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PUBLIC UTILITIES REGULATION—JURISDICTION OF THE FEDERAL POWER COMMISSION: FACTUAL DETERMINATION OF INTERSTATE POWER FLOW REQUIRED. *Florida Power & Light Co. v. FPC*, 430 F.2d 1377 (5th Cir. 1970), cert. granted, 91 S. Ct. 873 (1971).

The Florida Power and Light Company (FPL) generates, transmits, distributes and sells electric energy in the State of Florida. It is the largest electric utility in that state. FPL is directly connected with four other Florida electric systems in a "power pool" arrangement. One of the other systems is connected (in a similar pooling arrangement) to a further system across the state line. FPL has no direct interstate connections. The electric power on all these systems is supplied as alternating current at a frequency of 60 cycles. Frequency control and synchronization are maintained by all the systems. This permits an automatic free flow of power throughout the networks of all the systems, which is normally beyond the control of any particular system. On this basis, the Federal Power Commission (FPC) in a 3 to 2 decision found that FPL operates in "electromagnetic unity" with suppliers in and outside of Florida, and that such unity, without more, demonstrates that FPL "owns and operates facilities for the interstate transmission of electric energy" and thus is a "public utility" within the meaning of § 201 of the Federal Power Act.¹ The FPC thus asserted jurisdiction over FPL.² On appeal to the Fifth Circuit Court of Appeals a unanimous court reversed. *Held*: The Commerce Clause does not extend federal jurisdiction over any power company on the sole basis that it is interconnected and electromagnetically synchronized with any other company in another state. The proper test for federal jurisdiction is a factual determination of actual interstate power flow. *Florida Power & Light Co. v. FPC*, 430 F.2d 1377 (5th Cir. 1970), cert. granted, 91 S. Ct. 873 (1971).

The Federal Power Act gives the FPC jurisdiction over a company which has the status of a "public utility,"³ which is defined as any person who owns or operates facilities for the "transmission of electric energy in interstate commerce and . . . the sale of electric

1. 16 U.S.C. § 824(e) (1964).

2. *Florida Power & Light Co.*, 37 F.P.C. 544 (1967).

3. 16 U.S.C. § 824(e) (1964).

energy at wholesale in interstate commerce”⁴ The Supreme Court has ruled that *either* transmission *or* sales may serve as a basis for determining public utility status.⁵ The Court has also held that electricity is transmitted in interstate commerce within the meaning of the act if, at any point between generation and consumption, it crosses a state line.⁶ The purpose of this note is to demonstrate that the restrictions placed on the FPC by the Court of Appeals for the 5th Circuit are unreasonable, and contrary to vital public interests and to well reasoned precedent.

I. THE TEST FOR INTERSTATE TRANSMISSION

It has not been entirely clear what test is to be used to demonstrate the *actual* transmission of electric energy across state lines. The Supreme Court has consistently held that “federal jurisdiction [follows] the flow of electric energy, *an engineering and scientific*, rather than a legalistic or governmental, test.”⁷ Two tests have been accepted by the Court: the tracing test and the commingling test.⁸ The tracing test involves a metering, by analogy to the flow of liquids, of out-of-state energy actually delivered.⁹ The FPC, however, decided that tracing may “not necessarily reflect the physical realities of the movement of electrical energy.”¹⁰ Instead, it promulgated the commingling test and the Seventh Circuit Court of Appeals agreed.¹¹ The commingling test states that the flow of energy in lines that receive energy

4. *Id.*

5. FPC v. East Ohio Gas Co., 338 U.S. 464 (1950).

6. Jersey Cent. Power & Light Co. v. FPC, 319 U.S. 61 (1943). *See also* California v. Lo-Vaca Gathering Co., 379 U.S. 366 (1965).

7. Connecticut Light & Power Co. v. FPC, 324 U.S. 515 529 (1945) (emphasis added). *See* California v. Lo-Vaca Gathering Co., 379 U.S. at 369; FPC v. Southern Cal. Edison Co., 376 U.S. 205, 209 n.5 (1964).

