

Q. Page 13, Lines 4 to 9: Please provide examples of rulings or decisions regarding the use of historic test years with adjustments and any information available from other jurisdictions regarding the scope and nature of such adjustments.

A. Two examples of decisions regarding the use of historic test years with adjustments in other jurisdictions are provided in Attachments A and B to this response as follows:

Attachment A: State of New York Public Service Commission
Statement of Policy on Test Periods in Major Rate Proceedings
November 23, 1977

Attachment B: State ex rel. Utilities Com'n v. Carolina Utility Customers Association
No. 674A84 Supreme Court of North Carolina
August 13, 1985

In addition to the examples above, the National Association of Water Companies' survey provided in Attachment A of Request for Information NLH-NP-004 provides details of numerous jurisdictions with historic test years that make adjustments for "known and measurable changes," as well as other normalizing type adjustments.

General comments on normalizing adjustments to test year data in Mr. Brockman's evidence were derived from a review of several industry sources. This includes the *Rate Case and Audit Manual of National Association of Regulatory Utility Commissioners* (2003) and the *Federal Energy Regulatory Commission Cost of Service Rates Manual* (1999).

Additional information was gathered from the research paper, *Forward Test Years for US Electric Utilities, Prepared for the Edison Electric Institute* by Pacific Economics Group, August 2010 where it is stated on page 5:

"In states where regulators aren't ready to abandon historic test years but are sympathetic to the attrition problems caused by rising unit costs, alternative measures are available to relieve the financial attrition. Options include the following:

- 1. Make sure that historical test year calculations incorporate the full array of normalization, annualization, and known and measureable change adjustments that are used in other jurisdictions."*

The *Regulated Utilities Manual*, by Deloitte & Touche USA LLP was also consulted and contains the following passage on page 13 on the use of historic average test years:

"This approach uses the most recent 12-month period for which financial data are available at the time of filing for a rate proceeding. Investment in plant and working capital is tabulated for each month (usually using a 13 month-end simple averaging

1 *technique), and the rate base thus measured is compared with earnings. Operating*
2 *results (expense, depreciation, taxes, and return) are presented in conjunction with this*
3 *average investment rate base, and it is primarily based on recorded results for the*
4 *period, although adjustments of these results that are designed to shape the recorded*
5 *year into a “normal” representation of the period are often recognized.”*

**State of New York Public Service Commission
Statement of Policy on Test Periods in Major Rate Proceedings
November 23, 1977**

Opinions

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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STATEMENT OF POLICY ON TEST
PERIODS IN MAJOR RATE PROCEEDINGS

(C.26821)

Issued: November 23, 1977

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Opinions

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

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STATEMENT OF POLICY ON TEST
PERIODS IN MAJOR RATE PROCEEDINGS

Issued: November 23, 1977

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

COMMISSIONERS:

Charles A. Zielinski, Acting Chairman
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Anne F. Mead

STATEMENT OF POLICY ON TEST
PERIODS IN MAJOR RATE PROCEEDINGS

(Issued November 23, 1977)

The concept of "test year" in evaluating the revenue requirements of utilities seeking rate increases has, over the past several years, given rise to a host of problems. This Commission's decisions from 1970 to the present give witness to these difficulties and to the methods that have been employed in that period to attempt to resolve them.

The first conceptual problem confronted by the Commission in the early 1970's was the increasingly obvious unsuitability of fully historic "test years" for measuring the revenue requirements of utilities in periods of extraordinary capital expansion and rapid changes in operating conditions.^{1/} Various techniques were later employed to bring into the revenue requirement calculation more recent information, such as major post-test year additions to rate base or cost estimates of otherwise known changes in major operating expenses.

1/In periods of relatively stable prices, the revenue requirements of utilities were measured on the basis of some period in the recent past on the generally correct assumption that the future would be sufficiently like the past to allow prediction of the future on the basis of consideration of changes in a few key cost rates.

Other changes in operating costs were, with increasing frequency, factored into an historic base "test year," which had already been "normalized," scrutinized and tested by staff and intervenors during the rate case hearing process.

Finding this technique insufficient to keep pace with rapidly changing conditions, we urged utilities, in Case 26105, Consolidated Edison Company of New York, Inc., 12 NY PSC 630, 639 (1972), to submit, in addition to an historic test period, a projected test year consisting of the most recent 6-months' actual experience and 6-months' forecast data. This policy was adopted to permit the parties and the Commission to review and react to operating results as they unfolded during the hearing process, on the theory that the most recent results would be a better proxy for the future than a fully historic test period, even if it had been adjusted for known changes in major elements of cost. Monthly submissions of actual operating results were solicited to test the validity of the projections originally submitted. This type of rate case filing has become common for the utilities we regulate.

In 1973, we explicitly recognized that, notwithstanding our primary reliance on historical data, our duty in rate cases is to set rates for the future:

"The conclusions we reach are necessarily a forecast of what the operations of the company will be, the revenues it will receive, the expenses and problems it will encounter during the time when the rates we establish will be in effect."
Case 26370, New York Telephone Company,
13 NY PSC 1869, 1884 (1973).

While rejecting full reliance on forecast data in that case and in a Consolidated Edison electric rate case

decided a few months earlier,^{1/} we indicated our willingness to receive and consider reliable projections of future operating conditions as the basis for setting rates.

More recently, we have reiterated, in virtually every rate proceeding decided in the past three years, that our goal in setting rates would be to ascertain, as best we could, what the utility's revenues, operating expenses and conditions would be in the period for which we were setting rates: the first 12 months after the new rates became effective. To reach that end, we have looked to historical data, emerging actual results and known and projected changes in operations and costs.

While our standard has been well understood, we have also witnessed the emergence of a number of new problems, some of which have their roots in our decision to permit the filing of a test year consisting of 6-months' actual and 6-months' estimated data. The most recent Consolidated Edison electric rate case - Case 27029 (Opinion No. 77-3, issued April 29, 1977) provides a particularly troubling example of these difficulties. In that case, the Administrative Law Judge and the parties were faced with a record that contained data on no fewer than eight different test periods. Clearly, in view of our stated intention to set rates on the basis of the utility's projected rate base, revenues and expenses in the first 12 months of new rates, such a wide choice of test years served no useful purpose; indeed, it created an unnecessary and time consuming burden for all participants in the rate proceeding.

Some of the multiplicity of test years in Case 27029 was due to the updating of partially forecast

^{1/}Case 26309, Consolidated Edison Company of New York, Inc., 13 NY PSC 1491 (1973).

test periods, as actual results became known. This procedure, contemplated by the 6-months' actual and 6-months' estimated rule announced in Case 26105, has, we now conclude, proved largely unworkable. Our experience demonstrates that the unfolding actual results typically are received too late in the proceeding to permit the parties to analyze and evaluate disparities between the actual and projected figures or to permit adjustments made necessary by the actual results to be incorporated into the primary presentations. As a result, the efforts of parties have, in some cases, been reduced to arguing for one set of figures over another on the basis of which would produce the greater or lesser revenue requirement. This activity not only constitutes an inefficient use of the resources of the parties, the Administrative Law Judges and the Commission, but it has become a hindrance rather than an aid in the Commission's deliberative process.

We observed in our decision in Case 27029 that the debate among the parties in that case about the merits and the practical effects of one set of test year figures compared with another had obscured the principal goal of the ratemaking function: to set rates that will produce the required revenues in the period during which those rates will be in effect.

To avoid any further waste of valuable rate case time on this issue, we conclude that we must set a clear, specific policy on test years, designed to enhance our ability to set rates properly for the future. And we find that our deliberations will be served best by a rate case filing consisting of: (1) operating results, with normalizing adjustments, for a twelve-month period expiring at the end of a calendar quarter no earlier in time than 150 days before the date of filing and (2) the

projected operating results for the new 12-month rate period. But the presentation must include a verifiable link between the two periods.

The procedure we envision would detail both past test year results and forecast expectations by elements of costs (labor, materials, etc.), as set forth below, and would be accompanied by testimony and exhibits justifying quantities, assumptions, expectations, activity changes, etc.

The projected operating results for the new rate period will necessarily be a forecast of future operations. Accordingly, and consistent with recent decisions we have made on the acceptability of fully forecast data, the projections should meet certain standards.

