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The POWER of ENGINEERING

**REGULATORY BODIES
FOR
IDFS, INC., 6.7 BILLION
SYNCHRONIZATION AND POWER PROJECTS
IN
TEXAS URBAN TRIANGLE**

PART ONE: PREAMBLE

The Energy sector of the State of Texas is mostly de-regulated. The following is a list of Governmental Organizations having Jurisdiction over our projects in the Texas Urban Triangle area where the electrical energy production is regulated by the **Public Utility Commission of Texas and ERCOT**:

1. **PUC** (Public Utility Commission of the State of Texas)
2. **TCEQ** (Texas commission on Environmental Quality)
3. **ERCOT** (Electrical Reliability Council of Texas)
4. **EPA** (Environmental Protection Agency)
5. **OSHA** (Occupational Safety and Health Administration)
6. **ARMY CORE OF ENGINEERS**
7. **Texas Railroad Commission**

PART TWO: REGULATORS

1. PUBLIC UTILITY COMMISSION OF TEXAS

The **Public Utility Commission of Texas (PUC or PUCT)** is a state agency that regulates the state's electric, water and telecommunication utilities, implements respective legislation, and offers customer assistance in resolving consumer complaints.

In 1975, the Texas Legislature enacted the **Public Utility Regulatory Act (PURA)** and created the **Public Utility Commission of Texas (PUC)** to provide statewide regulation of the rates and services of electric and telecommunications utilities. Roughly twenty years later, the combined effects of significant Texas legislation in 1995 and the Federal Telecommunications Act of 1996 resulted in competition in telecommunication's wholesale and retail services and the creation of a competitive electric wholesale market. Further changes in the 1999 Texas Legislature not only called for a restructuring of the electric utility industry but also created new legislation that ensured the protection of customers' rights in the new competitive environment. Over the years, these various changes have dramatically re-shaped the PUC's mission and focus, shifting from up-front regulation of rates and services to oversight of competitive markets and compliance enforcement of statutes and rules. In 2013, the Texas Legislature added water utility regulation to the agency's responsibilities.

Since the introduction of competition in both the local and long distance telecommunications markets and the wholesale and retail electric markets, the PUC has also played an important role in overseeing the transition to competition and ensuring that customers receive the intended benefits of competition.

Appointed by the Texas Governor, the three-member commission also regulates the rates and services of transmission and distribution utilities that operate where there is competition, investor-owned electric utilities where competition has not been chosen, and incumbent local exchange companies that have not elected incentive regulation.

The PUC's mission is to "protect customers, foster competition, and promote high quality infrastructure."

The agency is headquartered in the William B. Travis State Office Building at 1701 North Congress in Austin. In 2011, the former commission chairman, Barry Smitherman resigned to become a member of the Texas Railroad Commission, under appointment from Governor Rick Perry.

2. TCEQ (Texas commission on Environmental Quality)

The **Texas Commission on Environmental Quality (TCEQ)** is the environmental agency for the state of Texas. The commission's headquarters are located at 12100 Park 35 Circle in Austin. The fourth largest environmental agency in the United States (and the third largest state environmental agency, behind the US Environmental Protection Agency, the California EPA, and the New York DEC), it employs approximately 2,780 employees, has 16 regional offices, and has a \$474 million operating budget for the 2020 fiscal year.

"The Texas Commission on Environmental Quality strives to protect our state's public health and natural resources consistent with sustainable economic development.

1. DIVISIONS AND PROGRAMS

- a. **Office of Air:** The Office of Air oversees all air permitting activities. The office also implements plans to protect and restore air quality in cooperation with local, regional, state, and federal stakeholders. It tracks progress toward environmental goals, adapting plans as necessary.

The Air Quality Division works to protect and restore air quality through four programs: Air Implementation Grants, Air Industrial Emissions Assessment, Air Modeling and Data Analysis, and Air Quality Planning.^[11] The Air Permits Division processes air permits and authorizations for facilities that, when operational, would emit contaminants into the atmosphere. The division does this through two major air permitting programs, New Source Review (NSR) Permits and Title V Federal Operating Permits.

