

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

CASE NO. ER-84-168 ✓

In the matter of Union Electric Company of St. Louis, Missouri, for authority to file tariffs increasing rates for electric service provided to customers in the Missouri service area of the Company.

CASE NO. EO-85-17

In the matter of the determination of in-service criteria for the Union Electric Company's Callaway Nuclear Plant and Callaway rate base and related issues.

APPEARANCES: Paul A. Agathen, Attorney at Law, and Gerald Charnoff, Attorney at Law, P. O. Box 149, St. Louis, Missouri 63166, for Union Electric Company.

William Clark Kelly, Assistant Attorney General, P. O. Box 899, Jefferson City, Missouri 65102, for the State of Missouri.

William M. Barvick, Attorney at Law, 124 East High Street, Jefferson City, Missouri 65101, for the City of Jefferson, et al.

Richard W. French, Assistant Public Counsel, P. O. Box 7800, Jefferson City, Missouri 65102, for the Office of the Public Counsel and the Public.

William C. Harrelson, Deputy General Counsel, P. O. Box 360, Jefferson City, Missouri 65102, for the Staff of the Missouri Public Service Commission

REPORT AND ORDER - PHASE I  
PROCEDURAL HISTORY

On February 15, 1984, the Union Electric Company (hereinafter Company) filed revised tariffs seeking authority to increase rates for electric service provided to customers in the Missouri service area of the Company. The tariffs bore an effective date of March 16, 1984.

On March 7, 1984, the Commission suspended the tariffs to July 14, 1984. On May 11, 1984, the Commission issued its Second Suspension Order suspending the proposed tariffs until January 14, 1985, and setting a schedule of proceedings.

The proceedings scheduled by the Commission include four phases of hearings. The Phase I portion of the case was established for the purpose of establishing "in-service" criteria which are the criteria to be applied in determining whether the Callaway Nuclear Plant is "fully operational and used for service" within the meaning of Section 393.135, RSMo 1978. The Phase I hearings were scheduled for July 17 through July 20, 1984, in the Commission's hearing room in Jefferson City, Missouri.

On July 13, 1984, the Commission established Docket No. EO-85-17 and consolidated Case No. EO-85-17 with Case No. ER-84-168. Case No. EO-85-17 was established for the purpose of the "in-service" criteria to be used by the Commission for the Callaway Nuclear Plant and for the purpose of determining Callaway rate base and related issues.

The Phase I hearing was duly held at the time and place noted above. The following parties participated in the Phase I hearings: the Company, the Staff, the Public Counsel, the City of Jefferson, et al., and the State of Missouri.

Initial briefs and reply briefs have been filed by the Company, the Staff, the Public Counsel and the City of Jefferson, et al.

#### Findings of Fact

The Missouri Public Service Commission has arrived at the following findings of fact:

The issue to be resolved as a result of the Phase I hearing is "what criteria will be used by the Commission for determining when the Callaway Plant is "in-service" for ratemaking purposes. Once the plant is determined to be "in-service" it will be eligible for inclusion in rate base.

The Company has proposed four criteria while the Staff has proposed six criteria. Missouri Retailers Association, which participated in the prehearing conference only, supports Staff. The Public Counsel and the City of Jefferson, et al., support Staff's Criteria 1 through 5 but oppose Staff's Criterion 6. All parties argue that their respective positions propose criteria which necessarily must be satisfied to support a finding by the Commission that the Callaway Nuclear Plant is "fully operational and used for service" within the meaning of Section 93.135, RSMo 1978.

The Company takes the position that the plant should be declared "in-service" when the plant is providing safe and reliable power. The Company's "in-service" criteria is as follows:

Criterion 1. The Company was granted an operating license by the Nuclear Regulatory Commission to operate the plant at high power levels.

Criterion 2. The turbine generator and nuclear steam supply system have demonstrated the capability to sustain reliable power operation.

Criterion 3. The plant has supplied electricity to the Company's system with output scheduled by the system load dispatcher.

Criterion 4. All components of the plant needed to generate at 100 percent of capacity are capable of operation.

Company's four criteria will be satisfied at 50 percent power although the Company intends to complete all testing required by the Nuclear Regulatory Commission (hereinafter NRC) and complete full power ascension to 100 percent power prior to declaring the plant "in service". The minimum standard for declaring the plant "in service" under the Company's criteria is at the 50 percent power level after having operated at that level for 25 to 30 days. The Company desires to retain the flexibility to declare the plant "in-service" somewhere between 50 and 100 percent power in the event the Company is restrained at some power level between 50 and 100 percent. Such restraint could be imposed by the NRC or it could be self-imposed because of some equipment problem.

The Staff maintains that its criteria attempts to provide standards which, if met, will demonstrate that the Callaway Nuclear Plant is "capable of performing its full mission of supplying power and energy to Missouri customers". Staff proposes the following criteria.

Criterion 1. UE's Startup Testing Program, dated June 12, 1984, which is outlined in Exhibit 3, Schedule SH6 of the direct testimony of Steven H. Hanauer, shall be successfully completed. This shall include a successful uninterrupted run of at least 100 hours during which power is furnished to the grid at a level between 95 percent and 100 percent.

Company's Exhibit A4, Schedule A contains a start-up test schedule which is an updated version of Staff's schedule SH-6. The Staff accepts Exhibit A4, Schedule A for purposes of Criterion 1, provided the Company explain each 100 hours of delay of tests scheduled prior to July 7, 1984 and after fuel load under Criterion 5, set forth below.

The initial test schedule provides for various operations, surveillance tests and operational tests to be performed beginning with fuel load and continuing through power ascension. Tests are performed following fuel load and low power testing is performed at less than five percent power. After approval is obtained from the NRC to go above the five percent power level, tests are performed at the following power levels: 15 percent, 30 percent, 50 percent, 75 percent, 90 percent and 100 percent. Certain tests are repeated at several power levels. Generally, all tests must be completed at a given power level before permission is granted to go to the next power level. Exhibit A4, Schedule A includes two warranty tests at 100 percent power level which are not required by the Nuclear Regulatory Commission. These tests are the Steam Generator Moisture Carryover test and the Nuclear Steam Supply System (NSSS) test.

The NSSS test requires a 250-hour reliability test and demonstrates that the nuclear steam supply system can furnish the rated thermal output of 3425 megawatts. The Steam Generator Moisture Carryover test determines the amount of

moisture carried over with the steam, since it is important to remove as much moisture as possible so as not to endanger the turbine generator. A high moisture carryover could affect design efficiency and turbine longevity.

Although the Company intends to complete testing at all power levels prior to declaring the plant "in service" if everything goes well, it does not intend to complete the above-referenced warranty tests prior to declaring the plant "in-service" since these tests are not required by the NRC.

The Staff includes both warranty tests in its criteria as well as the requirement that the plant be operated for 100 continuous hours at full power (95 to 100 percent) to demonstrate the performance of the entire plant at the full power level. The 100-hour test proposed by Staff may or may not be satisfied during the NSSS acceptance test depending on the circumstances.

The Company maintains that the plant need not reach full power in order to be determined "in-service". In addition, the Company argues that the Staff's Criterion 1 is overly stringent since it not only requires that the plant reach full power but requires the completion of warranty tests. In the Company's view these warranty tests are not necessarily related to a determination of whether the plant is operational and are based solely on the specific contract entered into by the Company and the manufacturer.

With respect to the moisture test, the Company further argues that it should not be required since the Company asserts it has no near term significance with respect to the operability or reliability of the steam generator.

Criterion 2. The preoperational test program shall be successfully completed.

The preoperational test program consists of a series of tests which verify that plant components and systems fulfill their designed intent, demonstrate proper system and component response to postulated accidents and familiarize plant staff with the plant operations.

