

Rural Electrification in Texas

Mechanization was only part of the “farm problem” in Texas. Another part of the problem had to do with electricity. Most farm homes were without electricity in 1920. Lighting in the farm home and outbuilding was by candles, coal oil, or kerosene lamps. Homes were heated with fireplaces and wood or coal burning stoves. Food was prepared on a wood-burning or oil-burning stove. Milk came from the cow to the table. Food was seasonal. Poultry was kept alive until a few hours before the meal. Hogs and livestock were killed and eaten, or smoked, salted and cured for the short term. Clothes were washed by hand in open vats or iron pots with water warmed by firewood and hung out to dry on the clothesline. There was no hot and cold running water. Radios were a rarity—and battery operated. The toilet was outdoors...an “outhouse” or privy. Most rural homes depended on wells, streams, or cisterns that collected rainwater.

Rural electrification could greatly enhance the farm home and rural life. To encourage and help facilitate rural electrification, the Department of Agricultural Engineering, in cooperation with the Texas Committee on the Relation of Electricity to Agriculture, sponsored a “Farm Electrification Short Course” on campus on November 5-7, 1931. One of the presenters, Mrs. Phebe K. Warner, Chairman of the Committee of Rural Cooperation and Federation Extension, General Federation of Women’s Clubs, vigorously explained in her presentation that there “There Must Be a Way” to electrify:

Today there are six million farm homes in this nation; between four and five hundred thousand of those homes are in Texas. There is no place where the comforts and conveniences, the time saving and labor lifting help of electricity is so needed as in our farm homes where women and children do practically all the manual labor of home making.

The Farm Electrification Short Course of 1931, co-sponsored by the Department of Agricultural Engineering with the Texas Committee and the Southwestern Division of the National Electric Light Association, was itself evidence of a coordinated state-wide campaign to facilitate the electrification of rural Texas. That effort had begun in 1923, when Texas A&M’s

president, Dr. William Bennett Bizzell, appointed three faculty, including Francis C. Bolton, Director of the Texas Engineering Experiment Station, and Professors Daniels Scoates, and E. B. LaRoche to a special committee to “study the problems of rural electrification in Texas.” Bolton had joined the faculty in 1909 as the first professor of electrical engineering. During World War I, he served as director of War Educational Activities for the College, and also instructed the training of radio technicians for the Signal Corps. In the 1920s he headed the new department of Electrical Engineering and became the Director of the Texas Engineering Experiment Station. Edwin LaRoche was chairman of the Department of Architecture and Architectural Engineering. The “mix” for addressing the problem of rural electrification in Texas thus included an electrical engineer, architect, and agricultural engineer.

. A&M’s President T.O. Walton chaired CREA while S. J. Ballinger, with the San Antonio Public Service Company, served as Secretary. Committee members included representatives from the Texas Farm Bureau Federation, the East and West Texas Chambers of Commerce, and a representative from the Rio Grande Horticultural Society. Texas power and light companies were represented by individuals from Texas Power and Light, Central and South West Utilities, Gulf States Utilities, and the San Antonio Public Service Company. Power companies from Arkansas, Oklahoma, and Mississippi, and General Electric also sent representatives. Texas Tech associates included their Dean of Engineering, W. J. Miller, and the Dean of the School of Agriculture, A. H. Leidigh, while Texas A&M’s representatives included F. C. Bolton, Dean of the School of Engineering, A. B. Conner, Director of the Agricultural Experiment Station, and Daniels Scoates. The Texas Committee on the Relation of Electricity to Agriculture (CREA) was a state-wide integrated and collaborative effort that worked to facilitate and encourage the electrification of rural Texas.

Their immediate conclusion was that rural electrification required a state-wide composite organization representing power systems, farm organizations, and related businesses. Scoates, Bolton, and LaRoche contacted representatives of electric utility companies then operating in Texas and won their support for the development of a cooperative program that included utility systems, farm organizations, the Texas Agricultural Experiment Station, and the Engineering Experiment Station. In 1925, the program began to function under the oversight of the Department of Agricultural Engineering. A formal Memorandum of Agreement approved in 1926 by the Engineering Experiment Station, the Agricultural Experiment Station, the

Agricultural Engineering Department and all electric power companies in the state designated Texas A&M as the center for research and study of “the relation of electricity to agriculture.” The research was to be financed from a revolving \$1,000 research fund supplied by Texas power companies and administered by Texas A&M. Disbursements from the fund were to be approved by the head of the Department of Agricultural Engineering. Agricultural Engineering thus became the keystone in facilitating the electrification of rural Texas.