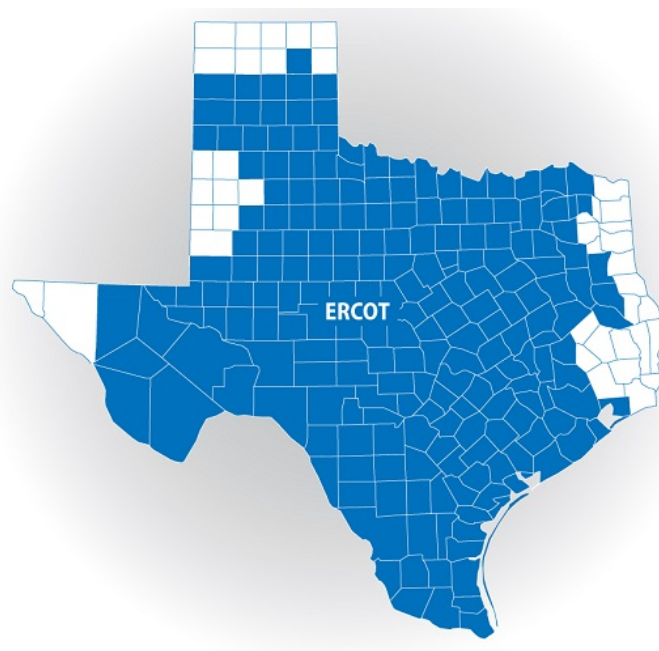
- b. **Office of Water:** The Office of Water oversees all aspects of planning, permitting, and monitoring to protect the state's water resources. The Office of Water is responsible for the implementation of the following major programs:

- Public Drinking Water
- Water Rights
- Interstate River Compacts
- Watermaster
- Districts and Utilities
- Groundwater Protection
- Texas Surface Water Quality Standards
- Nonpoint Source Program

- Wastewater, Storm Water, and Concentrated Animal Feeding Operation Permitting
 - Surface Water Quality Monitoring
 - Watershed Protection Plans and Total Maximum Daily Loads
 - Galveston Bay Estuary Program.
- c. Office of Waste:** The office implements federal and state laws related to the regulation of aboveground and underground petroleum storage tanks, generation, treatment, storage, and disposal of municipal, industrial, low-level radioactive, and hazardous wastes; and the recovery and processing of uranium and disposal of byproduct.
- d. Office of Compliance and Enforcement:** The Office of Compliance and Enforcement enforces compliance with the state's environmental laws, responds to emergencies and natural disasters that threaten human health and the environment, oversees dam safety, and monitors air quality within Texas. In addition, the office oversees the operations of 16 regional offices and one special-project office across the state.

3. ERCOT (Electrical Reliability Council of Texas)

The **Electric Reliability Council of Texas (ERCOT)** manages the flow of electric power on the Texas Interconnection that supplies power to more than 25 million Texas customers – representing 90 percent of the state's electric load. ERCOT is the first independent system operator (ISO) in the United States and one of nine ISOs in North America. ERCOT works with the Texas Reliability Entity (TRE), one of eight regional entities within the North American Electric Reliability Corporation (NERC) that coordinate to improve reliability of the bulk power grid.



As the ISO for the region, ERCOT dispatches power on an electric grid that connects more than 46,500 miles of transmission lines and more than 550 generation units. ERCOT also performs financial settlements for the competitive wholesale bulk-power market and administers retail switching for 7 million premises in competitive choice areas.

ERCOT is a membership-based 501(c)(4) nonprofit corporation, governed by a board of directors and subject to oversight by the Public Utility Commission of Texas (PUC) and the Texas Legislature.

ERCOT's members include consumers, electric cooperatives, generators, power marketers, retail electric providers, investor-owned electric utilities (transmission and distribution providers), and municipally owned electric utilities.

Power demand in the ERCOT region is highest in summer, primarily due to air conditioning use in homes and businesses. The ERCOT region's all-time record peak hour occurred on July 19, 2018, when consumer demand hit 73,259 MW.

