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BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

SECRETARY'S OFFICE
Public Utility Commission

Pa. Public Utility Commission

v.

Metropolitan Edison Company

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:
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R-78060626

A.21

MEMORANDUM OF LAW:
CRITERIA FOR DETERMINING WHEN A NUCLEAR
FACILITY IS USED AND USEFUL

On August 30, 1978, the presiding Administrative Law Judge in the above-captioned case instructed all parties to develop and transmit suggested criteria for determining when a nuclear facility is "in commercial service." The term was further clarified on the record by the notation that "in commercial service" is equal to "used and useful" for the purposes of rate making procedure, Tr. 4.

At the outset, it is important to distinguish between the terms "in commercial service" and "used and useful." The term "in commercial service" has been used by the Company to indicate when a plant, according to Company standards, has completed its precommercial testing program and is ready to operate at 100% power. See Met-Ed Exh. E-19. The term "used and useful," on the other hand, has traditionally been employed by the Commission to denote the Commission decision that a given plant is eligible for inclusion in rate base. It is the latter

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concept, when a plant becomes used and useful, which will be discussed in this memorandum because it is this concept, and only this concept, which has significance for rate making purposes.

The determination of when a generating facility becomes used and useful in the public service is a legal decision based on technical criteria resulting in financial implications to the Company and its ratepayers. It is important to keep the legal, technical and financial roles separate.

The legal foundation for the concept of "used and useful" was laid by the United States Supreme Court in Smyth v. Ames, 169 U.S. 466 (1897). Recognizing that a public utility is not necessarily entitled to earn a rate of return from its ratepayers on all utility property just because that property is owned by the utility, the Court held

... that the basis of all calculations as to the reasonableness of rates ... must be the fair value of the property being used by it for the convenience of the public. Id. at 546.

What the Company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. Id. at 547.

Consistent with this principle, the general practice has been to withhold from the rate base plant construction costs until the plant itself has become part of the used and useful property. James Bonbright, Principles of Public Utility Rates, 178 (1969).

Pennsylvania courts and the Pennsylvania Public Utility Commission have consistently applied the concept that a plant must be used and useful to be eligible for inclusion in rate base. Most recently, in the last Metropolitan Edison (Met-Ed) rate case, R.I.D. 434, the Commission excluded TMI #2, the same plant that is at issue in this case, from the rate base. In so doing, it recognized and

"generally agreed" with the conclusion of the Consumer Advocate and Commission trial staff that the plant could not be included in rate base because it was not used and useful in the public service. Pennsylvania Public Utility Commission v. Metropolitan Edison Company, R.I.D. 434 at 5 (Sept. 18, 1978).

It is clear from the Commission's decision in RID 434 that the plant must, at the very least, have completed the Company's precommercial testing program and reached the 100% level of generation, i.e. it must have met the Company's definition of "in commercial operation." See RID 434 at 6 (Sept. 18, 1978). Met-Ed's experience with the main steam safety valve in the latter days of testing TMI #2 under the origin schedule, in and of itself, is sufficient reason to require completion of the testing program and attainment of the 100% level of generation prior to declaring a plant used and useful. However, the Pennsylvania Public Utility Commission has not had the opportunity to go beyond that point to indicate what other criteria should be used in determining when an operating plant can properly be considered to be "employed for the convenience of the public" and, thus, to have attained used and useful status for ratemaking purposes.

The Federal Power Commission (FPC), now the Federal Energy Regulatory Commission, on the other hand, has considered this problem at length. Although the FPC has recognized that there is no set formula for determining when a plant becomes used and useful, it has identified certain criteria which must be employed in determining used and useful status. As stated in Re Pennsylvania Water & Power Co., 82 PUR NS 193, 237 (1949 FPC), in which the FPC considered whether a 5 unit power plant was used and useful,

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"...reasonable time should be allowed for test periods and trials, the correction of defects and adjustments, and time for the plant to become sufficiently completed to be reasonably reliable for service for the purpose for which it was intended."

In other words, reliability is a necessary component of used and useful status.