In January 1927, Agricultural Engineering faculty and associated power company representatives restructured themselves, and faculty as the Texas Committee on the Relation of Electricity to Agriculture. Notably, a new member of the Texas Committee was a representative from the recently organized Texas Technological College, located in Lubbock. Texas Tech was created by the Legislature in 1923 to give “thorough instruction in technology and textile engineering, and associated courses in the arts and sciences, physical, social, political, pure and applied sciences, and to give instruction in technological manufacturing, and agricultural pursuits and domestic husbandry and home economics.” The Committee, in effect, represented a new partnership and multi-phase program designed to educate rural Texans and the general public about electricity and the use of electric appliances to better enable technical and cultural change. Major projects for the Committee were designated as being: Research and Investigation of Refrigeration and the costs involving general purpose farm use, and specifically, the costs of egg refrigeration. The adoption of egg refrigeration had a very positive effect on the on-going development of commercial poultry operations on Texas farms enabling Texas farm eggs to reach Texas urban markets.



Fig. 4.1, The Committee on the Relation of Electricity to Agriculture (CREA) meet in 1927. Notable participants from the A&M College of Texas include Daniels Scoates (2), F. C. Bolton (5) Dean of Engineering and T. O Walton (12) President. Others represented electrical companies and agricultural interests from around the state.

The Texas State Committee on Relations of Electricity to Agriculture continued to operate under the auspices of Texas A&M's Department of Agricultural Engineering into the 1950s. As previously mentioned, J.E. Waggoner served as the first Director of the Committee, and was replaced by Professor Peter Thorpe Montfort in 1932. Montfort headed the program



Fig. 4.2, Peter Thorpe Montfort

until his death in 1956. As information regarding farm electrification became available, Montfort assiduously maintained that information and made it available. The Department of Agricultural Engineering's *Information on Rural Electrification* became a vital resource for diverse agencies and individuals who could deploy the information in a way as to facilitate the expansion of rural electrification. A sample of that record, a typescript cross-indexed, bound bibliography for the years 1927 to 1956 is still available in the Texas A&M University Library. Montfort notes that "system of filing rural electrification information in the Office of the Director of the Texas Committee on the Relation of Electricity to Agriculture" utilizes five major divisions, including 1) College Bulletins 2) Cross Index to College Bulletins, 3) List of Magazines, Trade Journals and Farm Papers 4) General Information, and 5) Catalogues:

Agricultural Colleges, Experiment Stations, Extension Services, Electric Companies, Equipment Manufacturers and other agencies have, during the past ten years, released many hundreds of excellent bulletins, magazine articles and other publications dealing with the various phases of electric service for the farm. Those who wish to build up a file of this information are confronted with the problem of finding out what publications are available, and where they can be secured.

Montfort, in cooperation with members of the Texas Committee on the Relation of Electricity to Agriculture. in February 1937 completed a typescript inventory of then available information relating to rural electrification entitled: *Information on Rural Electrification, A List and Classification of State Bulletins, Magazine Articles, and Commercial Publications* which was a valuable resource for conveying information regarding electrification options and possibilities to farm families and to the general public.

Crop diversification, with mechanization and electrification, further enhanced farm income. By 1930, roughly one-third of the American population living in rural areas provided food and fiber for themselves and the remaining two-thirds living in urban centers. A report from the Farm Electrification Short Course held on the Texas A&M campus in 1931 noted that:

It is generally believed by agricultural engineers that the maximum efficiency of tractor farming will ultimately make it possible for 15 percent of the population remaining on the farms to provide food and clothing for the whole nation.

So we have little reason to doubt that the farmer will continue to accept improved methods. It is equally certain that as rapidly as the farmer becomes convinced electrical power on the farm is an improvement on present power, the farmer will avail himself of it.