The Company has no objection to Criterion 2. At the time of the hearing 48 "punch list" items were remaining and the Company was confident that all items would be complete before reaching initial criticality.

Criterion 3. The plant and associated transmission facilities have been tested capable of supplying to the Company's customers their full share of rated power and can do so with the single most critical transmission line out of service.

Criterion 3 demonstrates that the transmission grid is adequately reliable to provide the plant's rated power. The Company has no objection to this Criterion and states that it has studies which demonstrate such capability. The Company is willing to make its studies available to Staff and interested parties. Staff is willing to accept a load flow study which satisfactorily demonstrates compliance with Criterion 3 in lieu of a test.

Criterion 4. All licenses in jurisdictions other than the Missouri PSC which are needed to allow the plant to operate continuously at full power shall have been issued or acceptable commitments obtained.

The purpose of Criterion 4 is to verify no license restrictions exist which will impede the Callaway plant's ability to operate at full power at some future date.

The Company maintains that no license conditions exist which would restrict the plant from continuous operation at full power except the current restriction in the NRC license to five percent of full power. The Company objects to this criteria on the ground that in the event the NRC places some restriction on the full power license this criteria would preclude the plant from being declared "in service".

Criterion 5. The plant's operating and NRC compliance history shows evidence of Company competence. For each NRC violation and each delay of over 100 hours in the operations schedule established at the date the operating license was issued, covering the period from the beginning of fuel loading to successful completion of the NSSS acceptance test, the cause shall have been satisfactorily explained and measures taken to prevent recurrence.

The purpose of this criteria is to demonstrate that Company personnel are capable of operating the plant in a competent manner and that no hardware problems exist which interfere with reliable operation of the plant. Staff maintains that Criterion 5 in conjunction with Criterion 1 assures reliable plant operations.

The Company objects to Criterion 5 on the ground that it is inappropriate for the Staff to duplicate the role of the NRC. In addition, the Company argues that the reporting requirements for each delay of over 100 hours is too burdensome. If such a requirement is imposed on the Company, the Company recommends that it report any single event which causes a delay of 100 hours or more in a milestone event or in the overall schedule. The Company asserts that only milestone events are reviewed by management and, therefore, restricting Criterion 5 to milestone events will focus on possibly significant events. Events other than milestone events can be altered at will by test schedulers and do not require management approval. The Company argues that scheduled alterations are inevitable and are not necessarily significant. Milestone events are designated by black circles and arrows on Exhibit A4, Schedule A.

In addition, the Company contends that the requirement to report each 100-hour delay is overly stringent since the NRC requires approval for modification to the test program of delays that exceed 30 days regarding tests occurring at below 50 percent power level and 14 days when the power level exceeds 50 percent.

Company states that it is willing to meet with Staff and other interested parties on a regular basis to explain the progress of the start up schedule. The Company is concerned that Criterion 5 in and of itself could delay the "in-service" date because of the time involved in the preparation and Staff review of the information required.

Criterion 6. Exemptions from Criterion 1-5 may be granted or the determination made that the plant is fully operational at some power level less than the rated full power originally proposed for good cause shown.

Criterion 6 allows for flexibility in the event that some event occurs which would preclude the satisfaction of one or more of Criteria 1 through 5 but under the particular circumstances would still justify declaring the plant "in-service".

Staff states that it is difficult to specify in advance what might constitute good cause. An example given was a design deficiency or safety restriction which might limit the capability of the facility for a substantial period of time.

The Company supports Staff Criterion 6 and deems it essential if the Commission adopts the rest of Staff's criteria. Company contends that some flexibility is necessary because of potential restrictions that could be imposed on the plant.

As noted above, Public Counsel and the City of Jefferson et al., oppose Criterion 6, maintaining that the plant must demonstrate its ability to generate reliably and economically at the 100 percent power level to satisfy the "fully operational" standard set out at Section 393.135, RSMo 1978.

In the Commission's opinion the Company's criteria come very close to placing judgments and determinations of "in-service" in the hands of the Company rather than with the Commission. Company's contention that "in-service" is somewhere between 50 and 100 percent power is a standard which gives no guidelines for verification. The Company's criteria do not require completion of start up testing, do not set forth any standard for the duration of operations at any power level (except 50 percent) nor do they provide any standard to determine when reliable power operation is established. In the Commission's opinion, the Company's criteria are too vague and uncertain to be utilized.

In the Commission's opinion Staff's criteria are more objective and therefore more capable of verification. The Commission determines the Staff's criteria should be utilized with certain modifications as set forth below.



Criterion 1. The UE's Startup Testing Program, which is outlined in Exhibit A4, Schedule A, shall be successfully completed. This shall include a successful uninterrupted run of at least 100 hours during which power is furnished to the grid at a level between 95 percent and 100 percent. 100 percent is 3425 MW thermal with a gross turbine output of 1185.8 MWe.

Since the Moisture Carryover test will demonstrate design efficiency and turbine longevity, the Commission determines that the test should be completed. The Company is confident that the unit will have a low moisture carryover. Although the Company maintains that the moisture carryover is an efficiency concern rather than a reliability concern and is therefore not a near-term problem, Company witness did state that a very great moisture carryover would be quite serious.

The Commission determines that it is appropriate to require the completion of the NSSS warranty test since the test demonstrates the capability of sustained operation at the rated thermal output. The Company expects to operate the plant when available at full load and therefore completion of the NSSS test will provide a high level of assurance that the steam supply system can perform as expected and as warranted by the manufacturer.

If all goes well, the moisture test, the NSSS test and the 100-hour test can be completed simultaneously. The Company plans to complete these tests and according to the Company's test schedule contained in Exhibit A4, Schedule A, the tests will be completed 14 to 15 days after the completion of power ascension. The Company proposes to declare the plant "in service" when power ascension is complete absent some restriction. In the Commission's opinion, the delay of 14 to 15 days is well worth a high level of assurance that the plant has demonstrated the capability of sustained operations at full power as warranted.

Criterion 2. The Preoperational Test program shall be successfully completed.

Criterion 3. The plant and associated transmission facilities have been tested capable of supplying to the Company's Missouri customers their full share of its rated power and can do so with the single most critical transmission line out of service.

The Company does not object to either of the above criteria. Staff has indicated that it will accept a load study as proof of satisfaction of Criterion 3. The Commission determines that the Company should provide the study to Staff for its review.

Criterion 4. On the effective date of the Commission's order allowing rate recognition of the Callaway Plant, all licenses in jurisdictions other than the Missouri PSC which are needed to allow the plant to operate continuously at full power shall have been issued or acceptable commitments obtained.

The Commission believes that this criterion is appropriate.

Criterion 5. The plant's operating and NRC compliance history shows evidence of Company competence. For each delay of over 100 hours of a milestone event contained in Exhibit A<sup>4</sup>, Schedule A, covering the period from beginning of fuel load to successful completion of the NSSS acceptance test, the cause shall have been satisfactorily explained and acceptable measures taken to prevent recurrence. The Company shall meet with Staff biweekly for the purpose of briefing Staff on the status of startup testing and provide explanations of any slips in the schedule. The Company shall have complied with all NRC requirements and all corrections shall have been accepted by the NRC as a result of NRC violations.

The Commission is persuaded that this criterion provides a means to verify the Company's ability to operate the plant reliably. It is possible that delays could point to problems that affect future reliable operations. Therefore, it is appropriate that Staff be in a position to monitor the progress of startup operations. With respect to NRC violations, it has been established that the NRC regulates primarily as to safety and therefore mechanical defects which are not safety related could possibly affect reliable operations. Thus, the Commission deems it appropriate that Staff be in a position to review NRC documents.