4. EPA (Environmental Protection Agency)

The **Environmental Protection Agency (EPA)** is an independent executive agency of the United States federal government tasked with environmental protection matters. President Richard Nixon proposed the establishment of EPA on July 9, 1970; it began operation on December 2, 1970, after Nixon signed an executive order. The order establishing the EPA was ratified by committee hearings in the House and Senate. The agency is led by its administrator, who is appointed by the president and approved by the Senate. The current administrator, Michael S. Regan, was sworn in as the 16th *Administrator* of the United States *Environmental Protection Agency* on March 11 2021. The EPA is not a Cabinet department, but the administrator is normally given cabinet rank.

The EPA has its headquarters in Washington, D.C., regional offices for each of the agency's ten regions, and 27 laboratories. The agency conducts environmental assessment, research, and education. It has the responsibility of maintaining and enforcing national standards under a variety of environmental laws, in consultation with state, tribal, and local governments. It delegates some permitting, monitoring, and enforcement responsibility to U.S. states and the federally recognized tribes. EPA enforcement powers include fines, sanctions, and other measures. The agency also works with industries and all levels of government in a wide variety of voluntary pollution prevention programs and energy conservation efforts.

In 2020, the agency had 13,758 employees. More than half of EPA's employees are engineers, scientists, and environmental protection specialists; other employees include legal, public affairs, financial, and information technologists.

Many public health and environmental groups advocate for the agency and believe that it is creating a better world. Other critics believe that the agency commits government overreach by adding unnecessary regulations on business and property owners.

5. OSHA

1. **Introduction:** Congress created OSHA under the Occupational Safety and Health Act, which was signed by President Richard M. Nixon on December 29, 1970. Under the Occupational Safety and Health Act of 1970, OSHA's role is to assure safe and healthful working conditions for working men and women; by authorizing enforcement of the standards developed under the Act; by assisting and encouraging the States in their efforts to assure safe and healthful working conditions; by providing for research, information, education, and training in the field of occupational safety and health.
2. **Mission:** OSHA's mission is to prevent work-related injuries, illnesses, and deaths. Since the agency was created in 1971, occupational deaths have been cut by 62% and injuries have declined by 42%.
3. **Services:** OSHA and its state partners have approximately 2100 inspectors, plus complaint discrimination investigators, engineers, physicians, educators, standards writers, and other technical and support personnel spread over more than 200 offices throughout the country. This staff establishes protective standards, enforces those standards, and reaches out to employers and employees through technical assistance and consultation programs.

OSHA is determined to use its limited resources effectively to stimulate management commitment and employee participation in comprehensive workplace safety and health programs.

Because workplace inspections are one of OSHA's principal activities and because voluntary efforts to improve working conditions ultimately depend on strong enforcement, OSHA's enforcement policies are often viewed as confrontational. When asked a random sample of employees and employers who had recently experienced an OSHA inspection what they thought of the inspection in particular, and of OSHA's standards and educational and other assistance activities in general, the response was not very positive.

4. **OSHA's Inspection Priorities:** Top priority are reports of imminent dangers-accidents about to happen; second are fatalities or accidents serious enough to send three or more employees to the hospital. Third are employee complaints. Referrals from other government agencies are fourth. Fifth are targeted inspections-such as the Site Specific Targeting Program, which focuses on employers that report high injury and illness rates, and special emphasis programs that zero in on hazardous work such as trenching or equipment such as mechanical power presses. Follow-up inspections are the final priority.
5. **Jurisdiction:** Nearly every working man and woman in the nation comes under OSHA's jurisdiction (with some exceptions such as miners, transportation workers, many public employees, and the self-employed). Other users and recipients of OSHA services include: occupational safety and health professionals, the academic community, lawyers, journalists, and personnel of other government entities.

6. Compliance: About 1.5 million employers with 11 or more employees-20 percent of the establishments OSHA covers-must keep records of work-related injuries and illnesses. Workplaces in low-hazard industries such as retail, service, finance, insurance, and real estate are exempt from recordkeeping requirements.