8. The tracing theory was first used in Connecticut Light & Power Co. v. FPC, 324 U.S. 515 (1945); the commingling theory was first used in California v. Lo-Vaca Gathering Co., 379 U.S. 366 (1965).

9. Connecticut Light & Power Co. v. FPC, 324 U.S. 515 (1945); FPC v. Southern Cal. Edison Co., 376 U.S. 205 (1964). Note however that in *Connecticut* the court said in dicta that if the power company had remained in an interconnected power pool (from which it had withdrawn to avoid regulation) it would have been subject to FPC jurisdiction. 324 U.S. at 518. For a detailed description of the tracing theory see 40 N.Y.U.L. Rev. 1129, 1144 (1965).

10. Indiana & Mich. Elec. Co., 57 P.U.R.3d 499 at 508 (F.P.C. 1965).

11. Indiana & Mich. Elec. Co. v. FPC, 365 F.2d 180 (7th Cir.), *cert. denied*, 385 U.S. 972 (1966).

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from more than one source, one of which is out-of-state, is "interstate energy" since the out-of-state energy is assumed to commingle with the other energy in the system and to change the character of all the energy to interstate electric power.¹²

In four recent decisions the FPC has advanced the commingling test to its logical conclusion and found that the integrated interstate power pool character of a system (such as the one of which FPL is a member) is *prima facie* evidence of the presence of interstate energy in it. In the first of these cases, *Indiana & Michigan Electric Co. v. FPC*,¹³ the circuit court affirmed the decision of the FPC and noted that point to point tracing was not possible in this instance and that the automatic nature of the power flow was convincing circumstantial evidence of interstate power since a pool of energy was generated in several states which supplied the entire system load, without reference to state or corporate lines.

The Eighth Circuit followed suit in *Arkansas Power & Light Co. v. FPC*.¹⁴ There, the court distinguished the two major tracing theory cases on the grounds that in neither of them did a highly integrated, interconnected pool operation exist. The court cited *Indiana & Michigan* to the effect that the important consideration in determining jurisdiction is the integrated interstate pool character of the operation. In such a system, said the court, tracing is difficult and perhaps impossible. In any event it is unrealistic and "irrelevant to present day power technology."¹⁵ The court said it could not ignore the "patent realities of Arkansas' integrated operations."¹⁶

The next year the Seventh Circuit reaffirmed the FPC position in

12. *California v. Lo-Vaca Gathering Co.*, 379 U.S. 366 (1965); *Pennsylvania Water & Power Co. v. FPC*, 343 U.S. 414 (1952). *Lo-Vaca* was a natural gas case, but the acceptance of the commingling test is still a valid precedent for electric power because of:

(1) the similarity between the Natural Gas Act, 52 Stat. 821 (1938), 15 U.S.C. §§ 717-717w (1964) and parts II and III of the Federal Power Act, 49 Stat. 847 (1935), 16 U.S.C. §§ 824-825u (1964); and (2) the analogous physical propensities of gas and electric power.

46 *Boston U.L. Rev.* 552, 562 (1966).

13. 365 F.2d 180 (7th Cir.), *cert denied*, 385 U.S. 972 (1966).

14. 368 F.2d 376 (8th Cir. 1966). The court there held that evidence supported the FPC's finding that interstate energy was supplied to all 23 wholesale customers of a power company which was part of a regional system which in turn was interconnected with other major systems in other parts of the United States and formed part of a network.

15. *Id.* at 382, citing *Arkansas Power & Light Co.*, 34 F.P.C. 747, 751 (1965).

