

4/18/84

For: Judge Plaine
OGC

From: Larry Crocker
DAFS/NRR
24891

Re: Diablo Canyon

Per your request to Hugh Thompson for info relating to Shift Advisors, attached are:

1. Extracts from Supplement 10 to the Diablo Canyon SER (NUREG-0675), pp. I.B-3 and I.A-5; and Supp. 12, pp. I-9 and I-13.
2. PG&E letter of 3/23/84 describing the Shift Advisor program.
3. PG&E letter of 3/29/84 which transmitted exams for Shift Advisors.
4. Report of E.L. Thomas, et al, which presents industry evaluation of Shift Advisor program.

Larry Crocker

The Technical Assistant to the Plant Manager is responsible for general assistance to the Plant Manager in the development of technical programs and procedures, including plant generic training programs, and the planning and scheduling of outages. He has a staff of about 5 persons.

The Quality Control Supervisor supervises the overall plant quality control program. He has a staff of about 8 persons.

The Security Supervisor is responsible for the planning, supervision, and coordination of all activities of the plant security program. The security force is under his direction.

The Personnel Representative provides assistance to the Plant Manager and guidance to the plant staff in matters of personnel administration at the plant level.

Numbers and qualifications of licensed operators are discussed in Section I.A.1.3 of this supplement. As stated there, we find that the shift manning, subject to acceptable completion of the NRC operator licensing examinations, acceptably meets the staff criteria stated in Item I.A.1.3 of NUREG-0737.

Our review of the operating organization indicates an acceptable plant staff arrangement, numbers of personnel, and qualification of key personnel. However, as noted in Supplement 10 to the SER, those individuals currently assigned to the plant staff lack experience in the operation of large PWRs. We are requiring, and the applicant has committed to, the augmentation of the plant staff to provide on each shift an individual experienced in comparable PWR operation during initial fuel loading and through the startup test program up to a power level of 100% of rated full power. We find this augmentation acceptable.

On the basis of the information provided by the applicant and the onsite visits by the joint NRC review team, we conclude that the plant staffing is in accordance with the draft guidelines, NUREG-0731, and Item I.A.1.3 of NUREG-0737 and is acceptable.

Safety Engineering Group and Onsite Evaluation Capability

Position

An independent safety engineering group shall be established to increase the available technical expertise located onsite and to provide for continuing, systematic and independent assessment of nuclear plant activities. This group, which shall consist of not less than five dedicated, full-time engineers, shall be physically located onsite, but shall report offsite to a high-level corporate official who is not in the management chain for power production. The function of this group shall be to examine plant operating characteristics, NRC issuances, Licensing Information Service advisories, Licensee Event Reports, and other appropriate sources which may indicate areas for improving plant safety. Where useful improvements can be achieved, it is expected that this group will develop detailed recommendations for revised procedures, equipment modifications, or other means of achieving the goal of improved plant safety. A principal function of the independent safety engineering group shall be to maintain surveillance of plant operations and maintenance activities to provide independent verification that these activities are performed correctly and

PACIFIC GAS AND ELECTRIC COMPANY

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J. G. SCHUYLER
VICE PRESIDENT
NUCLEAR POWER OPERATIONS

March 23, 1984

PG&E Letter No.: DCL-84-111

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D.C. 20555Re: Docket No. 50-275, ~~EL-598-75~~
Docket No. 50-323
Diablo Canyon Units 1 and 2
Shift Advisors Experience and Training

Dear Mr. Knighton:

On March 15, 1984, PG&E submitted Letter No. DCL-84-096 containing information regarding the experience of operating shift personnel. This information was presented using the criteria established by the NTOL Utility Group on operations experience. While the March 15, 1984 submittal indicated PG&E would use Shift Advisors consistent with the Utility Group recommendations, the submittal did not address the qualifications of the Shift Advisors. PG&E plans to have Shift Advisors who have the qualifications and training recommended by the Utility Group on staff prior to exceeding five percent power.

The experience of these Shift Advisors will include, as a minimum, 1) four years power plant experience of which at least two years is with nuclear plants, and 2) one year of shift experience at a PWR operating plant as a Senior Reactor Operator (SRO) or a Reactor Operator (RO).

PG&E will train the Shift Advisors on plant-specific items, such as Technical Specifications, Operating Procedures, and Plant Systems.