- All employers must post the federal or a state OSHA poster to provide their employees with information on their safety and health rights. You may order a printed copy from the OSHA Publications Office at (800) 321-OSHA or download and print one from this Web site in English or Spanish
- If you are an employer, you may wish to contact the OSHA Consultation Program for your state for free on-site assistance in identifying and correcting hazards or setting up safety and health programs. You can also contact the OSHA Area Office nearest you to speak to the compliance assistance specialist about training and education in job safety and health issues. Another option is OSHA Advisors, interactive software that "walks" you through specific OSHA standards or helps identify potential hazards throughout your workplace. You can also find information on specific topics on the OSHA Web site by using the Alphabetical Subject Indexes, Advanced Search options, or by reviewing featured topics on the main OSHA Home Page.
- OSHA's Alliance Program enables employers, labor unions, trade or professional groups, and educational institutions that share an interest in workplace safety and health to collaborate with OSHA to prevent injuries and illnesses in the workplace. OSHA and the organization sign a formal agreement with goals that address training and education, outreach and communication, and promoting the national dialogue on workplace safety and health.
- The OSHA Strategic Partnership Program is for employers with varied backgrounds, experience and records in job safety and health. Participants in OSPP share a common commitment to improving workplace safety and health. These partnerships merge the creative ideas and resources of OSHA and stakeholders. OSPP emphasizes training and education in a voluntary, cooperative atmosphere. Tracking results is key to the partnerships.
- Voluntary Protection Programs are OSHA's premier partnership programs designed to recognize workplaces with exemplary safety and health programs. VPP participants serve as models of excellence for others in their industries and communities and are exempt from routine OSHA inspections.

6. Army Corp of Engineers:

1. Introduction: The **United States Army Corps of Engineers (USACE)** is a federal agency and a major Army command made up of some 34,600 civilian and 650 military personnel, making it the world's largest public engineering, design and construction management agency. Although generally associated with dams, canals and flood protection in the United

States, USACE is involved in a wide range of public works support to the nation and the Department of Defense throughout the world.

The Corps mission is to provide military and public works services to the United States by providing vital engineering services and capabilities, as a public service, across the full spectrum of operations--from peace to war--in support of national interests. Their most visible missions include:

- Planning, designing, building, and operating locks and dams. Other civil engineering projects include flood control, beach nourishment, and dredging for waterway navigation.
- Design and construction of flood protection systems (as in New Orleans) through various federal mandates
- Design and construction management of military facilities for the Army, and Air Force and other Defense and Federal agencies.
- Environmental regulation and ecosystem restoration.

2. Mission Areas

- a. **Warfighting:** USACE provides support directly and indirectly to the warfighting effort. The Corps builds and helps maintain much of the infrastructure the Army and the Air Force use to train, house, and deploy troops. Corps built and maintained navigation systems and ports provide an effective means to deploy vital equipment and other materiel. Corps R&D facilities help develop new methods and measures for deployment, force protection, terrain analysis, and mapping, and other support.

USACE directly supports the military at the front, making expertise available to commanders to help solve and avoid engineering and other problems. Forward Engineer Support Teams may accompany combat engineers to provide immediate support, or to reach back electronically into the rest of the Corps for the necessary expertise. Corps professionals use the knowledge and skills honed on both military and civil projects to support the US and local communities in the areas of real estate, contracting, mapping, construction, logistics, engineering, and management experience. This work currently includes support for rebuilding Iraq, establishing Afghanistan infrastructure, and supporting international and interagency services.

In addition, the work of almost 34,000 civilians on civil works programs throughout USACE provide a training ground for similar capabilities worldwide. USACE civilians volunteer for assignments worldwide. For example, hydropower experts have helped repair, renovate, and run hydropower dams in Iraq in an effort to help get Iraqis to become self-sustaining

b. Homeland Security: USACE supports the United States' Department of Homeland Security and the Federal Emergency Management Agency (FEMA) through its security planning, force protection, research and development, disaster preparedness efforts, and quick response to emergencies and disasters. The Corps of Engineers is able to help save hundreds of lives and millions of dollars in property damage every year from natural and manmade disasters (however, see Civil Works controversies below).