16. *Id.* at 380.

sweeping terms. In *Public Service Co. v. FPC*,¹⁷ the court stated the obvious proposition that "scientific evidence can be circumstantial as well as direct."¹⁸ Furthermore, PSCI's "participation in this pool by virtue of its *interconnections*, even though only for economy and emergency purposes, results in the introduction of a substantial amount of out-of-state energy into PSCI's system."¹⁹ Finally, admitting that judges are not scientists, the court held that, "under the Federal Power Act the findings of the commission as to the facts, if supported by substantial evidence on the record as a whole, are conclusive."²⁰

The reasoning in these cases becomes clearer when the concept of electromagnetic interconnection is understood.²¹ In such a system energy is supplied as alternating current at a frequency of 60 cycles. The frequency always varies slightly above or below 60 cycles, but it must be exactly synchronized with every member of the system. The speed of every generator is locked in to the same frequency and a change in one changes all. The purpose of such frequency control is to regulate total generation output in such a way as to constantly match as nearly as possible the total system load (usage). Thus, when a load is added suddenly to the system or a generator fails, every generating unit operating in the system will instantaneously change speed. Every generator contributes energy to the system to maintain the balance between generation and load. Such load changes occur constantly (lights are switched on or off, workmen start or stop their machines, etc.), resulting in a constant swapping and redistribution of loads borne by the various generators throughout an interconnected system. Energy flows in individual lines are not controlled because they are determined by the technical electric characteristics of the network. Only the net flows over all interconnections on a system are controlled. It was these practical considerations, based upon engineer-

17. 375 F.2d 100 (7th Cir. 1967).

18. *Id.* at 102.

19. *Id.* at 103 (emphasis added).

20. *Id.* See also *Cincinnati Gas & Elec. Co.*, 62 P.U.R.3d 179 (F.P.C. 1966).

21. The following description is abstracted from the Examiner's Report in *Florida Power & Light Co.*, 37 F.P.C. 544, 564-68 (1967). While that report might naturally be expected to reflect the FPC view of the facts, it is hornbook law that the FPC, as the expert agency involved, is entitled to draw any conclusions which are supported by substantial evidence.

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ing and scientific facts,²² which led to the decisions in *Indiana & Michigan*, *Arkansas Power*, and *Public Service Co.*

The Court of Appeals for the Fifth Circuit in the principal case, however, categorically rejected the above trend. The court distinguished the cases supporting the commingling test on the basis that those cases were endeavoring to establish jurisdiction by reason of wholesale transactions in interstate commerce and not on interstate transmission of electric energy. It quoted dicta in *Arkansas Power & Light Co. v. FPC*,²³ to the effect that this is a major distinction, but did not explain why.²⁴ The court also cited *Jersey Central Power & Light Co. v. FPC*,²⁵ (“[m]ere connection determines nothing”)²⁶ and stated that actual tracing was necessary since the complex interconnections and synchronizations of the system were not sufficient. “It tells us what, as to that company, could occur. It does not tell us with any substantial degree of certainty what does occur.”²⁷ Conceptual theories are not enough; “actual power flow” must be demonstrated.²⁸ What the court is requiring here is that factual proof be given in an area where this is almost impossible. As the court itself noted,²⁹ nearly nothing is known concerning the nature of the transmission of electric energy; there are only potentially explanatory theories, not facts.

As indicated above, the trend has been toward the acceptance of the most adequate theory (the commingling/power pool theory) and its logical consequence—that interconnection itself is evidence of the presence of inter-state energy and obviates the necessity of proving such presence.³⁰ The court has rejected the trend and has asked that factual proof be given. Since factual proof cannot usually be given, the effect of the request will be to lessen federal regulation, just at that point in time when more regulation is needed.³¹

22. See text accompanying note 7, *supra*.

23. See note 14, *supra*.

24. *Florida Power & Light Co. v. FPC*, 430 F.2d at 1386.

25. 319 U.S. 61, 72 (1943).

26. 430 F.2d at 1380.

27. *Id.* at 1383.

28. *Id.* at 1385.

29. *Id.* at 1384.