The most recent 12-months operating experience, including rate base, should be presented in conformity with the applicable Uniform System of Accounts in at least the following detail:

Operating Revenues

Operating revenues should be detailed by the accounts prescribed in our Uniform System of Accounts, by month.^{1/} Where applicable, related volumes should also be shown for electric, gas, steam and water corporations. These corporations should also provide a breakdown of sales revenue by service classification and related volumes.

^{1/}Monthly figures will aid evaluation of seasonal factors prevalent in heating and air-conditioning loads, as well as those sensitive to daylight hours.

Operating Expenses

Operation and maintenance expenses should be broken down at least by functional groups.^{1/} Those functional groups which are subdivided between operation and maintenance should be further subdivided for this purpose.

Each subdivision should then be further subdivided by elements of cost which should at the minimum consist of payroll, outside vendors, important clearing accounts such as transportation, and all other elements of cost as one category. Under each functional group, accounts prescribed for largely homogeneous costs should be shown.^{2/}

Depreciation, operating taxes and income taxes should be supported by schedules breaking these items down into sufficient detail to be useful for making projections.

Rate Base

Rate base should be shown in the detail now provided for historical test year presentations. Major plant additions from the end of the historic period should be separately identified, indicating actual or estimated in-service dates.

Cost of Capital

To assure that a complete and useful record is compiled, the following information should be submitted at the time of the filing:

A. A Source and Use of Funds Statement including:

- a) The latest available construction estimates with detail of major items and the AFC component. Any discrepancy between the amounts forecast and those included in the most recent Section 149-B filing should be explained.

^{1/}For example, for electric: Production (steam, nuclear, hydraulic and other shown separately) Transmission, Distribution, Customer Accounts Expenses, Customer Service, Sales Promotion, and Administrative and General (Operation and Maintenance, where applicable) are to be shown separately.

^{2/}Examples of these accounts include, but are not limited to: fuel, purchased power, gas and water, general office supplies and expenses, pensions, administrative expenses transferred credit, outside services employed, property insurance, injuries and damages, regulatory commission expenses.

- b) Internal sources of funds, e.g., depreciation accruals, retained earnings, deferred taxes, etc. The basis for the retained earnings estimate should be described, including the assumed return on common and payout ratio.
 - c) Estimated short term debt balances, and available lines of credit.
 - d) External financing requirements: projected issues of debt, preferred and common equity, including sources such as dividend reinvestment and employee stock purchase plans as well as public offerings.
- B. Projected capitalization ratios and a statement of the company's objectives.
- C. Estimates of interest and preferred dividend coverages computed in accordance with the applicable bond indenture or certificate of incorporation. Also, the computations of ratios of earnings to fixed charges (or earnings to fixed charges and preferred dividends) normally found in SEC registration statements for public security issues should be included.

The requested information should be supplied at least for the annual period for which rates are to be set. It would also be desirable to have comparable data for two subsequent calendar years; for example, if the rate year ended June 30, 1978, projections might also be made for calendar years 1979 and 1980.

The forecast material should be developed from the historical base. For example, for operation and maintenance expenses, changes in prices and in activity levels should be fully and separately detailed by functional groups and elements of cost.^{1/} For revenues, taxes and rate base, a

^{1/}For the sake of uniformity we would like changes in prices expressed in terms of volumes in the historical year. Changes in volume should be expressed in terms of prices during the forecast period. An analysis similar to that for operation and maintenance expenses is necessary for major clearing accounts for which clearings are shown as a separate element of cost, in the analysis of operating expenses.

suitable analysis of the change between the historical and forecast period should be made which similarly distinguishes between volume and price changes to the extent that is practicable. All assumptions of changes in price inputs because of inflation or other factors or changes in activity levels due to modified work practices or other reasons should be separately developed. Our staff and other parties in rate cases should be able to retrace projections back to their historical source. All assumptions, escalation factors, contingency provisions and changes in activity levels should be quantified and properly supported.

Ordinarily, the format used in presenting company budgets of future operations produced for a utility's internal purposes will not meet these requirements without substantial modification.

During the proceeding we will entertain revisions to the originally filed forecasts. Revisions should be presented as adjustments to the company's original presentation (rather than as a revised presentation) so that there is a verifiable link between the original presentation and the revised figures. We perceive three categories of revisions: known changes in cost rates, changes in estimate of specific items, and complete revisions.

Revisions for known changes in cost rates (such as for wage increases and tax increases), to the extent they are material, may be made as late as the company's initial brief on exceptions. If presented as adjustments of the original filing, they are relatively easy for our staff to verify, and our staff as well as other parties will have an opportunity to note any disagreement in their replies to exceptions.

Revisions for changes in estimate will only be entertained when they are based on data which were not available at the time of the original filing. On occasion, significant events may occur between the time of the original filing and the revised estimate which could not have been foreseen at the time of the original filing. If it can be shown that such events significantly affect not only the estimate but also the projected return on equity at existing rate levels, they may be considered even if that requires the use of new data sources or data sources which were available at the time of the original filing but which were then insignificant to the estimate. Changes in estimate should be presented no later than at the hearing at which staff's direct case is cross-examined. This will give the parties an opportunity to cross-examine the company on the changed estimates at the time of the company's rebuttal.

Wholesale revisions because of changed circumstances (for example a later view of the company's budget) will not be entertained unless an event beyond the control of the company has occurred, or is expected to occur, which materially alters the originally forecast return on equity at existing rate levels, and at the same time invalidates so much of the originally filed data that it is impractical to adjust those data. If such a material event occurs, it is incumbent on the company, immediately, to notify all parties that such an event has occurred and that it intends to revise large portions of its rate case presentation. After consulting with the parties it may be advisable for the Administrative Law Judge to call a conference of the parties to determine whether any party objects to the company's proposal to revise its forecast and, if so, to discuss other procedures for dealing with the material event for purposes of the rate proceedings, and to re-schedule hearings.

Similar standards of materiality should be applied by companies in determining whether revisions to their original forecasts should be filed, irrespective of whether the effect of these changes is to justify the amount of additional revenues requested or a lesser amount.

Consistent with our recent order affirming an Administrative Law Judge's ruling in Cases 27215, 27216 and 27217, Niagara Mohawk Power Corporation, utilities may present information on actual results that bridge the gap between the historical and forecast period; but that information should be employed only to test and verify the information principally relied upon and not itself as a "test period". If such unfolding actual results are submitted, they should be in a form that can be compared readily with the historic base and the forecast presentation.

Utilities have the burden of proof in rate cases and, accordingly, are at liberty to present their cases in a manner of their choice, so long as the presentation complies with our Rules of Procedure. But we have a responsibility under the Public Service Law to set reasonable rates for the future and we hereby serve notice that we will not look with favor upon requests for rate allowances to offset the effect of attrition or erosion unless the kind of detailed projections of expected future conditions that we describe in this statement are provided.

We think it proper to give the companies a reasonable period of time to study and analyze these guidelines before expecting them to be in a position to follow them. Accordingly, we would expect that applications for major rate changes filed after March 1, 1978 would be responsive to this statement of policy.

**State ex rel. Utilities Com'n v. Carolina Utility Customers Association,
No. 674A84, Supreme Court of North Carolina
August 13, 1985**

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STATE EX REL UTILITIES COM'N v. CAROLINA UTILITY CUSTOMERS ASS'N

NO. 674A84.

333 S.E.2d 259 (1985)
314 N.C. 171

STATE of North Carolina, ex rel. UTILITIES COMMISSION; Duke Power Company; Abitibi-Price Company; Air Products and Chemicals, Inc.; American Cyanamid Corporation; BASF Wyandotte Corporation; City of Durham; Clark Equipment Company; Florida Steel Corporation; Ingersoll-Rand Corporation; Kudzu Alliance; North Carolina Municipal Power Agency No. One; Olin Corporation; Owens-Illinois, Inc.; PPG Industries, Inc.; Public Staff North Carolina Utilities Commission; Rufus L. Edmisten, Attorney General; and the General Tire and Rubber Company

v.

CAROLINA UTILITY CUSTOMERS ASSOCIATION, INC. and Great Lakes Carbon Corporation.

Supreme Court of North Carolina.
August 13, 1985.

Steve C. Griffith, Jr., George W. Ferguson, Jr., William L. Porter, Ronald L. Gibson, and Kennedy, Covington, Lobdell & Hickman by Clarence W. Walker and Myles E. Standish, Charlotte, for applicant-appellee Duke Power Co.