The Corps conducts its emergency response activities under two basic authorities -- the Flood Control and Coastal Emergency Act (Pub.L. 84-99), and the Stafford Disaster Relief and Emergency Assistance Act (Pub.L. 93-288). In a typical year, the Corps of Engineers responds to more than 30 Presidential disaster declarations, plus numerous state and local emergencies. Emergency responses usually involve cooperation with other military elements and Federal agencies in support of State and local efforts. *c. Infrastructure Support:* Work comprises engineering and management support to military installations, global real estate support, civil works support (including risk and priorities), operations and maintenance of Federal navigation and flood control projects, and monitoring of dams and levees.

More than 67 percent of the goods consumed by Americans and more than half of the Nation's oil imports are processed through deep water ports maintained by the Corps of Engineers, which maintains more than 12,000 miles (19,000 km) of commercially navigable channels across the US.

In both its Civil Works mission and Military Construction program, the Corps is responsible for billions of dollars of the nation's infrastructure. For example, the Corps maintains direct control over 609 dams, maintains and/or operates 257 navigation locks, and operates 75 hydroelectric facilities generating 24% of the nation's hydropower and three percent of its total electricity. USACE inspects over 2,000 Federal and non-Federal levees every two years.

Four billion gallons of water per day are drawn from the Corps' 136 multi-use water supply projects comprising 9,800,000 acre feet ($1.209 \times 10^{10} \text{ m}^3$) of water storage, making it one of the United States' largest water supply agencies.

The 249th Engineer Battalion (Prime Power), the only active duty unit in USACE, generates and distributes prime electrical power in support of warfighting, disaster relief, stability and support operations as well as provides advice and technical assistance in all aspects of electrical power and distribution systems. The battalion deployed in support of recovery operations after 9/11 and was instrumental in getting Wall Street back up and running within a week. The battalion also deployed in support of post-Katrina operations. All of this work represents a significant investment in the nation's resources.

- c. Water Resources:** Through its Civil Works program, USACE carries out a wide array of projects that provide coastal protection, flood protection, hydropower, navigable waters and ports, recreational opportunities, and water supply. Work includes coastal protection and restoration, including a new emphasis on a more holistic approach to risk management. As part of this work, the Corps is the number one provider of outdoor recreation in the US, so there is a significant emphasis on water safety.
- 3. Army Corp of Engineer's Civil Involvement:** Army involvement in works "of a civil nature," including water resources, goes back almost to the origins of the U.S. Over the years, as the Nation's needs have changed, so have the Army's Civil Works missions.

Major areas of emphasis include the following:

- a. Navigation:** Supporting navigation by maintaining and improving channels was the Corps of Engineers' earliest Civil Works mission, dating to Federal laws in 1824 authorizing the Corps to improve safety on the Ohio and Mississippi Rivers and several ports. Today, the Corps maintains more than 12,000 miles (19,000 km) of inland waterways and operates 235 locks. These waterways -a system of rivers, lakes and coastal bays improved for commercial and recreational transportation - carry about 1/6 of the Nation's inter-city freight, at a cost per ton-mile about 1/2 that of rail or 1/10 that of trucks. USACE also maintains 300 commercial harbors, through which pass 2.0×10^9 short tons (1.8×10^9 metric tons) of cargo a year, and more than 600 smaller harbors.
- b. Flood Risk Management:** Flood Risk Management. The Corps was first called upon to address flood problems along the Mississippi river in the mid- 1800s. They began work on the Mississippi River and Tributaries Flood Control Project in 1928, and the Flood Control Act of 1936 gave the Corps the mission to provide flood protection to the entire country. Neither the Corps nor any other agency can prevent all flood damages.
- c. Recreation:** The Corps of Engineers is the Nation's largest provider of outdoor recreation, operating more than 2,500 recreation areas at 463 projects (mostly lakes) and leasing an additional 1,800 sites to State or local park and recreation authorities or private interests. The Corps hosts about 360 million visits a year at its lakes, beaches and other areas, and estimates that 25 million Americans (one in ten) visit a Corps project at least once a year. Supporting visitors to these recreation areas generates 600,000 jobs.
- d. Hydroelectric Power:** The Corps was first authorized to build hydroelectric plants in the 1920s, and today operates 75 power plants, producing one fourth of the nation's hydroelectric power--or three percent of its total electric energy. This makes USACE the Nation's fifth largest electric supplier.
- e. Shore Protection:** Shore Protection. With a large proportion of the U.S. population living near our sea and lake shores, and an estimated 75% of U.S. vacations being spent at the beach, there has been Federal interest – and a Corps of Engineers mission - in