The Commission appreciates the Company's concern regarding burdensome reporting requirements and therefore has specified in this criterion delays of milestone events and biweekly meetings as suggested by the Company. The Commission expects the Company and the Staff to cooperate regarding Criterion 5 to minimize any burden on the Company and to afford Staff full review of the startup

operations.

Criterion 6. Exemptions from Criterion 1-5 may be granted or the determination made that the plant is "fully operational" at some power level less than the rated full power originally proposed for good cause shown.

The Commission believes that flexibility is important since these criteria are being established absent evidence of facts regarding the operating experience during start-up testing.

Criterion 7. The plant is supplying electricity to the Company's system with output scheduled by the system load dispatcher.

The Commission has added Criterion 7 to ensure that the electricity is being supplied to customers.

The Commission determines that the criteria established herein provide protection to the Company's customers against the risk of paying for a plant that turns out to be seriously defective. In the Commission's opinion the satisfaction of Criteria 1 through 5 clearly will provide the greatest assurance that the Callaway Plant is capable of providing safe, adequate, reliable and efficient service. Therefore, Criteria 1 through 5 set an optimal standard for determining when the Callaway Plant will be eligible for inclusion in rate base, but are not necessarily the minimum legal standards required to support a finding of "fully operational and used for service" under Section 393.135, RSMo 1978.

Prior to receiving any evidence regarding the operating experience of the plant the Commission is not prepared to make a finding at this juncture that a demonstration of safe and reliable plant operations at some power level less than 100 percent will never constitute "fully operational and used for service" within the meaning of Section 393.135, RSMo 1978.

Section 393.135, RSMo 1978, prohibits charges based on costs associated with property before the property is fully operational and used for service. The statute does not mandate that such costs be included in rates upon a minimum showing that the statutory requirements have been met. Therefore, the Commission has

discretion within its general regulatory powers to set reasonable standards regarding a determination of "in-service" in a particular case.

Because of the high capital cost of the Callaway Plant, the problems experienced by other nuclear plants cited in the testimony, the relative newness of the technology, and the fact that the Callaway Plant is the Company's first nuclear plant, the Commission deems it appropriate to require an optimal standard for a determination of "in-service" which shall be modified only upon a showing of good cause.

### Conclusions

The Missouri Public Service Commission has arrived at the following conclusions:

The Union Electric Company is a public utility subject to the Commission's jurisdiction pursuant to Chapters 386 and 393, RSMo 1978.

The Commission is prohibited from allowing a charge for electric service which is based on any cost associated with property before it is fully operational and used for service. Section 393.135, RSMo 1978.

Based on the competent and substantial evidence, the Commission concludes that the criteria to be used for determination of "in-service" for the Callaway Nuclear Plant shall be those which have been found reasonable herein.

It is, therefore,

ORDERED: 1. That the criteria to be used for determination of whether and when the Callaway Nuclear Plant is "in service" shall be Criteria 1 through 7, which are set forth at pages 9 through 11 of this Report and Order.

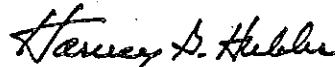
ORDERED: 2. That Union Electric Company shall file with the Commission on or before August 27, 1984, an updated testing schedule showing the estimated "in-service" date based on Criteria 1 through 5 established herein.

ORDERED: 3. That the Staff and the Company shall jointly file with the Commission on or before September 28, 1984, a list showing which events contained in

Exhibit A<sup>4</sup>, Schedule A constitute tests required under Criterion 1. If Staff and Company cannot reach agreement as to which events constitute tests, the issue should be brought to the Commission's attention.

ORDERED: 4. That this Report and Order shall become effective on the 27th day of August, 1984.

BY THE COMMISSION



Harvey G. Hubbs  
Secretary

(S E A L)

Steinmeier, Chm., Musgrave, Mueller,  
Hendren and Fischer, CC., Concur.  
Certify compliance with the provisions  
of Section 536.080, RSMo 1978.

Dated at Jefferson City, Missouri,  
this 22nd day of August, 1984.

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF MISSOURI

CASE NO. ER-84-168 ✓

In the matter of Union Electric Company of St. Louis, Missouri, for authority to file tariffs increasing rates for electric service provided to customers in the Missouri service area of the Company.

CASE NO. EO-85-17

In the matter of the determination of in-service criteria for the Union Electric Company's Callaway Nuclear Plant and Callaway rate base and related issues.

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APPEARANCES: Paul A. Agathen, Gerald Charnoff, James J. Cook, Juanita Feigenbaum and Michael F. Barnes, Attorneys at Law, P. O. Box 149, St. Louis, Missouri 63166, for Union Electric Company.

William Clark Kelly, Assistant Attorney General, P. O. Box 899, Jefferson City, Missouri 65102, for the State of Missouri.

William M. Barvick, Attorney at Law, 124 East High Street, Jefferson City, Missouri 65101, for the City of Jefferson, et al.

Douglas M. Brooks, Public Counsel, and Richard W. French, First Assistant Public Counsel, P. O. Box 7800, Jefferson City, Missouri 65102, for the Office of the Public Counsel and the Public.

Tom Ryan, Attorney at Law, 4144 Lindell, Suite 219, St. Louis, Missouri 63108, for Missouri Public Interest Research Group.

Kenneth J. Neises, Attorney at Law, 720 Olive Street, Room 1528, St. Louis, Missouri 63101, for Laclede Gas Company.

Michael Madsen, Attorney at Law, 211 East Capitol Avenue, P. O. Box 235, Jefferson City, Missouri 65102 and Boyd J. Springer, Attorney at Law, Isham, Lincoln & Beale, Three First National Plaza, Suite 5200, Chicago, Illinois 60602, for Dundee Cement Company.

Willard C. Reine, Attorney at Law, 314 East High Street, Jefferson City, Missouri 65101, and Sam Overfelt, Attorney at Law, 200 Madison Street, P. O. Box 1336, Jefferson City, Missouri 65102, for Missouri Retailers Association.

Robert C. Johnson and George M. Pond, Attorneys at Law, 720 Olive Street, 24th Floor, St. Louis, Missouri 63101, for Monsanto, et al.

Gary Mayes, Attorney at Law, Thompson & Mitchell, One Mercantile Center, St. Louis, Missouri 63011, for Metropolitan St. Louis Sewer District.

Rollin J. Moerschel, Attorney at Law, 200 North Third Street, St. Charles, Missouri 63301, for City of St. Peters, Missouri.

Howard Hickman, Attorney at Law, 404 S. Elson, Kirksville, Missouri 63501, for the City of Kirksville, Missouri.

Fred Boeckmann, Attorney at Law, 401 Independence, Cape Girardeau, Missouri 63701, for the City of Cape Girardeau, Missouri.

Robert C. McNicholas, Associate City Counselor, Room 314 City Hall, St. Louis, Missouri 63103, for the City of St. Louis, Missouri and James J. Wilson, City Counselor.

Kent M. Ragsdale, General Counsel, William C. Harrelson and Edward J. Cadieux, Deputies General Counsel, A. Scott Cauger, Martin C. Rothfelder, Paul H. Gardner and Michael C. Pendergast, Assistants General Counsel, P.O. Box 360, Jefferson City, Missouri 65102, for the Staff of the Missouri Public Service Commission.

## REPORT AND ORDER - PART 2

### PROCEDURAL HISTORY

On February 15, 1984, the Union Electric Company of St. Louis, Missouri, (hereinafter Company) submitted to the Commission proposed tariffs reflecting increased rates for electric service provided to customers in the Missouri service area of the Company. The proposed tariffs are designed to produce an increase of approximately 65 percent (\$639 million) in charges for electric services. The Company also submitted alternative "rate phase-in" tariff sheets which would implement the increase over a period of five years. The "rate phase-in" tariff

sheets would produce a 25 percent increase in 1985 with increases of approximately 8 percent per year occurring each year thereafter through 1989.

