

RULE 424. GEOTHERMAL EMISSIONS STANDARDS

Adopted: 09/05/74 Revised: 02/09/81, 07/06/95

- A. No person shall discharge into the atmosphere from any geothermal operation, sulfur compounds, calculated as sulfur dioxide (SO₂), in excess of 1,000 ppm.
- B. No person shall discharge into the atmosphere from any geothermal power plant more than 100 grams/MwHr of hydrogen sulfide, H₂S.
- C. No person shall discharge into the atmosphere from any geothermal well, including well drillings, well reworking and well testing, more than 2.5 kg/hr/well of hydrogen sulfide H₂S.
- D. No person shall discharge into the atmosphere from any miscellaneous steam supply operation more than 2.5 kg/hr/ source of hydrogen sulfide H₂S.
- E. Upon an unscheduled outage, an operator shall, within four (4) hours or less, reduce H₂S emissions: (1) by 90% or more for dual units or, (2) by 65% or more for single units or when both units of a dual unit system have a simultaneous outage or, (3) to not more than 15 kg/hr. For scheduled outages, the same emissions standards shall be met within one (1) hour or less.
- F. A summary of the data required to determine compliance with applicable provisions of this rule shall be submitted to the Air Pollution Control Officer. This summary shall be presented in the manner, frequency and form as prescribed by the Air Pollution Control Officer.
- G. DEFINITIONS
 - 1. Gross Megawatt Hour (MwHr) means the gross amount of electrical generating capacity of a power plant as guaranteed by the turbine generator manufacturer, prior to internal plant requirements, expressed in megawatt hours.
 - 2. Miscellaneous Steam Supply Operation means any operation associated with providing steam for a geothermal power plant, excluding well drilling, well reworking, and well testing.
 - 3. Active Developer means any entity with one or more valid Permit(s) to Operate for a geothermal well utilized for electrical power generation within the KGRA.
- H. Notwithstanding the provisions of Sections A and C, the active developers in a KGRA may jointly petition the Air Pollution Control Officer to establish a Real-time Monitoring Program (RMP) to determine allowable H₂S emissions from well drilling, testing, return to production and clean-out. This petition must include an agreement signed by all the active developers in the KGRA to comply with the RMP requirements. The agreement must include a method of assigning responsibility if any requirement of the RMP is violated, and acceptance of the higher well authority to construct and permit renewal fees as outlined in Rule 301. Schedule of Permit Fees, Schedule 7.

The RMP shall be developed and implemented by the active developers in a KGRA, and shall include the following enforceable provisions:

1. All active developers shall continuously record well venting to determine the H2S emission rate and venting duration from all wells subject to the program.
2. All active developers shall continuously record meteorological data sufficient to estimate H2S ambient impacts through dispersion modeling techniques.
3. All active developers shall continuously record ambient H2S concentrations through ambient monitoring techniques to help monitor program compliance.
4. All active developers shall stay below venting limits for the subject wells under:
 - a. a routine venting plan based on an acceptable range of H2S venting rates from all sources and meteorological conditions that can be used routinely without causing ambient impacts to exceed 15 parts per billion by volume (ppbv) H2S in any area where the public has access, and/or
 - b. a non-routine venting plan that utilizes real-time meteorology and venting rates from all sources in a dispersion model to ensure that ambient impacts will not exceed 15 ppbv H2S in any area where the public has access.
5. In the Coso KGRA, during Naval Air Weapons Station approved Native American visits all active developers will utilize real-time meteorology and venting rates from all sources in a dispersion model to ensure that ambient impacts will not exceed 15 ppbv H2S at the upwind boundary of the visitation area.
6. All active developers shall monitor and control worker exposure to H2S so that it does not exceed the permissible exposure limits established by Cal-OSHA.
7. If hourly average H2S readings at any RMP-designated ambient monitor site;
 - a. exceeds an average of 15 ppbv for any one hour period, all active developers shall reduce well venting so that the one-hour average reading is reduced to less than 15 ppbv within one hour, or
 - b. exceeds an average of 18 ppbv for any one hour period, all active developers shall suspend well venting until the hourly average ambient H2S reading is reduced to less than 15 ppbv.

If the APCO grants the petition for an RMP, all the terms of the RMP automatically become permit conditions of all existing well authorities to construct and permits to operate held by active developers in that KGRA. If wells are to be added later, the developer of the well must submit with the application for authority to construct an updated venting plan using worst-case assumptions for the new well emissions.

The RMP will be revoked if any active developer withdraws from the agreement, or if a new active developer does not wish to join the agreement. The APCO can, upon 30 days notice to all developers, withdraw permission for the RMP for any reasonable cause.