Upon completion of plant-specific training, the Shift Advisors will be subjected to a final examination which will include a written examination as well as an oral examination from a board of examiners composed of three SRO's.

PG&E will develop a procedure which identifies the duties and responsibilities of the Shift Advisors. Further, shift crews will be made aware of the duties and responsibilities of the Shift Advisors.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

J. G. Schuyler

cc: H. L. Thompson (NRC)

COPY

send 4/7 DCM OLB
~~1/1/84~~

PACIFIC GAS AND ELECTRIC COMPANY

PG&E +

77 BEALE STREET, SAN FRANCISCO, CALIFORNIA 94106

TELEPHONE (415) 781-4211

March 29, 1984

PGandE Letter No.: DCL-84-122

Mr. George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington D.C. 20555

Re: Docket No. 50-275, ~~OL-198-75~~
Docket No. 50-323
Diablo Canyon Units 1 and 2
Tests Given to Shift Advisors

Dear Mr. Knighton:

As requested by the NRC Staff, enclosed are the written and oral examinations administered on March 23, 1984 to the Shift Advisors who will be utilized at Diablo Canyon.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,

J. O. Schuyler

by J. D. Shiffer

Enclosures

cc: D. H. Beckham
~~██████████~~ (NRC)
Service List

8404030166 PDR

(Extract - NUREG-0675,
Supp. 10, Aug 1980)

Prior to a decision on issuance of a license permitting fuel loading and low power testing, we will assure that the new organization is functioning and that staffing levels are sufficient to assure that critical positions on the staff are properly covered. We will review the functioning of the revised corporate organization during the low power test program to assess the adequacy for managing safely long-term, full-power operation of the Diablo Canyon plant.

The review team inquired into the provisions to be made by Pacific Gas and Electric Company for accident mitigation and recovery. We learned that there are no formal procedures now in place for accident mitigation and recovery. However, current plans for accident mitigation and recovery are to provide offsite support by sending a few key people to staff the near-site Emergency Operations Center, while keeping the bulk of the technical support in the corporate office where they have the data files, equipment and facilities to provide in-depth technical support to the plant as required. This matter also will be addressed in the August 1980 amendment to the FSAR and the staff will evaluate it at that time.

Operating Organization-

The operating organization for Diablo Canyon Units 1 and 2 also is being revised in conjunction with the reorganization of the corporate management structure. Prior to a decision on issuance of a license for fuel loading and low power testing, we will review the new plant staff organization in regard to organizational arrangement, responsibility and authority of personnel, and the number and qualifications of persons assigned to this organization. Shift manning is discussed in Section I.A.1.3 of this supplement.

Our preliminary review of this organization indicates an acceptable plant staff arrangement and a significant increase in numbers of personnel assigned to the plant staff. We will review the details of this organization when it is submitted to the staff. The applicant plans to revise Section 13.1 of his FSAR to describe this organization.

We noted in our review of those individuals currently assigned to the plant staff that they lack experience in the operation of large PWR's. We are requiring, and the applicant has orally committed to the augmentation of the plant staff to provide on each shift an individual experienced in comparable PWR operation during initial fuel loading and for the duration of the low power test program. (See Section I.A.1.3 of this supplement, Requirement (4).)

The proposed reorganization and staffing in the radiation protection area meets the NRC staff criteria, except that currently there are only two radiation and process monitors (radiation/chemistry technicians) who have had two years of experience as specified in ANSI 18.1-1971, "Selection and Training of Nuclear Power Plant Personnel," and who have completed the PG&E technician training program. PG&E will be required to have onsite at all times a radiation protection technician with the qualifications specified in ANSI-18.1. The licensee has committed to add sufficient qualified radiation protection technicians so that

I.A.1.3 Shift Manning

Position

Assure that the necessary number and availability of personnel to man the operations shifts have been designated by the licenses. Administrative procedures should be written to govern the movement of key individuals about the plant to assure that qualified individuals are readily available in the event of an abnormal or emergency situation. This should consider the recommendations on overtime in NUREG-0578. Provisions should be made for an aide to the shift supervisor to assure that, over the long term, the shift supervisor is free of routine administrative duties.

