EMERGENCY POWER AND BACKUP REQUIREMENTS FOR WWTPS

§217.1 Applicability

(a) This chapter applies to any person who proposes to construct, renovate, or re-rate a wastewater collection system or commission permitted wastewater treatment facility that will collect, transport, treat, or dispose of wastewater that retains the characteristics of domestic wastewater although it may contain industrial wastewater, except those systems regulated by Chapter 285 of this title (relating to On-Site Sewage Facilities).

(b) This chapter does not apply to a person who proposes to construct a collection system or commission permitted treatment facility that will collect, transport, treat, or dispose of wastewater that does not have the characteristics of domestic wastewater although it may contain domestic wastewater.

(c) The executive director will grant variances from the requirements of this chapter to a person who proposes to construct, materially alter, expand, or re-rate a collection system or treatment facility, if the plans and specifications for the project are submitted prior to March 1, 2009 and meet the design criteria that was in effect when the engineering design began.

§217.36. Emergency Power Requirements.

(a) Reliability of existing commercial power service.
  (1) An owner shall determine the reliability of the existing commercial power service for a facility from the power outage records obtained from the appropriate power company.
  (2) The records must:
    (A) be in writing;
    (B) be on the utility's letterhead and bear a signature of a utility employee;
    (C) identify the location of the wastewater treatment system or off-site lift station(s) being served;
    (D) list the total number of outages that have occurred during the past 24 months; and Texas Commission on Environmental Quality
    (E) indicate the date and duration of each recorded outage.

(b) An owner shall submit an power reliability determination and all backup documentation in the report for the approval of the executive director.

(c) If the executive director determines a power supply is unreliable:
  (1) the owner will be notified in writing;
  (2) the facility shall incorporate an on-site, automatically starting generator, capable of ensuring continuous operation of all critical wastewater treatment system units for a duration equal to the longest power outage in the power records; and
  (3) any off-site lift station must incorporate an on-site, automatically-starting generator capable of ensuring continuous operation of the lift station for a duration equivalent to the longest power outage on record for the past 24 months.

(d) Exceptions to the auxiliary power generator requirements for wastewater treatment facilities are:
  (1) The requirements for on-site, automatically starting generators for wastewater treatment facilities may be reduced as follows:

(A) Facilities may use lift stations and collection systems to store wastewater in lieu of on-site generators when the report calculations show that sufficient storage volume exists in the lift stations, upstream gravity wastewater collection system lines, and manholes to store the volume of wastewater during a peak diurnal event equal to the longest outage in the power records.

(B) If storage is used in lieu of backup power generators, the report must show that the hydraulic grade line of a collection system is such that in no case will wastewater be allowed to bypass the treatment facility during a peak flow event equal to the longest outage in the power records.

(C) When upstream storage is used as a means of ensuring complete treatment of the influent wastewater, a design must include the following:

(i) Storage is prohibited as a substitute for on-site generators if any of the flow to the treatment facility is gravity flow.

(ii) If the influent storage is less than two hours and power outage records indicate a maximum outage of less than two hours, the on-site, automatically starting generators need only provide sufficient power to operate all components of the disinfection system.

(iii) If the influent storage is at least two hours but not more than four hours and the power outage records indicate an outage of at least two hours but not more than four hours, a generator need only supply sufficient power to operate all or components of the disinfection system. Auxiliary generators are also required to supply power for return activated sludge pumps if the report does not show sufficient volume in the clarifiers for storage of sludge.

(2) Off-Site Lift Stations. Off-site lift stations may substitute portable generators or pumps in combination with collection system storage for on-site generators if the following criteria exist:

(A) the firm pumping capacity of a lift station is less than 100 gallons per minute;

(B) a station includes an auto-dialer or telemetry system with battery backup;

(C) operators knowledgeable in acquisition and startup of the portable generators and pumps are on 24-hour call;

(D) a station is accessible during a 25-year flood event;

(E) reasonable assurances exist as to the timely availability and accessibility of the proper portable equipment; and

(F) a station is equipped with properly designed and tested quick connections.

§217.37. Disinfection System Power Reliability.

(a) A disinfection system must include a backup power system capable of providing sufficient power to operate during any power outage.

(b) A backup power system must automatically restart the disinfection system during a power outage.
(c) A backup power system must meet the requirements of §217.36 of this title (relating to Emergency Power Requirements).

§217.63. Emergency Provisions for Lift Stations.

(a) A collection system lift station must be equipped with a tested quick-connect mechanism or a transfer switch properly sized to connect to a portable generator, if not equipped with an onsite generator.
(b) Lift stations must include an audiovisual alarm system and the system must transmit all alarm conditions through use of an auto-dialer system, Supervisory Control and Data Acquisition system, or telemetering system connected to a continuously monitored location.
(c) An alarm system must self-activate for a power outage, pump failure, or a high wet well water level.
(d) A lift station constructed to pump raw wastewater must have service reliability based on:
    (1) Retention Capacity.
        (A) The retention capacity in a lift station's wet well and incoming gravity pipes must prevent discharges of untreated wastewater at the lift station or any point upstream for a period of time equal to the longest electrical outage recorded during the past 24 months, but not less than 20 minutes.
        (B) For calculation purposes, the outage period begins when a lift station pump finished its last normal cycle, excluding a standby pump.
    (2) On-Site Generators. A lift station may be provided emergency power by on-site, automatic electrical generators sized to operate the lift station at its firm pumping capacity or at the average daily flow, if the peak flow can be stored in the collection system.
    (3) Portable Generators and Pumps.
        (A) A lift station may use portable generators and pumps to guarantee service if the report includes:
            (i) the storage location of each generator and pump;
            (ii) the amount of time that will be needed to transport each generator or pump to a lift station;
            (iii) the number of lift stations for which each generator or pump is dedicated as a backup; and
            (iv) the type of routine maintenance and upkeep planned for each portable generator and pump to ensure that they will be operational when needed.
        (B) An operator that is knowledgeable in operation of the portable generators and pumps shall be on call 24 hours per day every day.
        (C) The size of a portable generator must handle the firm pumping capacity of the lift station.
(e) Spill Containment Structures.
    (1) The use of a spill containment structure as a sole means of providing service reliability is prohibited.
    (2) A lift station may use a spill containment structure in addition to one of the service reliability options detailed in this in subsection (a) of this section.