Mechanization, electrification, crop diversification, irrigation, soil fertilization and management, erosion control, insect repellants, selective breeding, food and fiber engineering all, in time, became a part of the agricultural arsenal for improving farm production and farm profits. In 1947, the Texas Committee on the Relation of Electricity to Agriculture was renamed the Texas Farm Electrification Committee, but the work and methodology of the Committee and its members changed little from the time of inception in 1923 with President Bizzell's appointment of the three member committee on rural electrification.

The work of the Committee remained "quite informal." There were no contracts and no constitution or bylaws. There was work to be done which was beneficial to all associated members and to Texans both rural and urban. Greater productivity on the farm translated to better nourishment and living conditions for all Texans. Each year, Professor Montfort announced the annual meeting of the Texas Committee members, held on the A&M campus. Director Montfort presented the annual report on the research and educational activities of the Committee for the past year, and that work was usually continued into the next year, sometimes with modest alterations in the ways and means of accomplishing a particular task, and sometimes with a call for new or more vigorous efforts.

The Rural Electrification Short Courses, which first began in November 1931, were held annually in most years until World War II. Over the years, as rural Texas became electrified, the Short Courses were increasingly focused on specific issues and farm facilities, and on specific appliances, and operations such as household equipment, water systems, wiring and lighting, and poultry equipment. Typically, in addition to an opening and closing general assembly, the three-day Short Course was divided into eight "Sections" located at various places on the campus, including the new Agricultural Engineering Building and shops located on the 1st and 3rd floors, the Horticulture Greenhouse, and Agricultural Experiment Station Farm.

Modern electric refrigeration for the farm substantially improved cleanliness and health issues related to food preparation and food services. Mrs. Dallas Plauche's two short course electrification presentations focused on the electric roaster and the electric refrigerator. Her

refrigerator instruction dealt with food placement in the refrigerator, the size needed for various family sizes and uses, defrosting and care of the refrigerator—all involving very practical hands-on instruction. Electric-operated water pumps for use in shallow wells greatly improved efficiency and comfort and saved man-hours drawing water with buckets or hand pumps. Electric motors harnessed to cutters, burr mills and hammer mills could “digest” an ear of corn in the shuck and efficiently produce roughage for livestock, completing a task that would otherwise take hours of arduous labor and result in less uniform and usable feed. Electrically warmed hot beds resulted in earlier and more vigorous plant sprouting and growth. A session conducted by Bill Jenkins, George Patillo, and H.O. Roberts, Jr. focused on the specifics of home lighting, bulb sizes, costs and efficiency...and what central fixtures such as table lamps and floor lamps best suited the farm home dining room and bedroom.

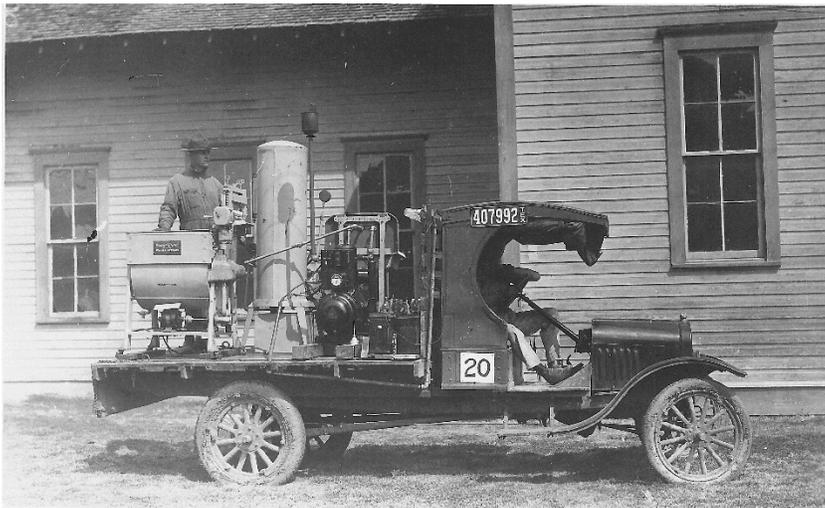


Fig. 4.3, Agricultural Engineering Department activities to encourage rural electrification included using this Ford Model TT truck to support demonstrations across the state. A generator mounted on the truck bed provided power for light bulbs and a wringer/washing machine.