Clarification (As provided in discussions with PG&E in June 1980)

The staff's requirements for shift manning for Diablo Canyon Unit 1 is as follows:

1. Fuel loading - Each shift shall be composed of at least two senior licensed operators, one licensed operator, and one unlicensed operator.
2. Cold shutdown - Each shift shall be composed of at least one senior licensed operator, one licensed operator, and one unlicensed operator.
3. Operation (Modes 1-4, includes low power testing) - Each shift shall be composed of at least two senior licensed operators (one of whom is in the control room), two licensed operators (one of whom is at the controls), and two unlicensed operators. In addition, a shift technical advisor and radiation protection technician shall be onsite at all times.
4. For (1) and (3) above, continuing through the test program, each shift shall include at least one individual with experience in the operation or startup testing of a comparable PWR.
5. The minimum number of licensed operators and senior operators that must be available prior to the commencement of Diablo Canyon Unit 1 fuel load and low power testing within the constraints of (6) and (7) below is as follows:
 - (a) Fuel loading (based on three shift coverage) - six senior licensed operators
- three licensed operators
 - (b) Cold Shutdown (based on four shift coverage) - four senior licensed operators
- four licensed operators
 - (c) Operation (Modes 1-4) (based on four shift coverage plus one additional for vacation and sick relief) - nine senior licensed operators
- nine licensed operators

DUKE POWER COMPANY
NUCLEAR PRODUCTION DEPARTMENT
P.O. BOX 23422, 422 SOUTH CHURCH STREET
CHARLOTTE, N.C. 28242
(704) 373-4011

April 11, 1984

Mr. Hugh Thompson
Nuclear Regulatory Commission
Division of Human Factors & Safety
AR 5200
4550 Montgomery Avenue
Bethesda, Maryland 20814

Dear Mr. Thompson:

At the request of Mr. J. O. Schuyler, Pacific Gas & Electric Company, I have attached a copy of the Utility Advisor Evaluation Team's report of the Diablo Canyon Shift Advisor Evaluation.

Please call if you need additional information or clarification.

Yours very truly,

E. L. Thomas, Manager
Nuclear Reliability Assurance

ELT/lk

cc: J. O. Schuyler, Pacific Gas & Electric Co.
H. B. Tucker, Duke Power Co.

Enclosure

~~445020255~~ PDR

UTILITY ADVISOR EVALUATION TEAM
REPORT
ON
DIABLO CANYON SHIFT ADVISOR PROGRAM

April 4, 5 & 6, 1984

April 10, 1984

~~8445010390 PDR~~

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1. EXECUTIVE SUMMARY

Recent industry efforts have focused on identifying appropriate experience for NTOL plants as a part of a broader program to improve the managerial and technical competence of those involved in the operation of nuclear plants. A special NTOL experience group chaired by H. B. Tucker, Vice President Nuclear Production, Duke Power Company, was asked by Pacific Gas and Electric Company to assemble a team to evaluate the Diablo Canyon Shift Advisor Program.

The six member Utility Advisor Evaluation Team (UAET) consisting of representatives from four major nuclear utilities, conducted a comprehensive evaluation of the Diablo Canyon Shift Advisor program on April 4, 5 and 6, 1984. The UAET evaluated all aspects of the program including advisor training, qualifications, responsibilities, interfaces between the shift crews and the advisor, procedures and examinations. The evaluation included documentation reviews, interviews with advisors and PG&E operations staff, and direct observation of shift operations and classroom instruction.

The UAET concludes that PG&E has defined an effective Advisor program; has selected qualified individuals and has provided training appropriate for the shift advisors. The PG&E Advisor program equals or exceeds all requirements presented to the NRC by the NTOL Utility Group on February 24. Additionally, PG&E committed to the UAET to incorporate the UAET recommendations into their Advisor program which will further strengthen their program.

The UAET also concludes that these advisors can rapidly and effectively communicate their experience to the PG&E shift crew. It is the UAET's unanimous opinion that PG&E's Advisor program provides additional assurance that the Diablo Canyon Nuclear Plant can be started up and operated safely and in accordance with NRC regulatory requirements.