(3) The report must include a detailed management plan for cleaning and maintaining each spill containment structure.
(4) A spill containment structure must have a locked gate and be surrounded an intruder resistant fence that is 6.0 feet high chain link, masonry, or board fence with at least three strands of barbed wire or 8.0 feet high chain link, masonry, or board fence with at least one strand of barbed wire.

(f) A lift station must be fully accessible during a 25-year 24-hour rainfall event.

(g) Lift station system controls must prevent over-pumping upon resumption of normal power after a power failure. Backup or standby units must be electrically interlocked to prevent operation at the same time that other lift stations pumps are operating only on the resumption of normal power after a power failure.

§305.125. Standard Permit Conditions.

Conditions applicable to all permits issued under this chapter, and which shall be incorporated into each permit expressly or by reference to this chapter are as follows.

(4) The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment.

(5) The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) installed or used by the permittee to achieve compliance with the permit conditions. For Underground Injection Control permits proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the permit conditions.

Source Note: The provisions of this §217 adopted to be effective August 28, 2008, 33 TexReg 6843

§217 rules replaced the §317 rules

§317.3 Lift Stations

(e) Emergency provisions. Lift stations shall be designed such that there is not a substantial hazard of stream pollution from overflow or surcharge onto public or private property with sewage from the lift station. Options for a reliable power source may include:
(1) Power supply. The commission will determine the reliability of the existing commercial power service. Such determinations shall be based on power outage records obtained from the appropriate power company and presented to the commission. When requesting outage records for submittal to the commission, it is important to note that the records be in writing, bear the signature of an authorized utility employee, identify the location of the wastewater facilities being served, list the total number of outages that have occurred during the past 24 months, and indicate the duration of each recorded outage. The facility will be deemed reliable if the demonstrated wastewater retention capacity, in the station's wet well, spill retention facility, and incoming gravity sewer lines, is sufficient to insure that no discharge of untreated wastewater will occur for a

length of time equal to the longest electrical outage recorded in the past 24 months. If records for the service area cannot be obtained, a 120 minute worst case outage duration will be assumed. Provisions for a minimum wastewater retention period of 20 minutes should be considered even in those cases where power company records indicate no actual outages of more than 20 minutes occurred during the past 24 months.

(2) Alternative power supply. If the existing power supply is found to be unreliable, an emergency power supply or detention facility shall be provided. Options include:

(A) Electrical service from two separate commercial power companies, provided automatic switch over capabilities are in effect;

(B) Electrical service from two independent feeder lines or substations of the same electric utility, provided automatic switch over capabilities are in effect;

(C) On-site automatic starting electrical generators;

(D) Reliance on portable generators or pumps. Proposals for the utilization of portable units shall be accompanied by a detailed report showing conclusively the ability of such a system to function satisfactorily. Portable units will be approved only in those cases where the station is equipped with an auto-dialer, telemetry device or other acceptable operator notification device, operators knowledgeable in acquisition and startup of the portable units are on 24-hour call, the station is accessible in all weather conditions, reasonable assurances exist as to the timely availability and accessibility of the proper portable equipment, and the station is equipped with properly designed and tested quick connection facilities. This option is usually acceptable only for smaller lift stations.

(3) Restoration of lift station. Provisions should be made to restore the lift station to service within four hours of outage.

(4) Spill containment structures. A spill containment structure should be considered together with in-system retention in determining a total wastewater retention time. Because separate spill retention facilities are not suitable for all locations, engineers should check with the commission prior to designing such structures. The design shall provide:

(A) a minimum storage volume of average design flow from the contributing area and the longest power outage during the most recent consecutive 24-month period or, if power records are not available, an assumed 24-hour outage;

(B) an impermeable liner (such as concrete or synthetic fabric (20 mil thickness) and should have an energy dissipator at the point of overflow from the lift station to prevent scour;

(C) a fence with a controlled access; and

(D) a plan for routine cleaning and inspection.

(5) Alarm system. An audio-visual alarm system (red flashing light and horn) shall be provided for all lift stations. These alarm systems should be telemetered to a facility where 24 hour attendance is available. The alarm system shall be activated in case of power outage, pump failure or a specified high water level.

§317.4 Wastewater Treatment Facilities

(a) (5) Auxiliary power. The need for auxiliary power facilities shall be evaluated for each plant and discussed in the preliminary and final engineering reports. Auxiliary power

facilities are required for all plants, unless dual power supply arrangements can be made or unless it can be demonstrated that the plant is located in an area where electric power reliability is such that power failure for a period to cause deterioration of effluent quality is unlikely. Acceptable alternatives to auxiliary power include the ability to store influent flow or partially treated wastewater during power outage. Auxiliary power may be required by the commission for plants discharging near drinking water reservoirs, shellfish waters or areas used for contact recreation, and for plants discharging into waters that could be unacceptably damaged by untreated or partially treated effluent. For more information on power reliability determination and emergency power alternatives, refer to §317.3 (e) of this title (relating to Emergency Provisions.)

§317.6. Disinfection.

(b) (F) Emergency chlorination. Emergency power should be provided for chlorination facilities.