On March 5, 1984, the Company filed a Motion requesting the Commission to establish an early intervention date; to establish an early date for pleadings and for oral argument regarding the Company's request in paragraph 2 of its Motion for synchronizing the "in service" date and ratemaking treatment of the Callaway Plant; and to establish an expedited schedule for hearings, briefing and Commission resolution of the "in-service" criteria to be applied to the Callaway Nuclear Plant. On March 7, 1984, the Commission suspended the proposed tariffs from March 16, 1984 to July 14, 1984, unless otherwise ordered; set an intervention deadline for April 6, 1984; set a filing date for responses to the Company's synchronization request; and scheduled oral argument on the Company's synchronization request for April 25, 1984, to be followed by a prehearing conference for the purpose of establishing a recommended schedule of proceedings.

Oral argument was heard on the synchronization issue on April 25, 1984, followed by a prehearing conference. On May 1, 1984, the parties submitted a recommended schedule of proceedings.

On May 11, 1984, the Commission issued its Second Suspension Order further suspending the proposed tariffs until January 14, 1985. The Commission's second suspension order scheduled proceedings in four phases as follows: Phase I - in-service criteria; Phase II - non-Callaway issues, rate of return, allocations, and rate design; Phase III - Callaway and rate base related issues; Phase IV - true-up proceedings.

The Commission also directed the parties to file responses addressing a procedure whereby in-service criteria and Callaway rate base and related issues would be addressed in a separate docket to be consolidated with Case No. ER-84-168 and later severed in the event the Callaway Nuclear Plant was not in service when the Commission's Report and Order in Case No. ER-84-168 was issued.



The parties were also directed to address continued accrual of AFUDC once the Callaway Plant is in service until the plant is allowed in rate base.

On June 29, 1984, the Commission issued its Order directing the Company to provide notice to customers of the local hearings set in Cape Girardeau, St. Louis, Clayton, Jefferson City and Moberly.

The following parties were granted leave to intervene in these proceedings: the following cities located in the State of Missouri: St. Louis, St. Charles, Old Monroe, Boonville, Cape Girardeau, O'Fallon, Troy, Louisiana, Wentzville, Elsberry, St. Peters, Kirksville, Mexico, Versailles, Jefferson City, Excelsior Springs, Belle, Woods Heights, Lawson, Edina, Bevier, Eldon, Kearney, Shelbyville, Moberly, the State of Missouri, the Jefferson City school district, the Electric Ratepayers Protection Project, the Missouri Coalition for the Environment, the Missouri Public Interest Research Group, Laclede Gas Company, Missouri Limestone Producers, Dundee Cement Company, LP Gas Association, Missouri Retailers Association, the Metropolitan St. Louis Sewer District and the following Industrial Intervenors: American Can Company, Anheuser Busch, Inc., Chrysler Corporation, Ford Motor Company, General Motors Corporation, Mallinckrodt, Inc., McDonnell Douglas Corporation, Monsanto Company, National Can Corporation, Nooter Corporation, PPG Industries, Inc., Pea Ridge Iron Ore Company, River Cement Company, St. Joe Minerals Corporation (Monsanto et al.).

On July 13, 1984, the Commission initiated Docket No. EO-85-17 for the purpose of determining the "in-service criteria" to be used by the Commission for the Callaway Nuclear Plant and for the purpose of determining Callaway rate base and related issues. The Commission consolidated Case No. EO-85-17 with ER-84-168 to be heard on the existing schedule of proceedings. The procedure outlined by the Commission provided that if the Callaway Plant is not found to be in-service when the Commission issues its Report and Order in Case No. ER-84-168, Case No. EO-85-17 would be severed from Case No. ER-84-168 and would be consolidated with a new tariff filing

reflecting the inclusion of the Callaway Plant. All parties to Case No. ER-84-168 were made parties to Case No. EO-85-17.

The Phase I hearings were held July 17 through July 20, 1984, for the purpose of establishing in-service criteria. On August 22, 1984, the Commission issued its Report and Order establishing criteria to be used for the determination of when the Callaway Nuclear Plant is "in service" in order to be eligible for rate base inclusion.

On September 6, 1984, the parties presented to the Commission a Stipulation and Agreement for Phase II on all issues but rate design and rate of return. On September 11, 1984, and November 8, 1984, the parties filed amendments to the Stipulation and Agreement.

Hearings were held addressing Phase II, rate design issues on September 10, through September 14, 1984.

On September 11, 1984, Staff filed its motion for modification of hearing schedule for the Phase III portion of the proceedings and on September 18, 1984, the Company filed its reply to Staff's motion. On September 20, 1984, the Commission held oral argument to address Company's and Staff's request for modification of the hearing schedule.

On September 21, 1984, the Commission issued its Order modifying rebuttal and surrebuttal filing dates for Phase III. The order continued cross-examination to November 13 through November 21, 1984 and December 3 through December 13, 1984. The Commission recognized in its order that the Company's projected "in service" date for Callaway was January 5, 1985, and that additional hearings would be required to verify that the Callaway Plant is in service. The Commission further noted that it was apparent that the Callaway rate base and related issues could not be addressed and determined in Case No. ER-84-168 and any tariffs authorized in ER-84-168 would not include the Callaway Nuclear Plant. Further, the Commission ordered the parties to the rate design portion of Phase II to include in their rate design briefs their

positions regarding rate design for tariffs which would be limited to Phase II recovery.

On September 27, 1984, the Commission further modified the Phase III schedule of proceedings changing the filing dates for surrebuttal testimony and scheduling cross-examination for November 13 through November 19, 1984, and December 4 through December 21, 1984.

Hearings were held addressing the Phase II rate of return issue on October 26 and October 29, 1984.

Phase III hearings addressing Callaway rate base and related issues were held November 13 through November 19, 1984, and December 3 through December 21, 1984. A Stipulation and Agreement on Phase II true-up was presented to the Commission on December 20, 1984.

#### Findings of Fact

The Missouri Public Service Commission, having considered all of the competent and substantial evidence upon the whole record, makes the following findings of fact:

As noted in the procedural history set forth above, the tariffs which were filed in Case No. ER-84-168 reflect the inclusion of the Callaway Nuclear Plant in rate base.

In its order establishing EO-85-17, the Commission established a procedure to be followed in the event the Callaway Nuclear Plant was not "in service" and includable in rate base at the time the Commission issued its Report and Order in Case No. ER-84-168.

At the time the Commission continued the Phase III hearings it recognized that given the Company's estimated "in service" date of January 5, 1985, a determination with respect to Callaway could not be made in Case No. ER-84-168 and that any tariffs authorized in ER-84-168 would not include any recovery related to Callaway. As of the issue date of this Order, the Callaway record is not finally

submitted. Therefore, the Commission concludes that the only matters to be determined in Case No. ER-84-168 are Phase II Stipulation and Agreement, Stipulation and Agreement on Phase II true-up issues, Phase II rate design and Phase II rate of return. All other matters addressed in these proceedings will be determined in Case No. EO-85-17 in conjunction with the tariffs which the Company will file subsequent to the filing of tariffs found reasonable in Case No. ER-84-168.

Stipulation and Agreement - Phase II

The Stipulation and Agreement as amended and entered into by the parties was received into evidence as Joint Exhibit B-1 and is set forth below in its entirety. The amendments to the Stipulation and Agreement filed on September 11, 1984 and November 8, 1984, are hereby received into evidence and incorporated into Exhibit B-1 as Appendices A and B respectively.