II. OBJECTIVE, SCOPE AND METHODOLOGY

- o Evaluation of PG&E's Shift Advisor Program and the qualifications of each advisor on shift at Big Bend Canyon Power Plant.
- o The Scope of the evaluation consisted of a review of the following:
 - a) The training provided the advisors, including the extent of the training, the criteria for the training, the specific procedures (administrative, normal, abnormal, and emergency), Plant Technical Specifications, specific plant systems, and the scope, content, and grading of the examinations given.
 - b) The procedure that defines the specific duties and responsibilities of the Shift Advisor, the training provided to the shifts to ensure their understanding of the program, the advisor's functions, their limitations and access to plant management above the Shift Supervisor.
 - c) The training records, observation of classroom training in-progress and observation of on-shift crews performing routine operation including shift turnovers and briefings.
- o The team divided into groups and conducted reviews of assigned areas; normal shift operations, shift turnovers, shift briefings, observation of the shift crews/advisor interface, the training program, resumes of the individual advisors, interviews with most of the advisors, interviews with operations, training and plant management, and observation of training in progress.

A post evaluation discussion was held with PG&E's management to review the team findings.

III. EVALUATION RESULTS BY SECTION

A. INTERVIEWS

There were several types of interviews conducted with the PG&E Shift Advisors and staff. These included a shift licensed group interview with all UAET members present, several one-on-one and two-on-one interviews in both the off-shift and on-shift environment.

The purpose of these interviews was threefold. First, there was the verification of adequate communication relating to the duties and responsibilities of the Shift Advisor. This verification was performed by comparing the responses obtained from the various advisors, control room RO's and SRO's to the responses obtained by staff members delineating the duties and responsibilities of these advisors. Second, all the responses were compared to the duties and responsibilities stated in PG&E's plant procedures.

Third, to evaluate the Shift Advisors specific training needs that are relative to their stated duties and responsibilities. This again was accomplished by comparing responses as described previously.

In summary, the UAET members have found that PG&E's advisors, shift crews and plant staff generally agree on the function of the shift advisor. However, inconsistencies existed concerning an understanding of the duties and responsibilities of the shift advisor. UAET members also agree that the training provided meets or exceeds the requirements necessary to adequately function as Shift Advisors for PG&E's Diablo Canyon plant.

Finally, in order to enhance the existing advisor program, the UAET members recommended the following improvements:

- o Change the plant procedure delineating the advisors duties and responsibilities such that those stated are in agreement with those actually being practiced.
- o Discuss the new procedure with the shift crew, advisors and appropriate plant staff.
- o Provide one advisor with approximately one week of Westinghouse simulator training since his experience was related to a Combustion Engineering P&ID.

B. SHIFT OBSERVATIONS

Two shift turnovers were observed by various members of the UAET. These reviews enabled the team to evaluate, in part, the Shift Advisor's conformance to stated responsibilities and performance of duties. These responsibilities and duties are prescribed in a procedure.

The advisor's turnover requirements are not described by procedure. However, the advisors are all experienced in operations and maintain their own log. They used this log and a control board walkdown to inform the oncoming advisor of significant activities accomplished during the previous shift or that were in progress. On most shift turnovers, it was stated that a briefing is conducted between the Shift Foreman and the operating crew including the Shift Advisor. This is an additional method for the advisor to maintain awareness of activities and was observed on one shift turnover.

The Shift Advisor is stationed in the main control room near the Senior Control Operator (an SRO). This should enable him to be involved in operating decisions since he can easily observe the main control board and annunciator panels and also make recommendations regarding activities discussed between the Shift Foreman and Senior Control Operator who control shift operations.

C. CLASSROOM OBSERVATION

Several UAET members observed a portion of the classroom training provided the Shift Advisor. The training provided was consistent with the training staff's course outline and flow sheet. The instructor was knowledgeable of current industry experience and presented an effective program on significant events with potential application to the Diablo Canyon Power Plant. The pace of the class was appropriate for the student level of training and experience. The program, as presented, represents SRO level instruction and content.

D. RESUME REVIEW

Each of the nine Shift Advisor's resumes were reviewed and NRC licenses held by these individuals were verified by NRC Region V with the exception of one person. Verification of one person's license was made by direct contact with the plant for which this person held a license. One Shift Advisor candidate was rejected for lack of adequate hot operating experience and it was recommended that one candidate receive an additional week of simulator training. All remaining candidates resumes indicated that they exceeded the industry requirements proposed for the Shift Advisor position.