30. See cases cited in notes 13-20, *supra*.

31. The investor-owned electric industry has long since outgrown the regulatory jacket which Congress last tailored for it. . . . A consensual approach to the planning of future electric power supplies, based on voluntary cooperation of the industry,

II. THE CASE FOR FEDERAL REGULATION

Careful reading of the Fifth Circuit's opinion would indicate that it views the question of the proper jurisdictional test as being merely ancillary to a basic public policy issue.³² On the basis of the legislative history of the Federal Power Act, the court concluded that one of the intentions of the Act was to promote the *voluntary* interconnection of power systems.³³ The court then reasoned that if interconnection alone is used as a basis for federal jurisdiction it will have the effect of discouraging such voluntary connections and would frustrate the intent of the Act. However, this reasoning seems to be incorrect.³⁴

The major purpose of the Act was to close a gap in rate regulation that emerged as some electricity began to be sold across state lines, and hence outside of the control of state regulatory authorities.³⁵ The Act also regulated interconnections in order to fully and economically utilize the nation's resources.³⁶

It is submitted that voluntary interconnection will occur *with or without* federal regulation. In the first place, such interconnection is virtually a present fact of the industry. In 1964 the FPC reported that "97% of the industry's generating capacity is to a greater or lesser degree interconnected in five large networks."³⁷ With the exceptions of Alaska and Hawaii, all the states are interconnected on an emergency or economic basis.³⁸

Second, such interconnection is economically profitable to an extent which would most probably override the burden of federal regula-

is an inadequate substitute for effective regulation.

Miller, *A Needed Reform of the Organization and Regulation of the Interstate Electric Power Industry*, 38 *FORDHAM L. REV.* 635 at 671 (1970). See notes 32-53 and accompanying text, *infra*.

32. 430 F.2d at 1387-88.

33. *Id.* at 1387. See S. REP. NO. 621, 74th Cong., 1st Sess. 49 (1935); H.R. REP. NO. 1318, 74th Cong., 1st Sess. 27 (1935).

34. It should be noted that in the instant case there was not a "mere" interconnection. Rather the connection was an extremely complex, interdependent, and pervasive one. See, Examiner's Report, *Florida Power & Light Co.*, 37 F.P.C. 544 at 560 (1967).

35. H. LANDSBERG & S. SCHURR, *ENERGY IN THE UNITED STATES: SOURCES, USES AND POLICY ISSUES* 211 (1968).

36. FEDERAL POWER COMM'N, *FEDERAL REGULATION OF THE ELECTRIC POWER INDUSTRY UNDER PARTS II AND III OF THE FEDERAL POWER ACT 2-3* (1965).

37. 1 FEDERAL POWER COMM'N, *NATIONAL POWER SURVEY 14*. But see Note, *Electric Utility Interconnections: Power to the People*, 21 *STAN. L. REV.* 1714, 1718 n.32 (1969).

38. 1 *NATIONAL POWER SURVEY*, *supra* note 37, at 14-15, 30.

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tion.³⁹ Interconnection can lower the cost of generation significantly. It allows for the use of large-scale equipment which results in a lower cost per unit.⁴⁰ Additionally, because of shared capacity, this equipment can be operated continuously.⁴¹ Also, since total reserve capacity can be less, there is less cost for idle equipment.⁴² The FPC estimates "potential net economies" from interconnection to be about \$11 billion annually after 1980.⁴³

Third, interconnection may improve the reliability of service since blackouts due to breakdowns or overloads (such as occurred in 1965—the famous "Northeast Power Failure") can be prevented. Unit costs of generating and transmitting electricity have steadily declined despite increased unit costs of resource inputs.⁴⁴ Since the demand upon the industry for electric power is expected to double over the next decade,⁴⁵ the need for further interconnection becomes apparent.⁴⁶

Finally, the present inadequacies of the power systems and the attendant power crises are evoking both public and professional calls for more stringent regulation:⁴⁷

Given the monopolistic character of the industry, the vast amount of capital it must invest to meet demands in the next decades, the lack of adequate governmental regulatory authority to represent the public interest, and the voluntary nature of the industry's activities, the present organizational structure of the industry and the regulatory pattern within which it operates are not adequate for the needs of society.

This threat is likely to induce the industry to subject itself to the lesser present regulation, rather than to an unknown future.

As a consequence of the above factors, the Fifth Circuit's fear that

39. *Id.* at 167, 170.

40. *Id.* at 60-70.

41. *Id.* at 172-73.

42. *Id.* at 175-97.

43. *Id.* at 6.

44. *Id.* at 11.

