CONTINGENCY PLANNING FOR ELECTRIC UTILITIES
THE SUMMARY OF A CONFERENCE AND
A DATA COLLECTION EFFORT

prepared by

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for

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The NRRI is making this report available to those concerned with state utility regulatory issues since the subject matter presented is believed to be of timely interest to regulatory agencies and to others concerned with utilities regulation.

The NRRI appreciates the cooperation of the Public Utilities Commission of Ohio in organizing much of this data and to the many other state regulatory agencies who provided the information used in this report.

PREFACE

The objective of this study was to identify and classify existing state programs for responding to energy emergencies caused by abnormal operating conditions and to test the contingency plan for the state of Ohio:

(A) A national data collection effort was conducted through personal interviews with representatives of state regulatory or energy agencies in most of the contiguous states. This effort was conducted from October 1978 to January 1979. These responses were collected and compared to other reports compiled by the National Governor's Association (NGA), the Congressional Research Service (CRS), and the Ohio Department of Energy (ODOE).

(B) A conference on contingency planning was held at The Ohio State University on March 22, 1979 to demonstrate an alternative method for analyzing plans.

Research results are presented in parts A and B, respectively, of this report.

PART A

CONTINGENCY PLANNING: A SUMMARY OF A DATA COLLECTION EFFORT

prepared by

Lynette Krysty[1]

[1] The author, Ms. Lynette Krysty, a graduate research associate in the Department of Industrial and Systems Engineering at The Ohio State University, extends her appreciation to George L. Smith, Jr., Professor in the Department of Industrial and Systems Engineering, and Richard J. Darwin of NRRI, for their support and assistance in preparing this document.

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SUMMARY AND ANALYSIS OF STATE CONTINGENCY PLANS

INTRODUCTION

The objective of this letter report is to present the results of a national information collection effort regarding the extent of utility energy emergency contingency planning that has been achieved by the states. Information on this subject was taken from four different sources. Three of the sources are from organizations that have conducted their own research on contingency planning. The fourth source of information comes from on-site visits to state regulatory commissions by NRRI staff.

The information from the four sources for each of the fifty states and the District of Columbia can be found in a separate appendix to this letter report. A brief summary of the information collected by NRRI staff during their visits to state regulatory commissions is presented in the main body of this report.

This letter report is submitted to the sponsor to satisfy the requirements of Item C of Task 10 - Contingency Planning. A second letter report summarizing a Conference on Contingency Planning held at the Fawcett Center for Tomorrow on March 22, 1979 is another activity associated with this investigation of contingency planning.

Method of Information Collection

The research performed under this activity occurred in two phases: a literature search and a national information collection effort. The literature search was conducted on The Ohio State University Mechanized Information Center, a computer-based information retrieval system listing some 1,900,000 documents. Unfortunately this system was able to identify only a limited number of sources, the titles of which appear in Appendix A. Another source of information was obtained from material collected by NRRI staff during visits to state utility regulatory commissions in late 1978 and early 1979.

Two reference sources were found to be of particular value for the study. They are, "Energy Emergency Preparedness" (June 1978) prepared by Nancy Ginn of the National Governor's Association (NGA) and "A List of State Energy Emergency Plans" compiled by the Ohio Department of Energy (ODOE).

A fourth source for the national summary came from a 1977 Congressional Research Service (CRS) report, the main purpose of which was to determine the status of fuel adjustment clauses in the United States.

All four sources have been summarized and incorporated into the national data collection summary of state contingency plans which appears in Appendix B. The complete set of information from all four sources is on file in the NRRI technical library.

At this point a brief discussion of the method used by NRRI staff to collect information is necessary. For the past two years, NRRI staff have attempted to schedule visits to all state regulatory commissions. In the most recent state visits conducted from October 1978 through January 1979 several questions relating to contingency planning were asked directly of commission staff judged to be most able to provide a valid answer to the questions.

Summary of Findings

The following section presents a summary of the responses by commission staff to questions regarding state contingency planning. Where necessary, additional comment has been supplied to provide a better understanding of the summary.

1. Does either the Public Utility Commission (PUC) or the State Energy Office (SEO) have the authority to deal with electric and natural gas emergencies such as fuel shortages, capacity shortages and general energy emergencies caused by either natural or man-made disasters?

Yes	23 states
No	19 states
Total	42 states

Responses indicated that in 23 states the public utility commission and/or the state energy office have the authority to deal with fuel emergencies, shortages or disasters.

All of those state commission staff indicating that neither the PUC or the SEO were involved, were asked:

2. If the PUC or SEO does not have the authority to deal with an energy emergency, what state agency or office does?

Responses received indicated the following:

Office of the governor	12
Office of the governor and another state agency	3
Office of the governor and a state board	3
Mayor's energy board	1

The responses indicate that the governor as chief executive of the state takes the lead in the initiation of a response to an emergency. In most cases the governor declares an emergency and then sets into motion another state agency or some sort of emergency board. It appears that the PUC plays an important role in the process as does the SEO. The District of Columbia indicated that response to an energy emergency would come from the Mayor's Energy Board.