STIPULATION AND AGREEMENT  
FOR PHASE II  
ON ALL ISSUES BUT  
RATE DESIGN AND RATE OF RETURN

Pursuant to the Commission's SECOND SUSPENSION ORDER, SETTING SCHEDULE OF PROCEEDINGS AND DIRECTING RESPONSES dated May 11, 1984, a prehearing conference regarding all Phase II issues except rate design and rate of return was conducted in this case at the Commission's hearing room in Jefferson City, Missouri beginning August 13, 1984. The parties participating in that part of the prehearing conference were: the Commission Staff (Staff), Union Electric Company (Company), and the Office of Public Counsel (Public Counsel). As a result of this prehearing conference, the undersigned parties (Staff, Company, Public Counsel and the City of St. Louis) stipulate and agree as follows:

1. In connection with Phase II of this proceeding and assuming, for quantification purposes only, a 15.62% rate of return on equity, the Company should be authorized to file tariffs designed to increase revenues \$9,000,000 (nine million dollars) exclusive of applicable gross receipts, franchise or other local taxes, except as this revenue requirement amount may be further adjusted and modified by the Commission's determination in the true-up proceeding in Phase IV, forecasted fuel, rate of return, and Phase III matters, all as specified elsewhere herein. The total Missouri jurisdictional cost of service, (hereinafter referred to as Phase II revenue

requirement) including the \$9 million increase and prior to true-up and forecast fuel is \$999,080,000<sup>1</sup> (treating system sales as an addition to revenues rather than an exclusion from production cost).

2. The tariffs referred to in paragraph 1 shall become effective for service on and after January 15, 1985, or earlier, if the Commission so orders.

3. The tariffs referred to in paragraph 1 shall reflect a rate design resulting from the rate design portion of Phase II of this proceeding.

4. By order of the Commission dated July 31, 1984, rate of return will be addressed in a prehearing conference commencing September 17, 1984 and in a hearing to be held on October 25-26, 1984. The 15.62 percent rate of return on equity referred to in paragraph 1 shall be replaced by the results of that prehearing conference and hearing. The Phase II Revenue Requirement shall be adjusted in either direction based upon the rate of return on equity and capital structure approved in that hearing and the true-up in Phase IV, and applied to the Phase II rate base as stipulated in paragraph 5. The 15.62 percent rate of return is the last rate of return authorized by the Commission for this Company. However, that rate appears herein to arrive at an illustrative dollar amount and is not necessarily indicative of the position of any party.

5. The parties used original cost Phase II rate base as developed by Staff of \$1,620,029,000 (one billion, six hundred twenty million, twenty-nine thousand dollars) to develop the Phase II Revenue Requirement. The parties further agree that the Phase II rate base amount should be this amount (\$1,620,029,000) as true-up as specified in paragraph 7.

6. The appropriate test year is the Staff's twelve month test year ending March 31, 1984, including known and measurable changes to June 30, 1984, adjusted for true-up as specified in paragraph 7. The Phase II Revenue Requirement listed in paragraph 1 is based upon this test year prior to the true-up as specified in paragraph 7.

7. The parties agree to a true-up of Staff's test year to update certain information in that test year to quantities, prices and levels through September 30, 1984 for the following items:

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<sup>1</sup>This amount includes return on rate base, operation and maintenance expenses, depreciation, taxes other than income taxes, and income taxes from Staff's revised income statement and revised revenue schedule.

### Income Statement

1. Revenue (load factor only)
2. Bad debt expense (as a result of any change in revenue only)
3. Payroll (employee levels only)
4. Payroll tax (except as a result of changes in payroll)
5. Property tax (as a result of changes in plant)
6. Pensions and insurance (as a result of changes in payroll)
7. Depreciation expense (as a result of changes in plant)
8. Income taxes - current and deferred (only as a result of any other changes)
9. Interchange and purchase power
10. Group life insurance expense
11. Major medical expense

### Rate Base

1. Plant and reserve
2. Fuel inventory (change from prices only)
3. Cash working capital (changes caused by other true-up items only)
4. Deferred taxes (from plant changes only)
5. Materials and supplies

### Cost of Capital

1. Capital structure
2. Cost of long-term debt
3. Cost of preferred stock

In addition, true-up of plant shall include known and measurable plant changes (additions and retirements), and related adjustments, on the condition that the plant additions are in service at the time of Staff's true-up audit and are quantifiable. Furthermore, the true-up shall include true-up of fuel expense to known and measurable fuel prices based on latest paid invoices available at the time of the true up audit. As soon as the value of these true-up items are known the parties will prepare and file a revised reconciliation of their positions similar to the reconciliation attached hereto, utilizing the updated actual figures. If the parties are unable to agree on a revised reconciliation, the record will be reopened and further evidence will be taken in order for the parties to present their respective positions or alternate schedules.

8. For purposes of determining the revenue requirement to be implemented in the Company's tariffs to be effective January 14, 1985, the Staff and Company hereby agree to utilize fuel prices known and measurable as of November 30, 1984, as evidenced by paid Company invoices and to the extent reasonable,

Company's Permanent Notice of Changes (Form 1305), and based further upon the production cost model (SSP) developed during Phase II.

10. For purposes of all phases of Case Nos. ER-84-168 and EO-85-17 through March 31, 1985, the following allocation factors shall apply:

Demand	80.70
Distribution labor	90.64
Customer Accounts labor	89.66
Customer Service labor	74.15
Sales labor	85.02
Distribution non-wage	89.70
Customer Accounts non-wage	90.04
Customer Service non-wage	87.06
Sales non-wage	92.70
Distribution plant	90.29
Administrative and General plant	82.21
Administrative and General expense	84.38
Administrative and General (reserve)	81.86
Composite payroll	83.63
Energy (subject to change related to true-up of revenue)	79.07

11. The Phase II revenue requirement developed herein does not include certain nuclear related expenditures in the amount of \$55,000 as identified in Staff's adjustment S-8.16. This item will be considered in Phase III of this proceeding.

12. In Phase III Company may raise any issue from Staff's Phase II calculations which is affected by Phase III adjustments. Company may not raise an issue related to a Phase II value or position in Phase III if such value or position is not effected by Phase III.

13. Company shall keep accurate record of the Company's rate case expenses segregated into the following categories:

- 1) Fees and expenses paid to outside consultants.
- 2) The proportional amount of time spent by and related non-wage expenses paid to all Company employees significantly involved in rate case proceedings during their preparation for and participation in rate case proceedings.

These records shall be kept in such a manner so that dollar amounts may be ascertained for each of the above categories for each Missouri rate case proceeding.

14. The Company agrees to conduct a study designed to measure losses as they occur on the Company's system-wide transmission and distribution facilities. The format, criteria

and methodologies used in the study will be formulated through joint discussions between the Company and Staff. In the event the Company and Staff are unable to reach agreement on the proper components of such a study, the Staff may petition the Commission to: (1) resolve the differences among the parties and order the Company to perform a study based on the Commission's determinations; or (2) order the Company to hire an independent, outside consultant for the limited purpose of determining the appropriate format, criteria and methodology to be used in the study; or (3) order an independent review or study as may be considered appropriate. Staff and Company agree that the costs incurred by the Company in obtaining an outside expert for these purposes should, to the extent possible, be reflected in the Company's cost of service and recovered in rates. The Company and Staff agree that every effort should be made to complete this loss study in a timely manner so as to permit the parties to utilize the results of the study in the Company's next general rate case.

The Company further agrees to identify and report all 34 kv lines and above connecting Illinois and Iowa to Missouri and their metering for purposes of identifying power flows between jurisdictions. Further the Company agrees to treat all major interconnects in a consistent manner for the purpose of determining losses. The Company also agrees to allocate General Office Building and Dorsett Storeroom usage by jurisdiction.

15. The Company agrees to provide an estimation of the installed cost for the 1221 miles of 34 KV lines carried in its FERC Uniform System of Accounts 364-367 and referenced on pages 10-11, Part A, of the direct testimony of William J. Cochran filed in Phase II of Case No. ER-84-168.