Thomas R. Eller, Jr., Raleigh, for intervenor-appellant Carolina Utility Customers Ass'n, Inc.

Byrd, Byrd, Ervin, Blanton, Whishant and McMahon, P.A. by Sam J. Ervin, IV, Morganton, for intervenor-appellant Great Lakes Carbon Corp.

MITCHELL, Justice.

On November 30, 1983, Duke Power Company (hereinafter "Duke") filed an application with the North Carolina Utilities Commission (hereinafter "Commission") for an increase in its rates and charges for electric service to its retail customers in North Carolina so as to increase annual revenue by approximately \$213,000,000 or 13.6%. In the application Duke proposed to make the rate increase effective December 30, 1983. In an order dated December 27, 1983, the Commission determined that the application constituted a general rate case, denied Duke's request for interim rates to become effective at the beginning of commercial operation of Unit Two at Duke's McGuire Nuclear Station, suspended the proposed rate increase for a period of up to 270 days, and ordered public hearings on the proposed rates and publication of notices of such hearings. The Commission set the test period as the twelve month period ending June 30, 1983. Various parties were permitted to intervene in the proceeding, including the appellants, Carolina Utility Customers Association, a group of industrial electricity users, and Great Lakes Carbon Corporation, a customer of Duke. Public hearings were held by the Commission in various areas of the State in March and April, 1984.

On June 13, 1984, the Commission issued an order which among other things granted Duke an increase in annual gross revenues of \$130,969,000 from its North Carolina retail operations. The Commission also ordered Duke to make electric service available under Duke's time of use rate schedules for general service (rate schedule "GT") and industrial (rate Schedule "IT") customers. The order required that electricity be provided at the rates set in those schedules to all general service and industrial customers served by Duke and otherwise qualifying for such rates, provided that Duke did not incur any additional expenses not recovered through its approved rates and charges. On June 14, 1984, Duke filed a motion for reconsideration requesting that the Commission strike that part of the order requiring it to make service at the rates in its time of use schedules GT and IT available to such customers. On June 15, 1984, the Commission issued an order temporarily holding in abeyance that portion of its prior order regarding the availability of service at time of use rates.

After various motions by the intervenors, the Commission scheduled oral arguments on the issue of the time of use rates. On August 28, 1984, the Commission heard oral arguments from Duke, the Public Staff and various intervenors including the appellants. On October 8, 1984, the Commission issued an order which provided that electric service under time of use rate schedules GT and IT need not be made immediately available to all general service and industrial customers being served from Duke's transmission facilities but was to be made available to those customers at the time of Duke's next general rate case. On October 12, 1984, Duke filed revised rate schedules with the Commission in an attempt to comply with the October 8 order. That same day the Commission entered an order approving the revised rate schedules.

Appeal was taken from the following orders: (1) the June 13, 1984 order which granted the \$130,969,000 annual gross revenue increase, (2) a June 15, 1984 order which approved rate schedules submitted by Duke in accordance with the June 13 order, (3) the July 3, 1984 order scheduling a hearing on reconsideration concerning Duke's request to strike that part of the June 13 order concerning electric service under time of use schedules, (4) the October 8, 1984 order rescinding that part of the June 13 order requiring that electric service under time of use rate schedules be made available to all general service and industrial customers served by Duke's transmission facilities, and (5) the October 12, 1984 order approving Duke's revised rate schedules.1

The appellants first argue that the Commission committed prejudicial error in failing to exclude from Duke's rate base a portion of the undepreciated cost of the McGuire Nuclear Station and a percentage of McGuire's operating costs. This argument is based on the appellants' contentions concerning certain contracts known as the Catawba Sale Agreements which were entered into by Duke and the other owners of the Catawba Nuclear Station. It is therefore necessary to examine the history and provisions of those agreements.

Unit Two of the McGuire Nuclear Station became fully commercial on March 1, 1984. While the McGuire Station was being completed, Duke entered into a series of contracts known as the Catawba Sale Agreements. The first sale under those agreements occurred in 1978 when Duke sold a 75% interest in Unit Two of the Catawba Nuclear Station to the North Carolina Municipal Power Agency No. 1, a joint agency composed of a group of North Carolina municipalities which had been wholesale purchasers of power from Duke. The Commission approved the sale finding that it would serve the public interest by reducing the cost of electricity to both the members of the North Carolina Municipal Power Agency No. 1 and Duke customers.

Acting under the sale agreements Duke in 1981 sold a 75% interest in Unit One of the Catawba Nuclear Station to its North Carolina and South Carolina cooperative customers. The Commission also approved this sale finding that it was in the public interest. The Commission found that the sale would relieve Duke of some of the burden of obtaining financing for its construction program. The Commission further noted that the joint ownership of Catawba Unit One would benefit Duke customers as well as the cooperatives.

Under the sale agreements Duke in 1982 sold its remaining 25% interest in Unit Two of the Catawba Nuclear Station to the Piedmont Municipal Power Agency, a joint agency formed by a group of Duke's South Carolina municipal customers. At the time of the hearing before the Commission in the present proceeding, this sale had not been consummated due to an appeal from the order of the South Carolina Public Service Commission authorizing the transaction. That order was later approved by the Supreme Court of South Carolina in *Palmetto Alliance, Inc. v. South Carolina Public Service Commission*, 282 S.C. 430, 319 S.E.2d 695 (1984). As a result of these sales Duke is left with a 25% ownership interest in Catawba Unit One and no ownership interest in Catawba Unit Two.

In order to minimize the impact of power outages at the McGuire and Catawba Stations to both Duke and the municipalities and cooperatives, a provision in each of the Catawba Sale Agreements provides for an exchange of power between the facilities in the event of such an outage. Under this exchange agreement if the McGuire Station is out of service, Duke will be entitled to a percentage of the electricity generated by each of the Catawba units equivalent to Duke's percentage ownership interest in the combined capacity of the McGuire and Catawba Nuclear Stations. Similarly, if the Catawba Station is out of service, the municipalities and cooperatives will be entitled to a portion of the electricity generated by the McGuire Station equivalent to their percentage ownership interest in the combined capacity of the McGuire and Catawba Nuclear Power Stations.

Under the exchange agreement the municipalities and cooperatives pay to Duke the production costs of any power purchased by them from the McGuire Nuclear Station. Similarly, Duke pays the municipalities and cooperatives the Catawba Nuclear Station's production costs of any power purchased from their ownership interest in Catawba. The production costs paid by both parties generally cover the marginal cost of the generation of electricity at each plant and do not reflect the fixed costs of the plant.

At the time of the hearing, the McGuire Nuclear Station had been completed but the Catawba Nuclear Station was still under construction. Catawba Unit One was expected to come into service in 1985, Catawba Unit Two in 1987.

At the hearing John Wilson testified on behalf of Carolina Utility Customers Association. He advocated that the Commission readjust Duke's retail jurisdictional test year cost allocation so as to remove that portion of McGuire's plant and operating expense allocation that is associated with capacity and energy sold to the Catawba purchasers. This proposal was designed to reflect the fact that power from McGuire was being sold to the Catawba purchasers at a price which did not include Duke's fixed costs. Under Wilson's proposed adjustment Duke's North Carolina retail revenue requirement would be decreased by \$33,521,000 per year.

William Stimart, Duke's Vice President for Regulatory Affairs, testified in opposition to the adjustment proposed by Wilson. He stated that because it provided an assured source of power in the event of an outage at the McGuire Station, the exchange agreement would provide net benefits to both Duke and its retail customers. He also testified that the Catawba Sale Agreements should be viewed in their entirety, not on a "piece-meal basis". He further testified that the Catawba Sale Agreements benefited retail ratepayers by enabling Duke to complete the Catawba Station without having to issue substantial sums of additional debt and by allowing the other joint owners of Catawba to finance their share of the plant at a lower capital cost than is available to Duke.