In addition to the resume review and license verification, seven of the nine candidates were personally interviewed either on the job in the control room or in special sessions during the classroom training programs. Additional information about the candidates usefulness and their experience was obtained by direct interviews with Shift Foremen, Shift Technical Advisors and Senior Control Operators.

E. ADVISOR PROCEDURE REVIEW

PG&E developed a procedure to cover the scope, responsibilities, limitations, duties and working relationships of the Shift Advisor. The procedure covered all the important aspects of the Advisor's role and specifically stated his responsibility:

"The Shift Advisor will review and assess the impact of significant shift activities that are scheduled or in progress and will keep control room personnel apprised of any potential problem areas... (including plant shutdowns)."

The UAET believes that PG&E's procedure meets the current industry NTOL requirements. The UAET made several recommendations for improving this procedure and PG&E committed to implement these recommendations. *

* See Attachment

F. TRAINING LESSON PLAN REVIEW

A training course for the Shift Advisors was developed by the station's training department. The training staff performed a review of the duties of the advisor and developed a training plan specific to the needs of the advisors. This course was four weeks in duration and included plant walkthroughs, Technical Specifications, plant procedures, and plant systems. The UAET reviewed the lesson plans for the first and fourth week of this program since these weeks included training in all areas within the scope of our program evaluation - plant procedures, Technical Specifications, and plant systems. Evaluation of the examination is discussed elsewhere. The training plans were considered satisfactory for the Shift Advisor position. Emphasis was placed on the more significant operating and emergency procedures and plant systems. Since most advisors were familiar by experience with the Standard Technical Specifications and are not functioning as an SRO, the short time spent on the Diablo Canyon Technical Specifications is satisfactory. The UAET considered the Shift Advisors training plans to meet the requirements of the NTOL Utility Working Group.

G. EXAMINATION REVIEW

The UAET reviewed the content and grading of PG&E's oral and written examinations which were administered to the first group of Shift Advisors to complete training. The examinations were representative of the Advisor Training Program. The examination content had sufficient depth including plant specific and Westinghouse generic questions to assure that any Advisor who passed the examinations would be able to effectively relate and communicate their experience to Diablo Canyon operators. The grading was also considered appropriate.

The UAET reviewed the mix of generic and plant specific examination questions. Approximately 44% to 68% of the questions were considered plant specific. The generic questions were considered appropriate. These questions reviewed important general aspects of Westinghouse reactor operation especially for Advisors who have held a license on a Combustion Engineering PWR.

IV. UTILITY ADVISOR EVALUATION TEAM MEMBER EXPERIENCE

GEORGE BOCKHOLD, JR.
GENERAL MANAGER, VOGTLE NUCLEAR OPERATIONS
GEORGIA POWER COMPANY

Mr. Bockhold has ~~seventeen~~ years of nuclear experience including SRO commercial Shift Supervisor line responsibilities during the startup and operation of the 900 ~~two~~ Westinghouse Indian Point Units. He managed and instructed licensed operators and supervisors on both generic and reference plant simulators, and has directed research associated with operators performance. He is currently responsible for the startup, operation and maintenance of the Vogtle Nuclear Units.

JOHN P. LEIDER
SUPERVISOR SAFETY ENGINEERING GROUPS
OFFICE OF NUCLEAR SAFETY
COMMONWEALTH EDISON COMPANY

Mr. Leider has ~~twenty~~ years of power plant experience with Commonwealth Edison Company including over thirteen years of nuclear experience. Mr. Leider received a cold SRO license on Zion Station in March 1973 and continues to hold this license. Specific job assignments and responsibilities in the nuclear area include Operating Engineer at Zion Station responsible for the performance of operations personnel during Units 1 and 2 startup and operation, Assistant Superintendent at Zion responsible for operations and maintenance activities, Nuclear Division Staff Engineer developed with EPRI a disturbance analysis surveillance system (DASS), and Supervisor of the onsite safety engineering groups in the Office of Nuclear Safety.