16. This Stipulation and Agreement represents a negotiated settlement dispositive of all issues except rate of return involved in developing a Phase II revenue requirement and disposing of certain other specified issues prior to Phase III of this proceeding, except as specified in paragraphs 13, 14 and 15. Except for paragraphs 13, 14 and 15 and except as specified herein, the parties to this Stipulation and Agreement shall not be prejudiced, bound by, or in any way affected by the terms of this Stipulation and Agreement: (a) in any future proceeding; (b) in any proceeding currently pending under a separate docket; and (c) in this proceeding should the Commission decide not to approve this Stipulation and Agreement or in any way condition its approval of same.

17. The parties to this Stipulation and Agreement shall not be deemed to have approved or acquiesced in any ratemaking principle, value methodology, cost of service method, or rate design proposal underlying the development of a Phase II revenue requirement or the agreement to allocations for use in this proceeding. Any number used in this Stipulation and Agreement or methodology for development of Phase II revenue requirement in this Stipulation and Agreement, shall not



prejudice or bind any party hereto, except to the extent necessary to give effect to the terms of this Stipulation and Agreement.

18. The prefiled direct Phase II testimony and exhibits of the Staff and Public Counsel witnesses on all issues except rate design and rate of return, and all prefiled direct Company testimony addressing Phase II issues except rate design and rate of return are hereby submitted for the record and shall be received into evidence for purposes of Phase II without the necessity of said witnesses taking the stand; provided, however, that to the extent the testimony and exhibits of the witnesses address the issues remaining to be heard in Phase III no evidentiary objections are waived and such witnesses shall subsequently take the stand and be subject to cross-examination on their testimony and exhibits to the extent they are relevant to those issues.

19. The Staff shall have the right to submit to the Commission, in memorandum form, an explanation of its rationale for entering into this Stipulation and Agreement and to provide to the Commission whatever further explanation the Commission requests. Such memorandum and further explanation shall not become a part of the record of this proceeding and shall not bind or prejudice the Staff in any future proceeding or in this proceeding in the event the Commission does not approve the Stipulation and Agreement. It is understood by the parties hereto that any rationales advanced by the Staff in such a memorandum and further explanation are its own and not acquiesced in or otherwise adopted by such other parties.

20. In the event the Commission accepts the specific terms of this Stipulation and Agreement, the parties waive their respective rights to present oral argument or written briefs, pursuant to Section 536.080(1), RSMO 1978, except with regard to the issues remaining to be heard in this case.

21. In the event the Commission accepts the specific terms of this Stipulation and Agreement, the parties waive their respective rights to judicial review of matters disposed of in this Stipulation and Agreement pursuant to Section 386.510, RSMo 1978.

22. The provisions of this Stipulation and Agreement have resulted from extensive negotiations among the signatory parties and are interdependent. In the event that the Commission does not approve and adopt the terms of this Stipulation and Agreement in total, this Stipulation and Agreement shall be void and no party shall be bound by any of the agreements or provisions hereof.

UNION ELECTRIC COMPANY

Respectfully submitted,

MISSOURI PUBLIC SERVICE  
COMMISSION STAFF

By: /s/  
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Jefferson City, Missouri 65102

The Commission finds that the Stipulation and Agreement is reasonable and should be accepted in disposition of the issues set forth therein.

STIPULATION AND AGREEMENT ON  
PHASE II TRUE-UP

Pursuant to the Commission's ORDER GRANTING MOTION of December 12, 1984, a prehearing conference on the Phase II true-up was held on December 17 and 18, 1984. The parties participating in that part of the prehearing conference were: The Union Electric Company (Company), the Office of Public Counsel, and the Commission Staff (Staff). As a result of this prehearing conference, the undersigned parties (Company, Public Counsel and Staff) stipulate and agree as follows:

1. In connection with Phase II of this proceeding, true-up as provided for by the STIPULATION AND AGREEMENT FOR PHASE II ON ALL ISSUES BUT RATE DESIGN; as modified by the AMENDMENT TO STIPULATION AND AGREEMENT FOR PHASE II ON ALL ISSUES BUT RATE DESIGN AND RATE OF RETURN filed September 11, 1984, by the STIPULATION AND AGREEMENT filed November 8, 1984, and by paragraph 3 below; the Company should be authorized to file tariffs designed to increase revenues by one of the amounts shown on Appendix A or by an amount developed under the same methodology as the amounts in Appendix A -- the particular amount

depending upon the rate of return on common equity decided upon by this Commission. Should the Commission request information on the revenue deficiency associated with a rate of return not listed on Appendix A, the Staff shall provide the Commission with the requested associated revenue deficiency developed in the same manner as the revenue deficiencies provided in Appendix A. This Stipulation and Agreement is intended to constitute an agreement to all aspects of developing the Phase II revenue deficiency amount except for rate of return on common equity and is not intended to in any way constrain the Commission's choices on rate of return on common equity.

2. The revenue deficiency amounts shown on Appendix A, which is incorporated herein by reference, represent the trued-up amounts of Phase II revenue deficiency based upon various relevant positions on rate of return on equity and on the proposed settlement of Phase II by the stipulations referenced in paragraph 1, except as modified by paragraph 3 herein.

3. All parties agree to not include the item designated "Revenue (load factor only)" from page 3 of the STIPULATION AND AGREEMENT FOR PHASE II ON ALL ISSUES BUT RATE DESIGN AND RATE OF RETURN in the true-up of Phase II and that the revenue deficiency amounts shown in Appendix A do not include that item.

4. Staff's revised Phase II accounting exhibits showing the development of the revenue requirements based upon Staff's, Public Counsel's, and Company's positions on rate of return on common equity shall be admitted into evidence without the need of additional testimony.

5. This Stipulation and Agreement represents a negotiated settlement dispositive of all issues except rate of return involved in developing a trued-up Phase II revenue requirement. The parties to this Stipulation and Agreement shall not be prejudiced, bound by, or in any way affected by the terms of this Stipulation and Agreement: (a) in any future proceeding; (b) in any proceeding currently pending under a separate docket; and (c) in this proceeding should the Commission decide not to approve this Stipulation and Agreement or in any way condition its approval of same.

6. The parties to this Stipulation and Agreement shall not be deemed to have approved or acquiesced in any ratemaking principle, value methodology, cost of service method, or rate design proposal underlying the development of a Phase II revenue requirement or the agreement to allocations for use in this proceeding. Any number used in this Stipulation and Agreement or methodology for development of Phase II revenue requirement in this Stipulation and Agreement, shall not prejudice or bind any party hereto, except to the extent necessary to give effect to the terms of this Stipulation and Agreement.

7. The Staff shall have the right to submit to the Commission in memorandum form, an explanation of its rationale for entering into this Stipulation and Agreement and to provide to the Commission whatever further explanation the Commission requests. Such memorandum and further explanation shall not become a part of the record of this proceeding and shall not bind or prejudice the Staff in any future proceeding or in this proceeding in the event the Commission does not approve the Stipulation and Agreement. It is understood by the parties hereto that any rationales advanced by the Staff in such a memorandum and further explanation are its own and not acquiesced in or otherwise adopted by such other parties.

8. In the event the Commission accepts the specific terms of this Stipulation and Agreement, the parties waive their respective rights to present oral argument or written briefs, pursuant to Section 536.080(1), RSMo 1978, with regard to the issues disposed of in this Stipulation and Agreement.

9. In the event the Commission accepts the specific terms of this Stipulation and Agreement, the parties waive their respective rights to judicial review of matters disposed of in this Stipulation and Agreement pursuant to Section 386.510, RSMo 1978.