With regard to the exchange agreement the Commission found:

The Commission concludes that it is proper to reflect the Catawba-McGuire Reliability Exchange provisions of Duke's contracts for the purchase and sale of the Catawba plants to the North Carolina Municipal Power Agency No. 1, North Carolina Electric Membership Cooperative and Saluda River Membership Cooperative in this proceeding in the manner proposed by the Company and accepted by the Public Staff. In support of this conclusion it is observed that the reliability exchange is embodied in contracts which have been approved by this Commission. These contracts should be either accepted or rejected in their entirety. Undesirable features of the contracts cannot be isolated and removed without changing the overall intent and effects of the contracts. If the Commission were to not reflect the reliability exchange features of the contracts, it would be inappropriate for the Commission to reflect the benefits associated with the sale. Among these benefits are the reliability exchange from the Catawba buyers ownership interests in Catawba to Duke's ratepayers, the reduced cost of building Catawba due to the municipal and EMC financing advantages, and the current low embedded cost of Duke's debt compared to what it would have been had Duke been required to sell bonds. Finally, it is observed that additional benefits associated with Catawba Unit No. 1 will begin accruing to Duke's North Carolina retail ratepayers in the late summer or early fall of 1984. Nuclear fuel is now scheduled to be loaded into Catawba Unit 1 in July of this year. During the pre-commercial testing of the Catawba Unit, which will commence shortly after fuel loading, it is very likely that substantial fuel savings will occur. Such savings will be placed in a deferred account and subsequently amortized as a reduction to the cost of service. As previously stated, it is anticipated that these savings will begin to accrue in late summer or early fall of 1984. Ratepayers should begin receiving the benefit of this deferred reduction in fuel cost in the summer or early fall of 1985.

The appellants argue that the Commission erred in failing to exclude from Duke's rate base a percentage of the undepreciated cost of the McGuire Station to reflect the percentage of electricity generated by the plant that was being sold to the municipal power agencies and cooperatives and by failing to exclude a similar percentage of McGuire's operating costs.

Before examining the appellants' contentions, we deem it wise to take note of certain relevant principles. The Commission, not the courts, has been vested with the authority to regulate the rates of public utilities. N.C.G.S. 62-2. The rates established by the Commission must, however, be fair and reasonable to both the utility and the consumer. N.C.G.S. 62-133. Rates fixed by the Commission are deemed prima facie just and reasonable. N.C.G.S. 62-94(e). The party attacking the rates established by the Commission bears the burden of proving their impropriety. *Utilities Commission v. Duke Power Co.*, 305 N.C. 1, 287 S.E.2d 786 (1982). The order of the Commission will not be disturbed if upon consideration of the entire record we find the decision is not affected by error of law and the facts found by the Commission are supported by competent, material and substantial evidence, taking into account any contradictory evidence or evidence from which conflicting inferences could be drawn. *Id.* Naturally, an appellant may show on appeal that the order is not supported by competent, material and substantial evidence. *Id.*; *Utilities Commission v. Edmisten*, 291 N.C. 424, 230 S.E.2d 647 (1976).

The appellants' argument centers on N.C.G.S. 62-133. N.C.G.S. 62-133(b)(1) provides in pertinent part that in fixing the rates for any public utility the Commission shall: Ascertain the reasonable original cost of the public utility's property *used and useful or to be used and useful within a reasonable time after the test period, in providing the service rendered to the public within this State*, less that portion of the cost which has been consumed by previous use recovered by depreciation expense plus the reasonable original cost of investment in plant under construction (construction work in progress).

(Emphasis added.) N.C.G.S. 62-133(c) states that:

The original cost of the public utility's property, including its construction work in progress, shall be determined as of the end of the test period used in the hearing and the probable future revenues and expenses shall be based on the plant and equipment in operation at that time. The test period shall consist of 12 months' historical operating experience prior to the date the rates are proposed to become effective, but the Commission shall consider such relevant, material and competent evidence as may be offered by any party to the

proceeding tending to show actual changes in cost, revenues or the cost of the public utility's property *used and useful, or to be used and useful within a reasonable time after the test period, in providing the service rendered to the public within the State*, including its construction work in progress which is based upon circumstances and events occurring up to the time the hearing is closed.

(Emphasis added.) N.C.G.S. 62-133 clearly provides that the rate base and allowable operating expenses of a utility are limited to those costs incurred in providing service to the company's North Carolina retail customers. See, e.g., *Utilities Commission v. Edmisten*, 291 N.C. 424, 230 S.E.2d 647 (1976); *Utilities Commission v. Telephone Co.*, 281 N.C. 318, 189 S.E.2d 705 (1972). The appellants' basic contention is that the portion of the operating expenses and undepreciated capital costs of the McGuire Nuclear Station equal to the percentage of McGuire's generation received by the municipalities and cooperatives pursuant to the exchange agreement does not provide service to North Carolina retail customers and must therefore be excluded from Duke's rate base and allowable expenses pursuant to N.C.G.S. 62-133. We disagree.

Our task is to determine whether the evidence before the Commission supports a determination that the portion of McGuire which is utilized to produce energy as required under the exchange agreement is or will be "used and useful" during or within a reasonable time after the test period in providing service to the public within North Carolina. Whether property is "used and useful" in this regard is a question of fact to be determined by the Commission upon competent and substantial evidence. *Utilities Commission v. Telephone Co.*, 281 N.C. 318, 189 S.E.2d 705 (1972). The utility bears the burden of proving that the property is "used and useful." *Id.*

Our analysis begins with a brief examination of the Joint Municipal Electric Power and Energy Act. The Act, codified at Chapter 159B of the General Statutes, was enacted in 1975 and authorizes North Carolina municipalities to act jointly to acquire and own electrical generation and transmission facilities. The Act reflects a legislative finding that due to the increased capital and operating costs of public utilities in North Carolina, it had become necessary for utilities to postpone or curtail construction of generation and transmission facilities. The General Assembly concluded that the creation of joint power agencies would help assure an adequate and economical supply of electric power. N.C.G.S. 159B-2.

Originally the Act did not expressly permit municipal power agencies to own plants jointly with public utilities. However, in 1977 the Constitution of North Carolina was amended by the adoption of Article V, Section 10 which specifically authorized such ownership arrangements. The General Assembly enacted N.C.G.S. 159B-5.1 which effectuates the provisions of Article V, Section 10. Also, under N.C.G.S. 159B-8 municipalities participating in joint projects are authorized to enter into contracts for the exchange, pooling and transmission of electric power produced by such projects with any public utility which owns generation, transmission or distribution facilities in this or any other State. These constitutional and statutory provisions reflect the legislature's conclusion that joint ownership arrangements and exchange agreements such as the Catawba Sale Agreements are in the public interest and should be encouraged. Since such agreements are generally in the public interest, it is logical to assume that the facilities used to effectuate them provide benefits to the public.

The appellants did present evidence that electricity from McGuire was sold to the municipalities and cooperatives at a price which did not recover the capital costs of the McGuire Station. This would support the appellants' argument for the exclusion of a portion of those costs from Duke's North Carolina rate base. Duke, however, presented evidence that the Catawba Sale Agreements and the exchange provisions therein produced a significant benefit to Duke's retail customers. Duke witnesses testified that as a result of the exchange agreement Duke's system reliability was greatly enhanced by cushioning the effect of any outages at the McGuire Station. This testimony was uncontradicted.

In *Utilities Commission v. Public Staff*, 309 N.C. 195, 306 S.E.2d 435 (1983), we discussed the characteristics of interchange agreements by which various utilities could buy and sell electric power with other utilities. We acknowledged the benefits of such arrangements stating:

These interconnections, and the interchange and exchange agreements that result, enhance reliability by allowing any particular interconnected utility to receive excess power from systems located anywhere on the grid. Such enhanced reliability obviates the need for the high reserve capacity that would otherwise be needed by the utility to meet its peak demand in times of highest usage or when generating units are out of service. By sharing reserves the interconnected systems not only enhance reliability but also reduce the need for capital expenditures necessary to fulfill their reserve needs if they were not interconnected. The ability to interchange and purchase and sell power among interconnected utilities also allows the utilities to schedule plant outages for necessary maintenance and repair at particular times when it might otherwise be impossible. It makes possible staggered construction of large new generating units among interconnected systems.

Id. at 198, 306 S.E.2d at 437. Although in that case we were concerned with an exchange agreement between separate utilities rather than one between joint owners of separate generating facilities, the advantages of increased system reliability are equally applicable here. Without the exchange agreement an outage at McGuire would require Duke to replace the lost power from other less efficient generating facilities or through costly purchases from other utilities. In either case retail rates to consumers would almost certainly rise to reflect those additional costs.