The pertinent facts which the Federal Power Commission examined in determining whether the plant's service and reliability were adequate to justify inclusion of the plant in rate base were: (1) the length of time each unit of the plant had been operating; (2) the actual capacity of each unit as a function of its rated capacity; and (3) the presence or absence of outages and the cause of each outage. Id. at 234-6. In each instance, the Commission found that every unit, except one, had been in operation for at least one month, that each unit had been operating at its rated level and that the outages, if any, were insignificant or natural in origin.

Mr. Arnold has testified that as of October 22, 1978, TMI #2 was at the 75% power test plateau, where it will remain for approximately 12 days. Then it will proceed to the 100% level where it will remain for an additional 10-12 days of testing. Tr. 1259. In his direct testimony Mr. Arnold stated that the precommercial test program will be completed by November 10, 1978. After that time, a 13 day outage is scheduled, and commercial generation will begin on November 23, 1978. Met-Ed Exh. E-19.

Therefore, according to Met-Ed's present schedule on or about November 23, 1978, TMI #2 will have met the first two criteria outlined above: It will be in operation and it will be generating at its rated capacity. However, at that point in time, Met-Ed will not have had

sufficient experience with TMI #2 to judge whether the unit will operate reliably at its rated capacity.

Met-Ed's witness, Herbein, stated in his direct testimony that 80% is the assumed capacity factor for TMI #1 and #2 between the normal six week refuelings. Met-Ed statement D at 12. This 80% factor includes a measurement of reliability since the percentage reflects a 20% outage factor coupled with 100% generation the remainder of the time. Therefore, if TMI #2 operates at 80% - 100% capacity over a given period of time, it will have met the test for reliable service.

Use of the 80% capacity factor as a measurement of reliable operation is conservative given the Company's experience with TMI #1. Rated at an 80% capacity factor between refuelings, TMI #1 has had an 83% capacity factor in the first cycle, an 86% capacity factor in the second cycle and an 89% capacity factor in the third cycle. Tr. 526. Nevertheless, since 80% is the rated capacity for TMI #2 between refuelings and since TMI #2 is just starting up, an 80% capacity factor is an adequate benchmark.

The use of the actual capacity factor experienced between refuelings would delay the determination of used and useful status until the fourth quarter of 1979. Such a delay would benefit neither the ratepayers nor the Company. However, some time span between commencement of full operation and declaration of used and useful status is necessary to assure the reliability of service. It is, therefore, suggested that a minimum of one month with an 80% actual capacity factor be required. In addition, the Company should assure the Commission that no substantial outages are scheduled or anticipated which would preclude the possibility of maintaining 80% capacity between refuelings.


One note should be made with regard to the financial impact of not declaring a plant used and useful the moment the plant completes its testing program. The Company has frequently argued that the costs of adding a new plant must be borne by the customers who are deriving the energy cost benefits from that plant. Maintaining that the customers automatically receive the energy benefits when the plant becomes operational, Met-Ed concludes that they must also bear the rate base costs at that time.

This argument, however, ignores the fact that energy clause savings are not immediately reflected in customer rates. In general, the energy clause is based on a six month rolling average. In addition, there is a two-month lag between the accrued energy costs and the billed costs. Therefore, if TMI #2 were to become commercial at the end of November, the energy savings from the use of nuclear fuel would not begin to be reflected in customer bills until January of 1979 and would not be fully reflected until July of 1979. Furthermore, since Met-Ed has adopted a transitional energy clause which levelizes the clause from July of 1978 to May of 1979, Met-Ed customers will not be affected by actual nuclear fuel savings until May of 1979. Therefore, alleged energy clause savings due to operation of TMI #2 should not affect the determination of when TMI #2 is eligible for inclusion in rate base.

In applying the criteria of reliability and full operation to the timetable projected for TMI #2, the facility should be used and useful by the end of December, 1978. If, however, TMI #2 fails to become fully operational by the end of November or fails to give reliable service, i.e. maintain as a minimum an 80% capacity factor, during December, the facility should not be determined to be used and useful until such time as it can meet these criteria.

It is clear that the status of TMI #2 should be closely monitored by the Commission at least through December of 1978. In the event that evidentiary hearings will be completed before that time, the record in R-78060626 should be kept open for the sole purpose of monitoring the actual operations of TMI #2 through December and the projected operations and outages through its first year of service.

Respectfully submitted,



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Assistant Consumer Advocate

DATED: October 31, 1978

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