10. The provisions of this Stipulation and Agreement have resulted from extensive negotiations among the signatory parties and are interdependent. In the event that the Commission does not approve and adopt the terms of this Stipulation and Agreement in total, this Stipulation and Agreement shall be void and no party shall be bound by any of the agreements or provisions hereof.

Respectfully submitted,

UNION ELECTRIC COMPANY

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## APPENDIX A

PHASE II RATE OF RETURN ON COMMON EQUITY	ASSOCIATED TRUED-UP PHASE II REVENUE DEFICIENCY
17.00 (Company Position)	\$29,287,000
16.40 (Staff Position - High-end of Range)	22,361,000
15.95 (Staff Position - Midpoint of Range)	17,322,000
15.50 (Public Counsel Position; Staff Position - Low-end of Range)	11,967,000
<hr style="width: 10%; margin: 10px auto;"/>	
15.62 (Used in developing the \$9,000,000 number in the STIPULATION AND AGREEMENT FOR PHASE II DOLLARS ON ALL ISSUES BUT RATE DESIGN AND RATE OF RETURN)	\$13,538,000

The Commission finds that the Stipulation and Agreement regarding Phase II true-up issues is reasonable and should be accepted in disposition of the issues set forth therein.

### Rate Design

Extensive rate design testimony has been presented in these proceedings. At the time the proceedings were scheduled and the rate design testimony was filed the Commission and all the parties anticipated the consideration and disposition of Callaway issues in Case No. ER-84-168. The various cost of service studies and rate design proposals presented by the parties are based on the Company's request for a 65 percent increase reflecting the Callaway Nuclear Plant.

Staff was the only party which presented evidence containing a rate design recommendation in the event Callaway costs are not reflected in the revenue requirement. Absent Callaway recovery, Staff proposes that with the exception of the

small general service class each class should receive an equal percentage increase. Staff proposes no increase for the small general service class since Staff's class cost of service study in the Company's most recent general rate case (Case No. ER-83-163) indicated that the small general service class was producing revenue significantly above its cost of service. Staff asserts that no increase for small general service is appropriate for any non-Callaway increase in the Company's revenue requirement up to 15 percent.

Staff recommends that within each customer class the non-Callaway requirement increase be spread on an equal percentage basis to all rate elements other than the customer charge which should be held constant.

The Company and the Public Counsel concur with Staff's recommendation that all classes other than the small general service class receive an equal percentage increase. In addition, the Public Counsel recommends that each tariff element be increased by an equal percentage. The Company recommends that the Commission approve the entire rate design proposed by the Company which the Company argues should be utilized for both ER-84-168 and EO-85-17.

Dundee proposes that in the absence of Callaway recovery the increase should be applied uniformly to each rate and charge of UE for every customer class and that the rate design features of each present rate should be maintained.

Monsanto, et al. proposes that the Commission adopt their rate design proposal and develop a rate design reflecting a non-Callaway increase by removing the Callaway costs from the overall rate increases recommended by witness Brubaker.

Since the cost of service studies and rate design proposals were presented in the context of costs associated with the inclusion of the Callaway Nuclear Plant in rate base, the Commission determines that it would not be appropriate to address these extensive proposals in the context of the comparatively small percentage increase authorized herein.

The Commission finds that Staff's recommendation regarding rate design for the non-Callaway increase is reasonable and should be adopted. In Case No. ER-84-163 no increase was established for the small general service class in recognition of the fact that the rates for the small general service class were too high. In the instant case the various cost of service studies show returns for the small general service class exceeding the system average return. Therefore, the Commission determines that the appropriate increase for the small general service class should be determined in the context of the cost of service studies submitted herein reflecting the inclusion of the Callaway Plant. This determination will be made in the Commission's Report and Order in Case No. EO-85-17 and its related tariff filing.

Accordingly, the Commission finds that the increase authorized herein shall be recovered from all classes excluding the small general service class on an equal percentage basis and that within each customer class the increase shall be spread on an equal percentage basis to all rate elements other than the customer charge which shall be held constant.

Finally, the Commission determines that all rate design issues litigated and not determined herein shall be determined based on the existing record in the Commission's final order in Case No. EO-85-17 and its related tariff filing according to the procedures previously established by the Commission.

#### Rate of Return

The Company and Staff have agreed to the method to be used to calculate the cost of debt and preferred stock and to the Company's capital structure subject to true-up in accordance with the Phase II Stipulation and Agreement. The agreed to amounts as trued-up and as shown in late-filed Exhibit No. 126 are set forth below:

<u>Component</u>	<u>Amount (000's) Omitted</u>	<u>Capital Ratio</u>	<u>Embedded Cost</u>	<u>Weighted Cost</u>
Long Term Debt	\$2,378,541	.5149	10.28%	5.29%
Preferred Stock	\$ 535,721	.1160	9.65%	1.12%
Common Stock	\$1,704,775	.3691		

The Commission determines that the agreed to cost of debt, preferred stock and capital structure are reasonable and should be adopted. Therefore, the only determination to be made herein is the appropriate cost of common equity for Union Electric Company.

The Company recommends a return on equity of 17 percent while the Staff recommends a return in the range of 15.5 percent to 16.4 percent.

Company witness Birdsong prepared the return on equity recommendation which was submitted by the Company. Mr. Birdsong's analysis consists of applying the discounted cash flow methodology (DCF) to calculate expected investor return for Union Electric common stock. The DCF analysis has traditionally been presented and accepted by this Commission in rate cases before it. The DCF formula calculates the cost of common equity for a given company by summing the dividend yield (dividend per share divided by market price) and the dividend growth rate.

Mr. Birdsong also performed a comparative analysis, calculating return on equity for a group of companies selected from Value Line Investment Survey.

The Company's DCF-derived return for Union Electric was calculated using the time period January, 1981 through September, 1983, for the dividend yield portion of the formula. The market price per share reflects the average daily closing market prices for each month during the period and the dividend portion is the dividend expected to be received in the forthcoming year under the Company's then existing dividend experience. The average of the 33 dividend yields during the period is



calculated at 13.01 percent which is the value utilized in Mr. Birdsong's DCF formula.

To determine the growth rate Mr. Birdsong used the years 1981 to 1985. Actual dividends were used for 1981 through 1982; third quarter dividends were used for 1983; expected dividends were determined for 1984 and 1985 assuming continuation of then existing dividend experience. Fitting a linear regression line through the logarithms of the 1981 through the 1985 dividend rates, Mr. Birdsong calculated a growth rate of 3.73 percent.

The dividend yield and growth rates calculated by Mr. Birdsong result in a return on equity of 16.74 percent. The dividend yield was divided by .96 to reflect issuance costs of four percent. This adjustment results in a cost of equity of 17.28 percent.

In performing his comparative analysis, Mr. Birdsong selected his comparable companies based on the risk measures of "beta" and "safety". Mr. Birdsong then performed a DCF analysis on the comparable companies which produced a required return of 16.66 percent.

The above-described DCF analysis of UE and the comparable companies form the basis for the Company's recommendation of a 17 percent required return on equity.

Staff witness Parcell performed a short-term and a long-term DCF analysis to arrive at returns on equity for the Company's common stock. In addition, Staff conducted a comparable earnings analysis.

Staff's long-term DCF analysis calculated dividend yields and growth rates for the Company, Moody's 24 utilities (Moody's) and a group of electric companies. A five-year period was used in the analysis encompassing 1979 through 1983. Mr. Parcell's 1979 through 1983 average yield is 12.4 percent for Union Electric Company, 11.4 percent for Moody's and 12.1 percent for the electric group.

Mr. Parcell used an earnings retention method to estimate growth employing a 1979 to 1983 five year average which is 3.6 percent for Union Electric, 3.1 percent for Moody's and 2.9 percent for the electrics.