As noted previously, the Commission was of the opinion that the exchange agreement should be viewed as an inseparable part of the Catawba Sale Agreements. We agree. Evidence was presented which tended to show that the Catawba Sale Agreements provided benefits to North Carolina ratepayers in addition to the advantages flowing from the reliability exchange. If found to exist, these benefits should also be considered in order to arrive at an equitable rate determination.

Duke witness Stimart testified, and the Commission determined, that the Catawba Sale Agreements benefited retail ratepayers by enabling Duke to complete the Catawba Station without having to issue and service substantial sums of additional debt and by allowing the joint owners of Catawba to finance their share of the plant at a lower capital cost than that available to Duke. The appellants offered no evidence to contradict this claim. Stimart testified that because Duke did not have to issue additional debt to complete Catawba, North Carolina retail ratepayers were saved \$28,000,000 annually. The evidence clearly tends to show that Duke's North Carolina retail ratepayers benefited in several ways from the Catawba Sale Agreements. This evidence was competent and substantial, and supports the Commission's explicit finding that McGuire in its entirety is "used and useful" and its implicit finding that the portion of McGuire's capacity allocated to Catawba is "used and useful." This is true even without regard to the savings resulting to the North Carolina customers of the North Carolina municipalities and cooperatives. We, therefore, hold that the Commission properly refused to exclude from Duke's rate base and allowable expenses that portion of the operating expenses and undepreciated costs of McGuire equal to the percentage of its generation received by the municipalities and cooperatives under the exchange agreement.

The appellants also contend that the part of the order which stated that the exchange agreement should be reflected in Duke's fuel expenses and demand jurisdictional allocation factor is not in the form required. N.C.G.S. 62-79(a) states:

All final orders and decisions of the Commission shall be sufficient in detail to enable the court on appeal to determine the controverted questions presented in the proceedings and shall include: (1) Findings and conclusions and the reasons or bases therefor upon all the material issues of fact, law, or discretion presented in the record, and (2) The appropriate rule, order sanction, relief or statement of denial thereof.

The appellants' first argument in support of this contention is based on the Commission's conclusion that the exchange agreement affects North Carolina retail ratepayers by requiring them to pay for McGuire capacity which does not directly serve them at the time. They argue that this conclusion is correct and shows the error in that part of the Commission's order requiring Duke's North Carolina retail customers to pay for any of the costs or expenses of McGuire associated with the generation of power for exchange with Catawba under the exchange agreement. We disagree. As noted previously, Duke presented plenary evidence that the exchange agreement as well as other attributes of the Catawba Sale Agreements will benefit Duke's North Carolina retail customers. These benefits are not at all times direct, yet they are nevertheless real. We detect no inconsistency between the Commission's conclusion as to the exchange agreement's effect on North Carolina ratepayers and the Commission's implicit determination that the portion of McGuire used to generate power for exchange with Catawba under the agreement is "used and useful" in providing service to the public in North Carolina.

The appellants further argue that the Commission failed to resolve a material legal issue raised by the testimony of the appellants' witness Wilson. This argument is meritless. The order resolves all "material issues of fact, law or discretion presented in the record" pertaining to the exchange agreement. In its order the Commission set forth and discussed the contentions and evidence presented by both the appellants and Duke concerning the inclusion of a portion of the costs of McGuire attributable to the production of power for exchange with Catawba. It then set forth its conclusion that it was proper to treat the costs of McGuire in the manner proposed by Duke due to the specified benefits received by the retail ratepayers. The portion of the Commission's order concerning the reliability exchange agreements fully comports with N.C.G.S. 62-79(a).

The appellants next contend that the Commission erred in determining Duke's probable future revenues by failing to adjust Duke's test period operating revenues to account for abnormally low test period industrial sales. As noted previously N.C.G.S. 62-133(c) provides:

The original cost of the public utility's property, including its construction work in progress, shall be determined as of the end of the test period used in the hearing and the probable future revenues and expenses shall be based on the plant and equipment in operation at that time. The test period shall consist of 12 months' historical operating experience prior to the date the rates are proposed to become effective, but the Commission shall consider such relevant, material and competent evidence as may be offered by any party to the proceeding tending to show actual changes in costs, revenues or the cost of the public utility's property used and useful, or to be used and useful within a reasonable time after the test period, in providing the service rendered to the public within this State, including its construction work in progress, which is based upon circumstances and events occurring up to the time the hearing is closed.

Thus, the utility's rates are based upon a historic twelve month test period. The theory behind the use of a recently ended test period in fixing rates to be charged in the near future is that the rates in effect during the test period will produce the same rate of return in the near future on the company's property as they produced in the test period, adjusted for known changes in conditions. *Utilities Commission v. Duke Power Company*, 305 N.C. 1, 287 S.E.2d 786 (1982); *Utilities Commission v. City of Durham*, 282 N.C. 308, 193 S.E.2d 95 (1972). Because there may be abnormalities in the test period, N.C.G.S. 62-133 allows the Commission to make *pro forma* adjustments to revenue and expenses to reflect the effect of certain future conditions as though those conditions had prevailed throughout or at the end of the test period, and to adjust for abnormalities and changes in conditions. *Utilities Commission v. Duke Power Co.*, 305 N.C. 1, 287 S.E.2d 786 (1982).

In order to normalize the test period in the present case, which was the twelve month period from July 1, 1982 to June 30, 1983, Duke proposed certain adjustments to its operating revenues. One proposed adjustment was to increase Duke's test period revenues by \$18,033,000 to normalize test period sales for weather conditions. This adjustment was unchallenged by either the appellants or the Public Staff. Duke also proposed that test period revenues be adjusted upward by \$10,706,000 to reflect customer growth through the end of the test period. The customer growth adjustment proposed by Duke increased revenues to reflect the actual number of customers at the end of the test period. Duke calculated that had the actual number of customers served at the end of the test period been customers during the entire test period, Duke's revenues would have increased by \$10,706,000. These adjustments had the effect of decreasing Duke's revenue requirement and therefore reducing the amount of the increase in rates required.

The Public Staff proposed a consumer growth adjustment of \$14,525,020 to Duke's revenues. The difference between Duke's proposed adjustment and that of the Public Staff was the result of the different methodologies used. In calculating its adjustment the Public Staff did not use the actual number of customers at the end of the test period. Instead it used a regression analysis based on data from January 1, 1981 to December 31, 1983 to determine a "normalized" end-of-period level of customers. According to the Public Staff, this removed any abnormality in the end-of-period numbers used by Duke.

The witness Wilson testified on behalf of Carolina Utility Consumers Association and proposed a consumer growth adjustment of \$22,789,000. Wilson contended that Duke's industrial sales during the first half of the test period were abnormally low due to economic conditions existing during that time. He adjusted test period industrial sales by comparing actual industrial kilowatt-hour (hereinafter "kwh") sales in the second half of 1982 with the level of industrial kwh sales at the average growth rate from 1980 to 1983. He used the difference in the actual industrial kwh sales for the last six months of 1982 and the level expected from the application of the industrial kwh sales derived from the average growth as the appropriate minimum adjustment to kwh sales level at the average price per kwh for the industrial class. This method produced an adjustment to North Carolina retail test period revenues of \$22,789,000.

Duke presented rebuttal evidence with respect to the proposals of the Public Staff and Wilson. With regard to the Public Staff's position, Duke witness Stimart noted that the regression analysis is based on a thirty-six month period ending six months beyond the conclusion of the test period. He testified that this resulted in the Public Staff's predicted consumer growth being higher than it should have been. Stimart also said that if the regression methodology had only utilized data through the end of the test period, the Public Staff's analysis would have produced an end-of-period number of industrial customers comparable to the actual number of industrial customers at the termination of the test period.

In response to the adjustment proposed by Wilson, Stimart noted that the test period retail sales had increased over test period retail sales for Duke's last general rate case and that the test period had already been adjusted for weather variances and consumer growth. He went on to testify that Wilson's proposed adjustment to test period sales was not appropriate because it was based only on a partial analysis of unadjusted sales for a portion of the fiscal cycle, it was distorted by variations in the actual number of bills before and after the test period, and it was distorted by figures reflecting the fact that the summer of 1983 was abnormally warm which caused greater electric usage by industrial customers.

William Lee, Chairman of the Board and Chief Executive Officer of Duke, also testified. He stated that industrial sales had decreased in four of the past ten years.

