

## **Regulatory and Policy Implications for Beneficial Recovery of Landfill Gas**

**by Wayne Lee**

Landfill gas is created when waste in a landfill decomposes. This gas is about 50 percent methane, also known as natural gas, and 45 percent carbon dioxide. The gas can be captured, converted, and used as an energy source. Using landfill gas as fuel helps to reduce odors and other hazards associated with landfill gas emissions. So, a good solution to the landfill gas problem is to collect it and use it to produce electricity.

House Bill 3415 went into effect in 2001 and encourages the development and use of landfill gas for state energy and environmental purposes. The bill added Section 361.040 to Chapter 361 of the Health and Safety Code, and the bill took effect on September 1, 2001. An important aspect of the bill is the requirement for the TCEQ to “give priority to processing applications for registrations.”

Current commission rules in 30 TAC §330.70 require a municipal solid waste registration for new facilities that recover landfill gas. These facilities are termed Type IX facilities.

The bill was authored by State Representative Ruth Jones McClendon of San Antonio.

In accordance with the directive from the bill, the Municipal Solid Waste Permits Section has given priority to reviewing applications for new Type IX gas recovery facilities. Additionally, two new policies have been implemented to streamline the application requirements and review requirements. Staff that review these applications have been hired and fully trained. The staff of the Municipal Solid Waste Permits Section have conferred with numerous consultants, landfill operators, and energy companies as well as the Municipal Solid Waste Advisory Council regarding the application requirements. The TCEQ staff have made special efforts to encourage the development of new landfill gas recovery facilities.

According to Texas House Bill 3415, a progress report to the legislature will be due on November 1, 2002, 2004, and 2006 regarding the status of the development of landfill gas in the state. The report must include:

- (a) a summary of the activities of the agencies to fulfill the requirements of this Act;
- (b) identification of landfills with gas recovery and use projects;
- (c) the amount of gas produced from landfill gas recovery projects;
- (d) the amount of electricity generated from landfill gas recovery projects;
- (e) the environmental benefits of the landfill gas recovery and use; and
- (f) any legal, administrative, economic or other identified obstacles to further development and use of landfill gas.

In accordance with one of the directives of the bill the Municipal Solid Waste Permits Section staff have establishing a clearinghouse of information on landfill gas development and use.

## **Applicable Regulations:**

- I. Type IX is defined in 30 TAC 330.41(j)
  - A. Refers to requirements in 30 TAC 330.4 (Permit Required)
  - B. Requirements that may be interpreted as applicable are:
    1. 330.4(a) permit or other authorization required
    2. 330.4(b) E.D. may seek recourse if not unauthorized
    3. 330.4(m) any change to a permit requires a permit amendment or modification (although not following full public notice requirements for amendments or modifications)
- II. Registration Application [30 TAC 330.70(e)]
  - A. Must submit 4 complete copies containing all items in 305.45, 330.51(a)(1), and 330.52
  - B. Application format [330.70(e)(2), 330.51(e), 330.52(b)(1-2)]
    1. 3-ring loose-leaf binders
    2. 8 ½ x 11 inches white paper (double sided okay)
    3. 11 x 17 inches drawing pages
    4. page number, revision number, date
    5. title page
    6. table of contents
  - C. General Information
    1. MSW Part A Application Form (will satisfy all of the following)  
[30 TAC 305.45(a)(1-5)]
      - a. name, mailing address, and location of the facility for which the

application is submitted

- b. the ownership status as federal, state, private, public, or other entity
- c. applicant's name, mailing address, and telephone number
- d. a brief description of the nature of the business
- e. the activities conducted by the applicant which require a permit
- f. Appointments for signatory to application and engineer  
[330.52(b)(10)]

- g. A listing permits or construction approvals received or applied for under the following programs [30 TAC 305.45(a)(7)(A-J)] :

- (1) Hazardous Waste Management program under the Texas Solid Waste Disposal Act
- (2) Underground Injection Control (UIC) Program under the Texas Injection Well Act
- (3) National Pollutant Discharge Elimination System (NPDES) Program under the Federal Clean Water Act (CWA) and Waste Discharge Program under the Texas Water Code, Chapter 26
- (4) Prevention of Significant Deterioration (PSD) Program under the Federal Clean Air Act
- (5) Nonattainment Program under the Federal Clean Air Act
- (6) national emission standards for hazardous pollutants (NESHAPS) preconstruction approval under the Clear Air Act