3. What role would be played by the PUC or SEO under such conditions?

   The responses to this question were sparse. Those few that did answer felt that the commission would play either an advisory role or be given an assignment by the governor.

   State commission staff were also asked if:

4. Either the PUC or the SEO place certain requirements on electric and gas utilities for contingency planning in the event of an energy emergency? In particular, is planning required for fuel shortages, capacity shortages or natural or man-made disasters?

	States with Planning Required
Energy Emergency	18
Fuel Shortage	13
Capacity Shortage	7
Natural Disaster	7
Voluntary	3
In Progress	2

The responses obtained indicate that 18 state regulatory commissions require electric and gas utilities to plan for emergencies. Thirteen states reported planning for fuel shortages as their most specific area of concern. Three states indicated that utilities had voluntarily begun energy emergency planning and that two states were in the process of establishing planning requirements.

5. Does the commission require utility companies to submit contingency plans for review?

Yes	15
Voluntary	3
No	13

Fifteen commissions indicated that utility companies were required to submit their contingency plans for review. Eight

of these states indicated that formal administrative procedures had been established to review utility contingency plans. Seven states reported that the administrative process included an appeals process.

State commission staff were asked if:

6. The commission has formulated a position on the following issues:

   Sharing fuel and fuel reserves with other states in case of an emergency?

Yes	3
No	16
Voluntary	5

   Sharing fuel and fuel reserves with other utilities (intra-state sharing) in the state?

Yes	3
No	16
Voluntary	4

   Most of the state commissions reported that they had not developed an official position regarding the sharing of fuel reserves.

7. At present how would the cost of an energy emergency be recovered? (e.g. from rate payers, shared by utilities' stockholders, state disaster funds, or federal funds?)

Rate Increase	17
Stockholders	2
Disaster Funds	1
Ad Hoc	2

   Of the 22 states responding, 17 would recover the cost of an energy emergency from the ratepayer through a rate increase. Only two states indicated that stockholders would bear this extra cost.

8. If the utility has developed contingency plans for an energy emergency independent of PUC guidance, what assurance is there that the plan is effective?

   Fourteen persons replied that there is no assurance that the plan is effective. Two responses indicated that effectiveness of the plan is assured by a cooperative arrangement between the utility and the state.

Policy Implications

The results of the analysis of contingency planning information collected as a result of the visits to state utility regulatory commissions and the data contained in Appendix B are presented below. Examination of Appendix B indicates that the responses collected by NRRI staff may not be compatible with other information sources. However, this may simply be due to imprecise definition of the categories rather than any contradictory data. Despite these problems it was possible to draw some conclusions from the analysis of these data that may have policy implications.

Some policy implications found are:

1. Examination of the contingency plans presented by the plan itself or the legislation that requests such planning indicates that states approach the subject in very diverse ways. The most obvious distinction is between those states that establish criteria for a plan as found in the enabling legislation, and those to states with actual plans in force. States with plans in force either specify emergency threshholds and related response measures or simply assign target curtailment levels and let utilities manage the emergency. It may be of value to evaluate the relative merit of these alternate approaches to contingency planning.

2. Where specific plans have been adopted there is little uniformity in the structure of the plans, which makes them difficult to compare and analyze. A sample plan format could be beneficial for establishing whether a state has taken into account certain basic criteria in the development of these contingency plans. A sample format could assist states on developing comprehensive contingency plans.

3. In general, state regulatory commissions' involvement is limited to approval of existing contingency plans. There was a strong feeling among respondents that planning of this type was part of the utilities' normal operating procedures. In addition, it was evident that commission staffs have not been able to adequately address energy emergency issues such as sharing of reserves, cost recovery for breakdown and basic energy disaster planning issues. A workshop on contingency planning for energy emergencies may be one method for raising the awareness of commission staff of the need for such planning.

Given the present state of knowledge regarding the contingency planning activities of public utility commissions, we feel that this report should be especially useful to all those interested in energy management. Needless to say, it is an area in which a great deal more planning and research remains.

APPENDIX A

Contingency Planning Bibliography

1. California. Office of Emergency Services. Nuclear Blackmail or Nuclear Threat Emergency Response Plan for the State of California (Sacramento): The Office, 1978. II, 20.

2. California. Energy Shortage Contingency Plan: A Report to the California Energy Resources Conservation and Development Commission. (Sacramento: S.N.), 1975.

3. Indiana. Public Service Commission. Rules, Regulations, and Standards of Service for Gas Public Utilities in Indiana: Promulgated in Case Number 34613, (Indianapolis: State of Indiana, Public Service Commission. 1976).