CHRIS I. MCLEAN
SR. PLANT INSTRUCTOR - SIMULATOR FARLEY NUCLEAR PLANT
ALABAMA POWER COMPANY

Mr. McLean has approximately thirteen years of nuclear experience including eight years of commercial experience. He is currently SRO licensed on Farley 1 and 2 with 5 1/2 years SRO experience with duties including Shift Foreman, Shift Supervisor and currently operations plant specific simulator and classroom instructor. Plant specific experience includes startup of Farley 1 as an Assistant Plant Operator, Hot Licensed SRO Shift Foreman on Farley 1, Cold License SRO Shift Supervisor on Farley 2 and various procedural and lesson plan development tasks associated with both the operation and training areas at Farley Nuclear Plant. Currently, he is actively engaged in license training on the Farley plant specific simulator.

FRANK A. PALMER
ASSISTANT TO EXECUTIVE VICE PRESIDENT
COMMONWEALTH EDISON COMPANY

Mr. Palmer has thirty-one years of power plant experience of which twenty-seven years were nuclear experience in every management position in the Edison Nuclear Division. This experience included Pre-op Test Director, ASME Turbine Test Director, SRO Licensed Shift Engineer Unit Startup Testing Dresden 1, Quad Cities 1 & 2, organized and managed the manning, training and startup of Quad Cities Units 1 & 2. Organized and managed the development of the Nuclear Division of the Edison Company to support six nuclear power plant with thirteen units. Participated as a member of ANSI/ANS 3 from 1973 to 1982 developing standards. Mr. Palmer was Ad Hoc Chairman on ANSI/ANS 3.1 "Selection, Training and Qualification of Nuclear Power Plant Personnel". Other standards developed during ANSI/ANS 3 membership included ANS 3.2, 3.3, and 3.5. Participated as ANSI/ANS 3 Liaison to IEEE Committee on "Control Room Design". He was a member of the AIF committee that developed the Emergency Preparedness Plan for Industry following the TMI Event. He participated in the development of INPO on the first Industry Review Group to the Emergency Planning and Radiation Protection Division and was Chairman of the IRG during 1982. Presently, he is a member of the EPRI NSAC Task Force, the Executive Committee for ANS Program Development, the Corporate INPO contact, responsible for development of corporate performance monitoring and long range strategy planning in the nuclear division.

J. NORMAN POPE
SUPERINTENDENT OF OPERATIONS
OCONEE NUCLEAR STATION
DUKE POWER COMPANY

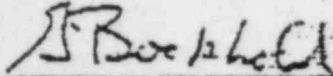
Mr. Pope has twenty-two years power plant experience, ten of these years has been commercial nuclear power plant experience. He obtained an SRO license at Oconee, a 3 Unit 900 Mwe B&W power plant. He has held the positions of Shift Supervisor, Operating Engineer, and Superintendent of Operations at this plant. In these line management positions he has been responsible for portions of the initial testing programs, initial fuel loadings and initial startup testing on all 3 units, and the continued safe and efficient operation of Oconee.

E. L. THOMAS
MANAGER NUCLEAR RELIABILITY ASSURANCE
DUKE POWER COMPANY

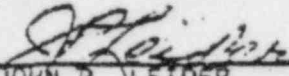
Mr. Thomas has thirty-seven years power plant experience including thirteen years nuclear involvement. Specific nuclear experience includes eight years in defining, developing and operating Duke Power Company's Nuclear Power Technical Training Program. Served as Director of the Training and Education Division of EPD for 2.5 years. Currently responsible for developing and implementing a program to improve the reliability/availability of Duke's nuclear generating units.

V. TEAM ENDORSEMENT OF REPORT

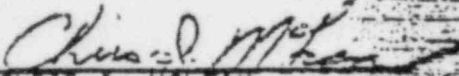
This report reflects my observations and opinions.



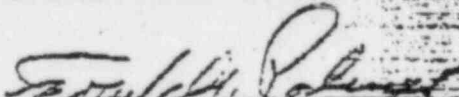
GEORGE BOCKHOLD
GEORGIA POWER COMPANY



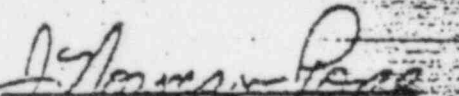
JOHN P. LEIDER
COMMONWEALTH EDISON COMPANY



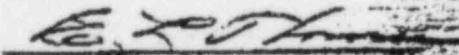
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J. NORMAN POPE
DUKE POWER COMPANY



E. L. THOMAS
DUKE POWER COMPANY