45. *Hearings on S. 3354 before the Senate Comm. on Interior and Insular Affairs*, 91st Cong., 2d Sess., pt. 1, at 219 (1970); statement by Donald Cook, President of American Electric Power Co., in *N.Y. Times*, Jan. 11, 1970, § 12, at 36, col. 3. See also 1 NATIONAL POWER SURVEY, *supra* note 37, at 36. See generally 2 *Id.* at 129.

46. It is interesting to note that had the court found FPL under the jurisdiction of the FPC, the latter, under certain specific conditions, could have *ordered* it to interconnect with other systems. See generally 21 *STAN. L. REV.*, *supra* note 37, at 1714.

47. *Miller*, *supra* note 31, at 640-41.

broadened FPC jurisdiction will reduce voluntary interconnection appears to be groundless,⁴⁸ and the decision is therefore left without any underlying policy basis.

Moreover, there are cogent reasons for allowing the FPC to take broad jurisdiction to regulate the electric power industry. That industry is the largest in the United States with a gross capital investment of over \$100 billion.⁴⁹ Although a utility is essentially a monopoly in its service area,⁵⁰ the industry as a whole is composed of many largely privately-owned companies.⁵¹ Unless there is effective regulation, adequate coordination between utilities may not be achieved. The results of the lack of regulation and planning in the industry were most dramatically illustrated by the Northeast power failure of 1965 which affected an eight state area with a population of 30 million.⁵²

While extension of FPC jurisdiction alone would probably be insufficient to prevent another such tragic occurrence, the broadened jurisdiction would at least allow maximum regulatory reach by the Commission under present law, until Congress recognizes the need for and fashions stronger and more suitable statutes.⁵³

48. The court was probably influenced, *sub silentio*, by the fact that the impending threat of federal regulation did influence Connecticut Light and Power to withdraw from interconnection. See note 9, *supra*. That occurrence was in the early 1940's however, and the economic and technological situation is vastly different and much better understood today. See text accompanying notes 37-47, *supra*.

49. *Hearings on S. 3354 before the Senate Comm. on Interior & Insular Affairs*, 91st Cong., 2d Sess., pt. 1, at 195 (1970).

50. 1 NATIONAL POWER SURVEY, *supra* note 37, at 11-12.

51. Main, *A Peak Load of Trouble for the Utilities*, FORTUNE, Nov. 19, 1969 at 116.

52. At 5:16 p.m. on November 9, 1965, the lights went out all over the Northeastern United States. In some places they stayed out for thirteen hours. 80,000 square miles and 30 million people were directly affected. 1 FEDERAL POWER COMM'N, THE PREVENTION OF POWER FAILURES 171-72 (1967).

According to the FPC, the gigantic failure occurred because the transmission network and the interconnections were just too weak to stand the strain. The Commission noted: The technology of reliability . . . calls for a high degree of coordination in planning and functional cooperation. . . . [W]ell planned systems with automatic controls and interconnected over a wide area.

Id. at 1-2. These requirements did not exist.

53. In addition to the need for stronger regulation to avert further power failures, such regulation is apparently becoming more urgent to avoid the potentially severe pollution problems arising from a thoughtlessly planned power industry, which the FPC recognized as early as 1964. 1 NATIONAL POWER SURVEY, *supra* note 37, at 137-47.

CONCLUSION

It seems clear that the Fifth Circuit erred in holding that an electric power company operating in synchronized electromagnetic unity with another which receives power from out of state is beyond the jurisdiction of the FPC. First, by requiring factual proof of actual interstate power flow, the court is requiring the Commission to do the impossible. The court should have accepted the most advanced and generally recognized scientific and engineering theories available, as commanded by the Supreme Court,⁵⁴ rather than requiring a legalistic test of knowledge beyond doubt. Second, the expressed policy considerations which led the court to its decision seem to be without basis in fact. Finally, the decision, if accepted, will have the effect of greatly restricting the regulatory reach of the FPC at just that time when pressing social needs demand that it be expanded to meet the impending crisis in the supply of power to the people of the United States.

54. See note 7 and accompanying text, *supra*.