4. Michigan. Public Service Commission. Implementation of the Emergency Energy Act: A Report to the Michigan Legislature. Lansing: The Commission, 1974.

5. Minnesota. Energy Agency. Energy Emergency Conservation and Allocation Plan. St Paul: The Agency., 1977.

6. O'Donnell, John L. Adapting Regulation to Shortages, Curtailment, and Inflation. East Lansing: Division of Research, Graduate School of Business Administration. Michigan St. XIII.

7. United States. Congress. Joint Committee Emergency Preparedness in the Electric Power Industry and the Implications of the New York Blackout for Emergency Planning. Washington: U.S. Govt. Print. Off., 1977.

APPENDIX B

Summary of Contingency Plans
In The United States

1978-1979

STATE-BY-STATE RESULTS

1. C.R.S. Report
2. N.G.A. Report
3. N.R.R.I.
4. O.D.O.E. Status List

NOTE: Re items displayed under the heading NRRI in Appendix B correspond to the following items discussed in the letter report:

Appendix B	Letter Report
Item 1	Item 1
Item 2	Item 4
Item 3	Item 5
Item 4.1	Item 6
Item 4.2	Item 6
Item 4.3	Item 7
Item 5.1	Item 2
Item 5.2	Item 3

ALABAMA

C.R.S. Report: None at end of 1977

N.R.R.I.

1. Authority rests with the Commission
2. No requirements in any categories
3. Do not feel plans are necessary
4. No response
    1. No response
    2. No response
    3. No response
5. No response
    1. No response
    2. No response

N.G.A. Report: Legislation possibly applied under the Disaster Act

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

ALASKA

C.R.S. Report: PUC does not have authority. Would be handled by the Division of Energy and Power Development of the Department of Commerce, the Governor's office and/or the Alaska Disaster Officer (Department of Military Affairs).

N.R.R.I. Not visited

N.G.A. Report: Legislation possibly applied under the Disaster Act

O.D.O.E.: No information

NO DOCUMENTATION RECEIVED

ARIZONA

C.R.S. Report: None

N.R.R.I.

NOT VISITED

N.G.A. Report: Previously applied or opinion rendered under Disaster Act

O.D.O.E.: No plan.

NO DOCUMENTATION RECEIVED

ARKANSAS

C.R.S. Report: Electric Companies were required to file curtailment plans for future use by order of the PSC (dated June 25, 1971, Docket #U-2332). Gas utilities have historically followed the same procedure. Only gas utilities have implemented curtailments, and then for only short periods with industrial customers affected.

N.R.R.I.

1. No authority
2. No response
3. No response
4. No response
    1. No response
    2. No response
    3. No response
5. Governor's Office has authority. Relies on PSC and SEO for assistance.
    1. No documentation
    2. No assurance but do not foresee a problem.

N.G.A. Report

1. Possibly applied under Disaster Act
2. Provisions in Energy Act
3. Calls for establishment of energy emergency plan(s)
4. Calls for curtailment priorities

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

CALIFORNIA

C.R.S. Report

Gas companies have an End-Use Priority System. Customers are classified into five categories depending upon usage. Also gas is apportioned among customers as directed or ordered by the PUC.

Electric companies have an End-User Priority System. Customers are classified into categories depending upon customer characteristics.

N.R.R.I.

1. PUC has authority
2. PUC has the following authority to deal with shortages of capacity or capability in the generation, production, or transmission of electricity or gas and is unable to obtain electricity or gas from any other source so that the corporation is unable to meet all demands by its customers.

    1. Order that service be temporarily reduced by an amount that reflects the shortage
    2. Require (to the extent permitted by federal law) mutual assistance in dealing with shortages resulting from inadequate fuel supplies, and shall determine the terms under which such assistance is provided (including compensation). (1)

3. Contingency plans are required for priority categories

only

4.1 Share via Northwest Power Pool (No policy)

4.2 D/K

4.3 Cost recovered by rate increases

5. N/A

5.1 N/A

5.2 No formal program to assure effectiveness

N.G.A. Report

1. Amended to Disaster Act
2. Provisions in Energy Act
3. Assigns agency responsibilities/Delegation of powers
4. Calls for establishment of energy emergency plan(s)
5. Calls for collection of load curtailment plans
6. Extraordinary authority depends on degree of energy emergency
7. Restrict electric energy use

O.D.O.E.: Summary of Recommendations, State of California, ENERGY SHORTAGE CONTINGENCY PLAN, prepared by California Energy Resources Conservation & Development Commission, Jan. 7, 1976.

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1. Information obtained from Chapter 4.5 "Electrical and Gas Corporations," (added 1976, ch.757), section 2774, page 126.