In its order the Commission summarized the evidence and the contentions of the parties. It stated that the regression analysis methodology used by the Public Staff, including the use of data from outside the test period, was generally appropriate for determining a normalized end-of-period level of customers because it removes the variability inherent in using actual customer levels at the end of the test period. The Commission then stated that it was appropriate to use average kwh sales per customer in consumer growth calculations so long as it does not unduly bias the calculations.

The Commission rejected Wilson's proposed adjustment as being too uncertain. It stated that if it were appropriate to adjust industrial kwh sales to reflect abnormal conditions during the test period, then that variable should be isolated so as to exclude the effects of growth in the number of customers and abnormal weather which had already been taken into account. Wilson's methodology failed in this regard. Based on these determinations, the Commission concluded that an adjustment to revenues of \$12,892,000 was appropriate. The Commission made no adjustment to normalize economic conditions.

The appellants contend that the Commission erred by failing to adjust Duke's test period operating revenues to account for abnormally low test period industrial sales caused by depressed economic conditions existing during the first half of the test period. We agree with the appellants' argument that the Commission *must* make *pro forma* adjustments for abnormalities which existed during the test period. For reasons which we will discuss here, however, we have determined that the evidence did not require the Commission to find that any abnormality existed as to economic conditions during the test period. The appellants' contention that the Commission erred in this regard is rejected.

N.C.G.S. 62-133(a) mandates that the Commission fix rates that are fair both to the utility and the consumer. N.C.G.S. 62-133(c) establishes the use of a twelve month test period for setting rates. N.C. G. S. 62-133(c) further provides:

[T]he Commission shall consider such relevant, material and competent evidence as may be offered by any party to the proceeding tending to show actual changes in costs, revenues, or the cost of the public utility's property used and useful, or to be used and useful within a reasonable time after the test period, in providing the service rendered to the public within this State, including its construction work in progress, which is based upon circumstances and events occurring up to the time the hearing is closed.

These statutory provisions compel the conclusion that the Commission is *required* to adjust test period data to reflect abnormalities which had a probable impact on the utility's revenues and expenses during the test period. This conclusion is supported by language in a number of prior cases. *E.g., Utilities Commission v. Duke Power Co.*, 305 N.C. 1, 14, 287 S.E.2d 786, 794 (1982) ("Duke correctly argues that to properly reflect probable future costs and revenues, the Commission must increase its test year expenses, *i.e.*, depreciation expense by \$3,879,000 thereby reducing its net income by this same amount. This adjustment is consistent with the Commission's statutory mandate and is appropriate."); *Utilities Commission v. Virginia Electric and Power Co.*, 285 N.C. 398, 417, 206 S.E.2d 283, 297 (1974) (The test year period "is the basis for a reasonably accurate estimate of what may be anticipated in the near future *if, but only if, appropriate pro forma adjustments are made for abnormalities which existed in the test period....*") (emphasis added); *Utilities Commission v. City of Durham*, 282 N.C. 308, 321, 193 S.E.2d 95, 104-05 (1972) (speaking to a proposed adjustment due to abnormal weather the Court stated, "The statute does not require the Commission to make an adjustment for a slight variation between the weather of the test period and the weather of an average year.... Where, however, as in the present record, the evidence is clear and undisputed that the heating season of the test period was abnormally cold (or abnormally warm), the Commission is clearly authorized, *if not required*, by N.C.G.S. 62-133(b)(2) to make a reasonably approximate adjustment for such abnormality in the test period experience.") (Emphasis added.)

However, the Commission is not required to make a *pro forma* adjustment unless it finds that an abnormality having a probable impact on the utility's revenues and expenses existed during the test period. Whether such an abnormality existed is a factual determination to be made by the Commission and is conclusive on appeal if supported by competent, material and substantial evidence. See *Utilities Commission v. General Telephone Co.*, 281 N.C. 318, 189 S.E.2d 705 (1972). The Commission failed to find that industrial sales were abnormal during the first half of the test period due to the depressed condition of the economy or for any other reason. There was competent, material and substantial evidence to support the Commission's refusal either to make such a finding or to adopt Wilson's proposed adjustment.

Initially the record tends to show that any adjustment based on economic conditions would be largely speculative. In four of the previous ten years Duke's industrial sales had fallen compared to the prior year. In the other six years sales had increased. Considering the uncertainty of the economy, it would have been difficult at the time of the hearing to ascertain whether the country was in the middle of a recovery or at the end of a recovery and thus whether industrial sales were likely to grow or decline during the time the rates were to be in effect. The Commission was therefore warranted in believing that industrial sales in the second half of 1983 were no better indicator of normalized industrial sales for the second half of 1982 than actual industrial sales for that period.

Furthermore, the Commission concluded that even had it adjusted industrial kwh sales to reflect any abnormally depressed economic conditions during the test period, that variable should be isolated to exclude the effects of customer growth and unusual weather which had already been considered. The conclusion that Wilson's methodology failed in this respect and was flawed is amply supported by the evidence. Duke witness Stimart testified that the proposed adjustment was flawed because it was based solely on a partial analysis of unadjusted sales for a portion of the fiscal cycle, it was distorted by variations in the actual number of bills before and after the test period, and it was distorted because it took into account again the fact that energy usage was greater in the summer of 1983 due to abnormally warm weather.

Finally we note that Wilson's testimony that his adjusted industrial sales figures were a better indicator of normalized industrial sales than were the actual test year industrial sales was opinion testimony. It is well settled that the Commission is not bound by expert opinion testimony, even where it is undisputed. *E.g., Utilities Commission v. Southern Bell Telephone Co.*, 307 N.C. 541, 299 S.E.2d 763 (1983); *Utilities Commission v. Duke Power Co.*, 305 N.C. 1, 287 S.E.2d 786 (1982). Therefore, even if there had been no evidence contradicting it, the Commission still would have been free to reject this testimony.

The appellants also contend that the Commission's order with respect to the issues of adjustments for growth in the number of customers and changes in economic conditions violated N.C.G.S. 62-79(a) which requires the Commission to state its findings and conclusions on all material issues of fact, law or discretion presented in the record as well as the reasoning supporting them. The appellants argue that the Commission failed to make proper findings with regard to adjustments for growth in the number of customers and changes in economic conditions. We do not agree.

With regard to the customer growth adjustment, the Commission specifically stated that it was "of the opinion that the regression analysis methodology used by the Public Staff is the appropriate method to use in most instances for determining a normalized end-of-period level of customers by rate schedule." The Commission went on to state that it found appropriate use of "average kwh sales per customer in customer growth calculations to the extent that such average kwh sales per customer do not unduly bias the calculations." This sentence refers back to the Commission's earlier discussion of industrial growth in which it recognized that the actual growth in the number of customers during the period might not include the same ratio of high-use industrial customers as is contained in the kwh per customer data utilized in the calculations. When read in its entirety the order shows that the Commission accepted the Public Staff's customer growth adjustment except as it applied to industrial customers. For industrial customers, the Commission used the actual number of industrial customers at the end of the test period so as not to bias the calculation. The Commission rejected the adjustment for economic conditions proposed by Wilson, apparently because that proposed adjustment took into account the effects of factors such as customer growth and abnormal weather for which adjustments had already been made. The Commission then made a \$12,892,000 adjustment based on its findings and conclusions.

The remaining assignments of error and contentions are brought forward solely by Carolina Utility Customers Association. It first contends that the Commission erred by refusing to order Duke to make time of use rates immediately available to all customers. We do not agree.

Under time of use rates a customer is charged varying rates according to the time of day or year that the customer uses electricity. Time of use rates are voluntary and only those customers who are able to reduce their bills will utilize time of use rates. The reduction in billings naturally reduces a utility's revenues. There is, however, no immediate corresponding decrease in the utility's cost of service because of the lag time necessary to educate the large body of residential and industrial customers to the benefits of time of use rates and because some of the customers who switch to time of use rates will obtain a reduction in their bills even if they do not alter their usage pattern. Therefore, a utility's overall rates ordinarily must be increased temporarily for the short run if time of use rates are made available to enable the utility to recover its revenue requirement. Customers have been encouraged to utilize time of use rates because of the belief that time of use rates will ultimately alter the customers' usage patterns and decrease the growth of the peak demand for power from the system, thereby avoiding the need of operating inefficient plants or building additional capacity. This produces limited immediate savings, however, because many customers will alter their usage patterns only over a long period of time.

