any time a PHV may be present
- **Input from Emergency Response Authorities and**
OCD Required

Hydrogen Sulfide (H₂S) Contingency Planning Flowchart

The H₂S Contingency Plan can be part of a locations Emergency Response Plan



H₂S Contingency Plan Elements

H₂S Contingency Plan Elements

Proposed Rule Release Plan subsection E.4.a.

- Immediate action Plan
- Call List- of emergency personnel
- Plat or maps showing ROE's
- Call List- names and phone numbers of operator personnel to be contacted

Proposed Rule

Traffic Plan

subsection E.4.b.

- Must contain all of the elements of a release plan and the following additional elements:
 - Instructions and procedures for alerting and coordinating emergency response authorities for Public Roads.
 - Plat or maps showing ROE's and all involved Public Roads.
 - Traffic plan to divert and safely remove any public member.

Proposed Rule

Public Plan

subsection E.4.c

- Must contain all of the elements of a release plan and the following additional elements:
 - Detailed plans of action to alert and protect personnel at risk and emergency response authorities.
 - Call list [ambulance services, hospitals, fire depts., doctors, contractors, or public agencies as appropriate]
 - Coordination of response pursuant to NM HMER Plan (i.e. NM State Police)
 - Plat or map of the facility
 - Names and phone numbers of affected persons
 - Advance briefing of entire call list
 - Additional support information

Proposed Rule
H₂S Contingency Plans
subsection E. cont'd

- OCD may impose additional requirements
- Submission of Plans required:
 - Submit to OCD electronically
 - Submit to LEPC
 - Within 180 days of determining ROE
 - Plans may be submitted with APD's
- Penalties may be imposed for Failure to Submit
- Annual Reviews are required
- Plans must be made available

Proposed Rule
H₂S Contingency Plans
subsection E. cont'd

Activation Levels

- Release of any PHV
- If sustained concentration > 50 ppm at the property line of any facility

Proposed Rule

Drilling, Workover and Servicing Operations

subsection F.

- API standards incorporated.
- Minimum standards required:
 - Before Commencing Operations:
 - Operators shall complete an H₂S Contingency Plan where required.
 - Training shall be completed.
 - All related safety equipment and warning systems shall be operational.
 - Detection and monitoring equipment is not required until drilling is within 500 feet of anticipated zone containing H₂S > 100 ppm.
- Egress Routes shall be maintained.

Proposed Rule
Drilling, Workover and
Servicing Operations
subsection F. (minimum standards cont'd.)

- Operators shall provide H₂S detection and monitoring equipment as follows:
 - Automatic, visible and audible alarms to activate at 20 ppm.
 - Detection systems shall be calibrated, tested and recorded monthly.
- Wind indicator and warning signs required.
- Operating Practices where H₂S >100 ppm.
 - Circulating media shall be mud.
 - Alternate methods allowed if approved.
 - Flare, ignition, and supplemental fuel systems required.
 - H₂S rated remote controlled choke, valves, and BOP stack arrangements required when a PHV may be present in a Public Area.

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Proposed Rule
Drilling, Workover and
Servicing Operations
subsection F. (minimum standards cont'd.)

•Operating Practices where $H_2S > 100$ ppm
continued:

•Mud programs require:

- De-gassing
- Flaring
- Equipment that is designed and rated for H_2S operations
- Capability of well control.

•Well Testing: (drill stem)

- Drill stem testing must be conducted during daylight hours.
- Formation fluids discharged into closed chamber only.
- Operators shall notify OCD 24 hours in advance of testing if an H_2S contingency plan is required.

Proposed Rule

Production Facilities and Down Stream Facilities.

Subsection G.

- API standards incorporated.
- Minimum standards required where $H_2S > 100$ ppm.
 - Operators shall complete an H_2S Contingency Plan where required.
 - Danger or warning signs required.
 - Signs shall meet certain standards.
 - Located within 50 feet of the facility.
 - If fenced, signs at the gates will suffice.
 - Flow lines shall have signs where they cross public roads.
 - Fencing and gates required:If facility is located in a Public Area or within $\frac{1}{4}$ mile of a residence, school, church, park, playground, school bus stop or place of business.
 - Fencing shall meet certain standards.
 - Gates shall remain locked when unattended.

Proposed Rule
Production Facilities and Down Stream
Facilities.

Subsection G. (minimum standards cont'd.)

- Wind direction indicators required.
- Secondary well controls required when any well's ROE of 100 ppm incorporates a Public Area.
- Wells shall have a secondary means of immediate well control such as:
 - Appropriate christmas tree.
 - Downhole completion equipment.
 - Equipment shall allow accessibility under pressure.

Proposed Rule
Production Facilities and Down Stream
Facilities.

Subsection G. (minimum standards cont'd.)

- Automatic safety valves or shutdown systems required when any facility's ROE of 100 ppm incorporates a Public Area.
- Tank or vessels containing >300 ppm H_2S are subject to the following additional requirements.
 - Stairs and ladders shall be chained or marked to restrict entry, unless site is fenced then signs on gates will suffice,
 - Danger or warning signs required.
 - Signs shall meet certain standards.
 - Located within 50 feet of the facility.
- Compliance Schedule: All facilities shall meet the requirements of this subsection within one year of the effective date of this rule.

Proposed Rule Personal Protection and Training subsection H.

Requires all persons responsible for the implementation of any H₂S contingency plan to be trained in the following areas:

- Hydrogen Sulfide hazards
- Detection of Hydrogen Sulfide
- Personal Protection
- Contingency procedures

Proposed Rule Standards for Equipment Exposed to H₂S subsection I.

Requires operators to:

- Choose equipment with consideration for both the the H₂S working environment and stress.
- Incorporate NACE Standards
- Allows corrosive protection by chemical inhibition.

Proposed Rule

Exemptions

subsection J.

Exemptions:

It is proposed that the wording of this subsection be changed to:

“An exemption to the requirements of this Section may be granted by petitioning the director. Any such petition shall provide specific information as to the circumstances that warrant approval of the exemption requested and how the public safety will be protected. Submission of a safety plan required by other governmental agencies may accompany the petition for exemption. The director, after considering all relevant factors, may approve an exemption if the circumstances warrant.”

Proposed Rule

Release

subsection K.

Activation of Contingency Plan Required:

- Where the potential exists for exposure to a PHV.
- Where a concentration of H_2S is >50 ppm at the property line of any facility.

OCD Notification:

- Within one hour of discovery, if practical.
- File a Release report (C-141) within 15 days.

Proposed Rule

Corrective Actions

subsection L.

OCD may require corrective action if
necessary to:

- Maintain control of a well, or any other facility,
or to safeguard public safety.