Mr. Parcell also calculated 1979 to 1983 compound growth rates to corroborate his retention growth rate. The compound growth rate for Union Electric, Moody's and the electric companies are 2.88 percent, 4.76 percent and 3.16 percent respectively.

Utilizing his yield and retention growth components Mr. Parcell calculated DCF cost of equity rate of 16 percent for UE, 14.5 percent for Moody's and 15 percent for the electric group. An adjustment for issuance cost results in 14.8 percent cost of equity for Moody's and 15.3 percent for the electrics. Mr. Parcell made no adjustment for issuance costs for Union Electric since no public offering common stock is anticipated in the near future.

Based upon his long-term analysis, Mr. Parcell concluded that a range of 15 to 16 percent represents the long-term DCF cost of equity for the Company.

Mr. Parcell's short-term DCF analysis is based on the dividend yield and dividend growth experience of UE over the period 1981 through the third quarter of 1984. This analysis indicates an average dividend yield of 13.0 percent, a retention growth rate of 4.10 percent and a compound growth rate of 3.43 percent. Based on his short-term analysis utilizing the 3.4 percent to 4.1 percent range of growth rates, Mr. Parcell calculated a total short-term DCF cost for UE to be in the range of 16.4 percent to 17.1 percent.

Mr. Parcell's comparable earnings analysis compares risk's proxies for Union Electric, Moody's 24 utilities and Standard and Poor's 400 industrials. Analyzing "safety", "beta", financial strength, earnings predictability and price stability, Mr. Parcell concluded that Union Electric has greater risks than the average utility and similar risks to the average industrial.

Based on the earnings experience of industrials of 14.5 to 15 percent over the past five years and 14 to 14.5 percent over the past ten years, Mr. Parcell concluded that a comparable earnings test indicates a cost of equity of 14.5 to 15 percent as appropriate for Union Electric.

The lower end of Staff's recommended range of (15.5 percent to 16.4 percent) represents the mid point of the long-term analysis (15 to 16 percent). The upper end represents the low end of the short-term analysis (16.4 to 17.1 percent). Staff's witness recommends the lower end of the short-term range since he places more reliance on the long-term analysis than on the short-term analysis.

Having reviewed the Company's and Staff's recommendations, the Commission determines that it should not rely solely on the short-term periods utilized by the Company and Staff in their DCF analyses. As pointed out by Staff Witness Parcell this period depicts market perceptions of Union Electric Company since 1981 reflecting the Company's financial condition associated with the Callaway construction project. Since the construction period is ending, the Commission is of the opinion that greater weight should be placed on the longer time periods contained in Mr. Parcell's long-term DCF analyses.

The Commission believes that primary weight should be given to the Union Electric Company specific long-term DCF analysis performed by Mr. Parcell. This analysis indicates a return of 16.0 percent. The Commission further notes that Mr. Parcell's long-term DCF analysis for the comparable electric companies with Kansas City Power & Light Company substituted for Pacific Power & Light Company shows a return of 15.7 percent which is close to the 16.0 percent long-term DCF calculated by Mr. Parcell for Union Electric Company. The Commission believes that the substitution of Kansas City Power & Light in the comparable electric DCF analysis is appropriate since it meets Mr. Parcell's comparability criteria.

Even though the Commission believes that primary weight should be given to the long-term analyses described above, the higher returns shown for the 1981 to 1984 and 1981 to 1983 periods calculated by Mr. Parcell and Mr. Birdsong should be given some consideration.

The Commission believes that it would be more appropriate to use actual yields rather than the estimated yields contained in Mr. Birdsong's and Mr. Parcell's

short-term analyses. Thus, substituting actual yields rather than estimated yields for the October, 1981 through June, 1982 period and extending Mr. Birdsong's time period through August, 1984 to correspond with Mr. Parcell's time period, a yield figure of 12.90 would result from both Mr. Parcell's and Mr. Birdsong's short-term DCF analyses. Utilizing the Company's growth rate of 3.73, which the Commission believes to be more reasonable than Mr. Parcell's short-term growth rates, results in a return of 16.63. The Commission does not believe any adjustment should be made for issuance costs and market pressure since no stock offering is contemplated in the near future.

Based on the above considerations, a range of 15.7 percent to 16.63 percent would result. Since the Commission places greater reliance on Mr. Parcell's long-term Union Electric specific DCF calculation, it determines that a reasonable return on equity to be used for purposes of this case is 16.1 percent.

Applying the cost of capital agreed to by the parties, and utilizing a 16.1 percent return on equity, the Commission determines that the overall cost of capital to be used in this case is 12.35 percent.

#### Conclusions

The Missouri Public Service Commission has arrived at the following conclusions:

The Company is a public utility subject to the jurisdiction of this Commission pursuant to Chapters 386 and 393, RSMo 1978.

The Company's tariffs which are the subject matter of this proceeding were suspended pursuant to authority vested in this Commission by Section 393.150, RSMo 1978, and the burden of proof to show that the increased rates are just and reasonable is upon the Company.

The Commission may consider all facts which, in its judgment have any bearing upon the proper determination of the setting of fair and reasonable rates.

The Commission may accept a stipulation and agreement in disposition of the issues of a rate proceeding when it appears that the proposed settlement is fair and equitable to all concerned. In the instant case, all parties participating in the revenue requirement portion of the Phase II proceedings, have agreed to the proposed settlements. The Commission is of the opinion that the settlements regarding Phase II accounting and true-up issues should be adopted and that the Company shall be allowed to file revised tariffs in conformance therewith and in conformance with the rate of return and rate design found reasonable herein.

Based on the settled matters, and the rate of return found reasonable herein the Commission concludes that the Company should be allowed to file revised tariffs designed to increase gross revenues, exclusive of gross receipts and franchise taxes by approximately \$18,880,977 on an annual basis.

Finally, the Commission concludes that the record in these consolidated cases pertaining to rate of return and rate design shall be incorporated in Case No. EO-85-17. The Commission further determines that the record in Case No. EO-85-17 which contains Phase I in-service criteria, Callaway rate base and related issues, rate of return and rate design shall be severed from Case No. ER-84-168 and all issues addressed in Case No. EO-85-17 will be determined when the Commission issues its Order concerning Case No. EO-85-17 and its related tariff filing.

It is, therefore,

ORDERED: 1. That the Stipulations and Agreements received in this matter as Joint Exhibit B-1 and Joint Exhibit B-122 hereinabove set forth, are hereby accepted and adopted in disposition of all matters set forth therein.

ORDERED: 2. That pursuant to the Stipulations and Agreements, and the rate of return determination made herein, the proposed revised tariffs filed by the Union Electric Company of St. Louis, Missouri, in this case be, and the same are, hereby disapproved, and the Company is authorized to file in lieu thereof, for approval of this Commission, tariffs designed to increase gross revenues, exclusive

of gross receipts and franchise taxes, by approximately \$18,880,977 on an annual basis.

ORDERED: 3. That the tariffs authorized herein shall reflect the rate design found reasonable in this Report and Order.


ORDERED: 4. That the tariffs to be filed pursuant to this Report and Order shall be effective for service rendered on and after January 14, 1985.

ORDERED: 5. That late-filed exhibit 126 be, and it is, hereby received.

ORDERED: 6. That any objections not heretofore ruled upon are overruled and any outstanding motions are denied.

ORDERED: 7. That this Report and Order shall become effective on January 14, 1985.

BY THE COMMISSION



Harvey G. Hubbs  
Secretary

(S E A L)

Steinmeier, Chm., Musgrave, Mueller,  
Hendren and Fischer, CC., Concur and  
certify compliance with the provisions  
of Section 536.080, RSMo 1978.

Dated at Jefferson City, Missouri,  
this 4th day of January, 1985.