Duke began to experiment with time of use rates in 1978. In 1981, the Commission authorized Duke to phase-in its time of use rates to make them more available to its general service and industrial customers pursuant to voluntary time of use schedules GT and IT. Schedule IT is Duke's time of use rate schedule for industrial customers which by its own terms states that such rates are:

Available on a voluntary and limited basis to the individual establishment which is in one of the following categories: establishments receiving initial permanent service after April 16, 1981 on this Schedule; or establishments served in an area where the Company operates its bi-direction communications system; or a random selection of establishments not served from the Company's distribution lines; or establishments previously served on this Schedule.

In its application in the present proceeding, Duke proposed to continue to phase-in the availability of time of use rates under Schedules GT and IT. Duke witness Hatley testified that Duke was attempting to make Schedules GT and IT available to all general service and industrial customers on an equal basis. He testified that Duke was making its power line carrier bi-direction communications equipment available throughout the system to distribution customers² and was following the same phase-in pattern with time of use rates. Because transmission customers³ were not served by the power line carrier bi-direction communications system, however, a different method was needed to make time of use rates available to them. Therefore, the schedule provides that transmission customers will be chosen randomly for time of use rates.

To determine the number of transmission customers who will be offered time of use rates, Duke determines the percentage of customers who are served in areas where Duke operates its power line carrier bi-direction communications equipment and then randomly selects a number of transmission customers and makes

Schedules IT and GT available to those customers to equalize the percentage of transmission customers who have Schedules IT and GT available to them. The only other customers who have Schedules IT and GT available to them are customers who accepted service under Duke's experimental time of use rates and customers coming onto the system after April 16, 1981, the date service was initially provided pursuant to Schedules IT and GT. According to Duke, its phase-in methods would make time of use rates available to all general service and industrial customers by 1987.

In connection with the increased availability of time of use rates due to the expansion of the power line carrier bi-direction communications equipment and random selection of additional transmission customers, Duke proposed that the Commission make an adjustment in the rates of its general service and industrial customers of approximately \$1,500,000 to permit it to recover the level of revenues found by the Commission to be just and reasonable. Duke witness Hatley testified that the adjustment accounted for the fact that existing general service and industrial customers who would be offered service under Schedules GT and IT would receive a \$1,500,000 reduction in their bills without making any change in their usage pattern. Without an increase in rates to reflect the increased availability of Schedules GT and IT, it is apparent that Duke would be unable to achieve the rate of return found to be reasonable by the Commission.

In its order, the Commission required Duke to:

[M]ake voluntary time of use rate schedules GT and IT available to all general service and industrial customers having appropriate metering facilities and located at or near transmission facilities and otherwise qualifying, *provided such service is offered on the basis that the Company will incur no additional expenses not recovered through its approved rates and charges.*

(Emphasis added.) It is readily apparent that the Commission intended to allow Duke to adjust its rates to reflect the increased availability of time of use rates by the amount necessary to recover the rate of return found by the Commission to be just and reasonable. The \$1,500,000 adjustment the Commission allowed Duke, however, related not to the increased availability of time of use rates to all transmission customers but only to the number of customers Duke had proposed to offer time of use rates due to its random selection of additional transmission customers. In order to correct this error, Duke filed a motion for reconsideration with respect to that portion of the order dealing with time of use rates. The Commission subsequently entered an order holding in abeyance that portion of its order relating to the increased availability of time of use rates. The Commission also scheduled oral argument with respect to this matter.

At the hearing on reconsideration Donald Denton, Duke's Senior Vice-President for Marketing and Rates, testified that Duke had no objection to making time of use rates available on a systemwide basis to all its transmission customers. He stated, however, that this increased availability of time of use rates would cause a decrease in Duke's revenues of \$16,700,000. Therefore, if Duke were required to make time of use rates available to all transmission customers, the Commission would need to allow an increase in rates to industrial and general service customers of \$16,700,000 in order for Duke to recover the revenues approved by the Commission in its order.

Based on the evidence presented the Commission struck that portion of the order relating to time of use rates and ordered that

Duke shall continue to phase in the availability of TOU rate schedules GT and IT in the same manner the Company has been following until such time as it files its next general rate case. The Company shall make the necessary revenue reallocations in its next general rate case in order to make such TOU rates available to all transmission level customers.

The appellant contends that the availability limitation provisions of Schedules GT and IT as approved by the Commission constitutes an unreasonable discrimination against Duke's retail customers who would benefit from time of use rates if they were available. The question of illegal discrimination in utility rates is governed by N.C. G.S. 62-140(a) which provides in pertinent part:

No public utility shall, as to rates or services, make or grant any unreasonable preference or advantage to any person or subject any person to any unreasonable prejudice or disadvantage. No public utility shall establish or maintain any unreasonable difference as to rates or services either as between localities or as between classes of service.

In construing this provision we have stated that "[t]he long-established question of law with respect to rate differentials is not whether the differential is merely discriminatory or preferential; the question is whether the differential is an *unreasonable* or *unjust* discrimination." *Utilities Commission v. Bird Oil Company*, 302 N.C. 14, 22, 273 S.E.2d 232, 237 (1981) (emphasis original). The applicable standard of review when an appellant alleges unreasonable discrimination is whether the Commission's order is supported by competent, material and substantial evidence. See *Utilities Commission v. Edmisten*, 291 N.C. 424, 230 S.E.2d 647 (1976).

We have previously stated that it is not improper to create rate differentials based on substantial differences in quantity of use, *time of use*, manner of service and the cost of rendering service. *Utilities Commission v. Bird Oil Company*, 302 N.C. 14, 273 S.E.2d 232 (1981). Therefore, it is clear that time of use rates are not discriminatory. The appellant argues, however, that when time of use rates are made available to any users, they must be offered to all users as soon as possible. We do not agree.

Duke's uncontradicted evidence showed that if time of use rates were made immediately available to all industrial and general service transmission customers, Duke's revenues would decrease by \$16,700,000. Since there would be no immediate corresponding reduction in Duke's costs, the rates of all general service and industrial customers would have to be increased for the short run in order for Duke to recover the level of revenue previously determined by the Commission to be just and reasonable. However, there are transmission customers who would not benefit from time of use rates and distribution customers who would not have time of use rates available to them. In view of the rate shock which would be experienced by these customers, it was reasonable for the Commission to allow Duke to continue to phase-in time of use rates. Otherwise, those customers not switching to time of use rates would experience unreasonably sharp increases in their rates even though there would be no corresponding increase in Duke's costs for continuing to provide them electric service. We note that at least one other jurisdiction has ruled that it is reasonable to permit the phasing in of time of use rates in view of the substantial increase in expense to the utility that would result from the immediate implementation of such rates. *New York State Council of Retail Merchants, Inc. v. Public Service Commission*, 45 N.Y.2d 661, 384 N.E.2d 1282, 412 N.Y.S.2d 358 (1978).

The appellant directs our attention to *North Carolina Public Service Company v. Southern Power Co.*, 179 N.C. 18, 101 S.E. 593 (1919). In that case the defendant utility company demanded that the plaintiff pay a substantially higher rate than it charged other purchasers, many of whom were industrial customers affiliated with the utility. We stated that the plaintiff was entitled to receive the lowest rate charged by the utility for power sold to similar customers under similar conditions. Otherwise, we said the defendant would be engaging in illegal discrimination against the plaintiff.

In the case *sub judice*, however, Duke's rates have been established by the Commission and its rate differentials and restrictions on the availability of time of use rates have been specifically held reasonable and approved by the Commission. There is neither an allegation nor any evidence of an attempt by Duke to coerce customers into paying unreasonable rates. Finally, there is no showing that Duke has favored its affiliates over other customers. The appellant's reliance on *Southern Power Company* is misplaced.

The appellant also argues that the Commission's finding of fact with respect to time of use rates and the use of demand ratchets⁴ are contradictory. In its original order the Commission stated that in a number of other cases involving Virginia Electric Power and Light Co. and Carolina Power and Light Co. it had found that demand ratchets are a less efficient peak load pricing device than time of use rates and that time of use rates would be a reasonable alternative to demand ratchets. The appellant argues that the Commission violated N.C.G.S. 62-79(a) by making this finding and then on reconsideration, continuing the use of demand ratchets and limiting the availability of time of use rates. This argument is meritless.