- (7) ocean dumping permits under the Marine Protection Research and Sanctuaries Act
  - (8) dredge or fill permits under of the Federal Clean Water Act
  - (9) licenses under the Texas Radiation Control Act
  - (10) other environmental permits
- 2. Property owner affidavit [330.52(b)(7)]
- 3. Applicant legal status [330.52(b)(8)]
- 4. Evidence of solid waste management competency [330.52(b)(9)]
- 5. Other agency coordination or review letters [330.51(b)(4-10)]
  - a. floodplain
  - b. NPDES info
  - c. TNRCC letter re Clean Water Act
  - d. FAA letter re airports
  - e. TxDOT
  - f. wetlands determination
  - g. endangered species
  - h. Texas Antiquities Committee review letter
  - i. Regional solid waste plan
- D. Supplementary Technical Report [330.70(e)(4), 330.52(b)(3), 30 TAC 305.45(a)(8)(A)]
  - 1. P.E. seal in accordance with TEPA 330.51(d). Must use form provided as 30 TAC 330.70(e)(9)(B)
  - 2. Maps and Drawings General [330.51(f)]

- a. title block, revision block, date
  - b. bar scale
  - c. drawing number, page number
  - d. north arrow
  - e. appropriate legends
3. Maps [330.52(b)(4)(A), 330.70(e)(4), 305.45(a)(6)]
- a. prevailing wind direction and wind rose
  - b. all known water wells, structures, and inhabitable buildings within 500 feet of the registration boundary.
  - c. all schools, licensed day care facilities, churches, hospitals, cemeteries, ponds, lakes, and residential, commercial, and recreational areas within one mile of the site
  - d. location and surface type of roads within one mile of the site
  - e. latitudes and longitudes
  - f. area streams
  - g. airports within 5 miles of the site
  - h. site property boundary
  - i. drainage, pipeline, and utility easements
  - j. archaeological sites, historical sites, and site with exceptional aesthetic qualities
4. General location map [330.52(b)(4)(B), 305.45(a)(6)]
5. Topographic map [330.52(b)(4)(C), 305.45(a)(6)]

6. Legal description [330.52(b)(6)]
7. Land ownership map [330.52(b)(4)(D)]
8. Landowners list [330.52(b)(5)]

Applicant may request, as part of the application, a waiver from submittal of the two items 7 and 8 above [30 TAC 330.70(e)(2)]

9. Plan drawings and cross-sections [30 TAC 330.70(e)(4)]
  - a. landfill unit on which the gas recovery system is to be developed
  - b. limits of waste placement
  - c. final contours of facility
  - d. layout of extraction system and well locations
  - e. landfill gas treatment, gas compression, electrical power generation equipment, and any other beneficial gas-use equipment
  - f. typical cross sections of final cover with gas extraction system and wells.
  - g. typical details of well placement and manifold placement in conjunction with the final cover system.
10. Additional information
  - a. any appurtenant drainage features due to the constructions of a processing unit or fixed structure.
  - b. provisions to assure the integrity of the liner.
  - c. for enclosed structures, provisions for fire control facilities (fire hydrants, fire extinguisher, water tanks, and water well), continuous methane monitoring, and explosion-proof fixtures.

- d. a discussion of the proposed method for condensate disposal.
  - (1) as allowed by 30 TAC 330.5(e)(6)(A)(ii), gas condensate may be disposed in a MSW landfill unit having a composite liner and a leachate collection system.
  - (2) if chosen as an option, the O/O of the permitted landfill shall make gas condensate disposal part of the site operating plan. This should be part of companion Class 1 landfill permit modification

11. Safety plans

12. Recovery system operating plan [330.70(e)(6) 330.70(e)(7)]

- a. a demonstration that the final cover will not be damaged
- b. routine operational procedures for the entire gas recovery system
- c. emergency and contingency procedures for personnel and equipment
- d. startup procedures, shutdown, and closure procedures
- e. monitoring and maintenance procedures
- f. an estimation of average daily gas production
- g. an estimation of the design daily gas production

13. Post-closure care plan for the gas recovery system [330.70(e)(6)(F)]

(operational procedures once the municipal solid waste landfill is undergoing post-closure)

14. Air quality information 30 TAC [330.70(e)(3)]

(must have Air approvals prior to approval of registration)

15. Evidence of Financial Assurance [330.52(b)(11), 330.70(e)(8)]

III. Public Meeting [330.70(d)]

A. Is the only public notice requirement

B. Must be conducted at least 30 days before beginning facility operation

IV. Companion Permit Modification [30 TAC 305.70(g)(14)]

A. A separate, concurrent submittal by the owner/operator of the permitted landfill

B. Follow usual requirements for a Class 1 permit modification.

C. If chosen as an option, the O/O of the permitted landfill shall include gas condensate disposal as revisions to the permitted site operating plan.

V. Motion for Reconsideration [30 TAC 330.70(f), 50.39(b)-(f)]