protecting these areas from hurricane and coastal storm damage. This mission is one of the more controversial missions of USACE.

- f. **Dam Safety:** The Corps of Engineers is a leader in developing engineering criteria for safe dams, and conducts an active inspection program of its own dams.
- g. **Water Supply:** The Corps first got involved in water supply in the 1850s, when they built the Washington Aqueduct. Today USACE reservoirs supply water to nearly 10 million people in 115 cities.
- h. **Environment:** The U.S. Army Corps of Engineers environmental mission has two major focus areas: restoration and stewardship. The Corps supports or manages numerous environmental programs, that run the gamut from cleaning up areas on former military installations contaminated by hazardous waste or munitions to helping establish/reestablish wetlands that helps endangered species survive. Some of these programs include Ecosystem Restoration, Formerly Used Defense Sites, Environmental Stewardship, EPA Superfund, Abandoned Mine Lands, Formerly Utilized Sites Remedial Action Program, Base Realignment and Closure, 2005, and Regulatory.

This mission includes education as well as regulation and cleanup.

The U.S. Army Corps of Engineers has a very active environmental program under both its Military and Civil Programs. The Civil Works environmental mission that ensures all Corps projects, facilities and associated lands meet environmental standards. The program has four functions: compliance, restoration, prevention, and conservation. The Corps also regulates all work in wetlands and waters of the United States.

The Military Programs Environmental Program manages design and execution of a full range of cleanup and protection activities

- cleans up sites contaminated with hazardous waste, radioactive waste, or ordnance
- complies with federal, state, and local environmental laws and regulations
- strives to minimize our use of hazardous materials
- conserves our natural and cultural resources
- The following are major areas of environmental emphasis:
 - Wetlands and Waterways Regulation and Permitting
 - Ecosystem Restoration
 - Environmental Stewardship
 - Radioactive site cleanup through the Formerly Used Sites Remedial Action Program (FUSRAP)
 - Base Realignment and Closure (BRAC)
 - Formerly Used Defense Sites (FUDS)
 - Support to EPA's Superfund Program

- 7. Texas Railroad Commission:** The official rules of the Railroad Commission of Texas are found in the Texas Administrative Code (TAC), Title 16, Part 1, Chapters 1 through 20. The TAC is maintained by the Office of the Secretary of State and is available online. The Railroad Commission's rules are located in Title 16, Economic Regulation, Part 1.

Below is the list of Railroad Commission chapters currently in effect:

- Chapter 1: Practice and Procedure
- Chapter 2: Informal Complaint Procedure
- Chapter 3: Oil and Gas Division
- Chapter 4: Environmental Protection
- Chapter 7: Gas Services Division
- Chapter 8: Pipeline Safety Regulations
- Chapter 9: LP-Gas Safety Rules
- Chapter 11: Surface Mining and Reclamation Division
- Chapter 12: Coal Mining Regulations
- Chapter 13: Regulations for Compressed Natural Gas (CNG)
- Chapter 14: Regulations for Liquefied Natural Gas (LNG)
- Chapter 15: Alternative Fuels Research and Education Division
- Chapter 18: Underground Pipeline Damage Prevention (new chapter effective