It is true that in its original order the Commission stated that time of use rates were a "reasonable alternative" to demand ratchets. In fact the Commission expressed a preference for time of use rates over demand ratchets. However, on reconsideration the Commission found that it would not be advisable to make time of use rates immediately available to all transmission customers due to the revenue adjustment which would be required. As discussed previously herein this decision was supported by competent, material and substantial evidence. Therefore, the Commission's findings are not inconsistent with its ultimate decision.

In its final argument, the appellant contends that the Commission erred by adjusting Duke's rates by \$1,500,000 to offset losses in revenue occasioned by the increased availability of time of use rates. As previously noted the Commission permitted Duke to increase its general service and industrial rate schedules by \$1,500,000 in order to recover the level of revenue approved by the Commission. This increase was necessary due to the fact that some customers who switch to time of use rates will be able to reduce their bills without a reduction in power usage and with no corresponding decrease in Duke's cost. Duke calculated the \$1,500,000 figure by determining which customers would be offered time of use rates and comparing their actual bills during the test year with the bills they would have received under the time of use rate schedules.

The appellant claims that the adjustment is an unreasonable discrimination prohibited by N.C.G.S. 62-140(a). The appellant's argument appears to be that because the cost of providing service to general service and industrial customers has not increased due to the increased availability of time of use rates, it is unreasonably discriminatory to require those customers unable to receive time of use rates to pay for the benefits received by those who are able to take advantage of such rates. However, as we have previously discussed at length herein, the adjustment was necessary to enable Duke to recover the rate of return approved by the Commission, and not because of an increase in the cost of service. There is nothing unreasonably discriminatory about permitting Duke to recover its revenue requirements from its general service and industrial customers.

The appellant also contends that the Commission's acceptance of Duke's argument concerning revenue loss resulting from implementation of time of use rates was based upon its use of revenue erosion projections prohibited by N.C.G.S. 62-133(c). As discussed previously that statute directs the Commission to determine Duke's costs, expenses and revenues based on a twelve month test period. Under the statute the Commission must also consider relevant, material and competent evidence "tending to show actual changes in costs, revenues or the cost of the public utility's property used and useful, or to be used and useful within a reasonable time after the test period ... which is based upon circumstances and events occurring up to the time the hearing is closed."

The Commission made findings required by N.C.G.S. 62-133(c) based on the test period and actual changes in costs and revenues occurring within a reasonable time after the test period concerning the undepreciated cost of Duke's property and future gross revenues under the present rates. Based on these and other determinations, the Commission found that Duke would require annual gross revenues of \$1,694,259,000 in order to earn a reasonable rate of return on its rate base. This necessitated a \$136,969,000 increase in annual gross revenues. Under N.C.G.S. 62-133(b)(5) the Commission was then required to set rates which would permit Duke to recover this revenue. In doing this the Commission was required by N.C.G.S. 62-133(b)(2) to estimate Duke's revenues under the proposed rates. The Commission did so and determined that it was necessary to make the \$1,500,000 adjustment for services provided under the time of use rate schedules in order for Duke to recover the level of revenue found to be reasonable by the Commission.

The appellant argues that because the revenue erosion occasioned by the increased use of time of use rates was merely projected and had not actually occurred at the time of the hearing, it was not an "actual change" which was "based upon circumstances and events occurring up to the time the hearing is closed." Therefore, the appellant argues that it was error for the Commission to make the \$1,500,000 adjustment. However, N.C.G.S. 62-133(c) merely requires the Commission to determine the utility's costs, present and future revenues under current rates and cost of property used and useful through the use of an historic twelve month test period adjusted for actual changes in costs and revenues occurring within a reasonable time after the test period. Under N.C.G.S. 62-133(b)(4) the Commission must then fix a rate of return on the cost of the utility's property so as to enable it to receive a fair return for its shareholders. Under N.C. G.S. 62-133(b)(2) the Commission must then estimate the future revenues under the proposed rates. This permits the Commission to ascertain the rate adjustment necessary to permit the utility to recover the approved level of revenue. In order for the Commission to accurately estimate future revenues under the proposed rates it was necessary and proper for the Commission to take into consideration the estimated reduction in revenue which would occur due to the increased availability of time of use rates.

Finally we note that pursuant to N.C. G.S. 62-133(d) the Commission must consider all other material facts of record which will enable it to determine what are reasonable and just rates. The projected decrease in revenue to be occasioned by the increased availability of time of use rate schedules is clearly a "material fact of record" which the Commission was required to take into account when setting Duke's rates.

To summarize we hold: (1) the Commission properly refused to exclude from Duke's rate base and allowable expenses a percentage of the operating expenses and of the undepreciated capital costs of the McGuire Nuclear Station to reflect the percentage of electricity generated by the plant and received by the municipal power agencies and cooperatives pursuant to the exchange agreements contained in the Catawba Sale Agreements, (2) the Commission did not err in failing to accept certain proposed adjustments to Duke's test period revenues, (3) the Commission did not err in failing to require Duke to make time of use rates immediately available to all customers, and (4) the Commission properly increased Duke's rates by \$1,500,000 to offset losses of revenue due to the increased availability of time of use rates.

For the reasons discussed herein, the orders of the Utilities Commission which are the subject of this appeal are affirmed.

AFFIRMED.

MARTIN, Justice, dissenting.

I respectfully dissent because of my disagreement with the majority on its resolution of the first issue discussed. While I agree with the majority that in principle exchange agreements may be beneficial to the public, the record does not support application of this principle in this particular rate case. Endorsing in principle the fact that an exchange agreement may enhance the reliability of power supply to Duke's customers (as well as possibly providing other benefits), such benefits were not made available to Duke's retail ratepayers during or within a reasonable time after the conclusion of the test year in the present case. See N.C.Gen.Stat. § 62-133 (1982). Such benefits will inure to these customers only if and when the two Catawba units are completed and thereby become available as backup suppliers of power in the event the McGuire station is unable to supply power to Duke's retail ratepayers. It is clear from the record that neither unit of the Catawba station had been completed at the time the Commission's order was entered in 1984 and was not even scheduled to be completed until sometime the following year. The test year ended 30 June 1983. Duke's retail ratepayers were thus not receiving *any* benefits from the so-called exchange agreements since no exchange of power was even possible during the test year in this case or soon thereafter. The only "benefit" these ratepayers received from Duke's implementation of the alleged exchange agreement during the test year was the privilege of having included in the retail rate base costs associated with power sold to the owners of interests in the still uncompleted Catawba plants.

While I might agree that Duke's retail ratepayers should participate in paying costs resulting from agreements made by Duke which benefit these ratepayers, it is only fair that such an obligation arise only when the ratepayers actually begin to receive these benefits. At least one unit of the Catawba station is yet incomplete as this opinion is being issued and the other may also be unfinished. As with other nuclear power plants, the ultimate completion of the Catawba station may drag on for many years. By the majority's reasoning, Duke's retail ratepayers are footing the bill for costs associated with power they will never use and with benefits they certainly were not receiving during the test year and may not receive for many years, if ever.

I further disagree with the majority's view that the retail ratepayers received benefits during the test year because the exchange agreements may have enabled Duke and the other owners of Catawba to finance the construction of the Catawba station at costs lower than might have been incurred had the exchange agreements not been implemented. With this kind of argument Duke will always be able to claim that its retail ratepayers are receiving benefits (and thus must pay the costs of service provided to other, nonjurisdictional power consumers) merely by proposing unjustifiably high rates and then proposing a cost reduction that will "benefit" ratepayers. Any such cost reductions are pure speculation; this sort of argument should not be endorsed by this Court.

For these reasons I dissent from the majority's opinion.

FOOTNOTES

1. Great Lakes Carbon Corporation is already served on time of use rate schedule IT. Therefore, it did not join certain of the exceptions regarding the availability of voluntary time of use rate schedules GT and IT or the Commission's actions pertaining to the "flattening" of the utility's nonresidential rate schedules.

2. Distribution customers are those customers served by low voltage distribution lines and tend to be smaller users of electricity, including residential customers.

3. Transmission customers are those customers served by high voltage transmission lines and tend to be larger users of electricity.

4. As stated by the appellants in their brief, a contract billing demand ratchet is a provision that requires a customer to pay a certain percentage of its maximum demand in a stated period, without regard to whether it actually reaches that demand in that period. Generally, the percentage is somewhere between the demand the customer actually placed on the system and the maximum it contracted to put on the system, but did not.