REVIEW OF DOCUMENTATION (2)

The commission is given the authority to establish priorities among the types or categories of customers of every electrical and gas corporation, and among the uses by such customers. The priorities shall be determined by which customers and uses provide the most important public benefits and serve the greatest public needs (Priorities will be assigned in descending order). The commission will include consideration of the following

1. Customers and uses (in descending order of priority) which provide the most important public benefits and serve the greatest public need.
2. Determination of the customers and uses which are not included in 1.
3. Determination of the economic, social, and other effects of a temporary discontinuance for the uses determined in 1. or 2.
4. Any curtailment or allocation rules, orders, or regulations issued by any agency of the federal government.

The commision may establish as many priorities of use for a customer as that customer has uses. (2)

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2. Ibid. (additional sections 2771-2773,2775)

COLORADO

C.R.S. Report: No response

N.R.R.I.

1. No authority
2. No requirements
3. No plans required
4. No to all three parts
5. No response
    1. No response
    2. No system security procedures

N.G.A. Report: Legislation possibly applied under the Disaster Act

O.D.O.E.: No information

NO DOCUMENTATION RECEIVED

CONNECTICUT

C.R.S. Report: Established a State Natural Gas Curtailment Plan in the event resioential customers of a company are in jeopardy.

N.R.R.I.

1. SEO has authority
2. Contingency plans required in the event of a fuel shortage
3. No response
4. Member of New England Power Pool
5. N/A
    1. N/A
    2. N/A

N.G.A. Report

1. Provisions in Energy Act
2. Separate energy emergency legislation
3. Assigns agency responsibilities/Delegation of powers
4. Calls for federal/state/local coordination
5. Calls for establishment of energy emergency plan(s)
6. Impending shortages are considered "emergencies"

7. Broad allocation/rationing/distribution/conservation provision

8. Regulate hours/days of public, commercial and/or industrial establishments

9. Provides funds for fuel and utility costs of eligible needy families

10. System of exemptions/appeals and review

Q.D.Q.E.: "Energy Emergency Plan for Connecticut," submitted to the General Assembly , January 15, 1975, prepared by Connecticut Energy Agency

REVIEW OF DOCUMENTATION (1)

Contingency Measures

Contingency planning entails the specification of actions to be taken to bring into balance the energy supply-demand equation. Three types of action can be taken to adjust the imbalance: allocation of available supplies, curtailment of demand, and control of fuel inventories. Currently, allocation of supplies is in the hands of the federal government, and control of fuel inventories is in the hands of the fuel companies. State government can be most effective in taking action to curtail demand.

The plan consists of a series of measures of varying severity aimed at correcting real or potential supply-demand imbalances.

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1. "Energy Emergency Plan for Connecticut," submitted to the General Assembly

Individual measures have been formulated for the following energy forms:

1. Gasoline
2. Distillate fuel oil
3. Residual fuel oil
4. Natural gas
5. Coal
6. Electricity

for the following use sectors:

1. Residential
2. Commercial
3. Industrial
4. Transportation

In addition each measure falls under one of the following general implementation categories:

1. Space heating/cooling curtailment
2. Operations curtailment
3. Use restriction
4. Efficiency improvement

For each measure, potential energy savings (and losses) have been calculated, and our estimation of non-energy impacts is given. An index and summary of these contingency measures appear in table form, and a complete description of each measure and its

expected impact is given in the Contingency Measure Profiles section of the report (1).

Thus the implementors of the plan, given a particular level of energy shortfall, can select a set of actions (measures) to bring about a desired energy savings while minimizing adverse social and economic effects. Political necessity might require that many measures described separately be applied in parallel. However, the impact of each measure has been isolated to enable the implementors to consider all technically feasible packages.

It should be noted that a few measures have been included mainly for their social value in distributing hardship or motivating conservation, rather than their energy savings value. Also, a measure affecting one fuel will have an impact (positive or negative) on all other fuels. The calculation of energy savings associated with each measure takes into account inter-fuel effects to the extent possible.

The list of measures does not take into account long-term actions (e.g., encouraging solar energy, changing building codes for better insulation, imposing a gasoline tax, etc.)because these types of actions are not ones which can be instituted in an emergency. Instead they are more suitable to long-term conservation planning and are being treated separately by CEA.

DELAWARE

C.R.S. Report: None

N.R.R.I.

1. General powers dependent upon severity
2. No requirements
3. Contingency plans not required
4. No to all three parts
5. Governor
    1. No response
    2. No response

N.G.A. Report: Legislation possibly applied under the Disaster Act

O.D.O.E.: No information

NO DOCUMENTATION RECEIVED

DISTRICT OF COLUMBIA

C.R.S. Report: Have the authority to curtail and discontinue service to meet emergency situations. On February 4, 1977 the Commission authorized Washington Gas Light Company to discontinue or curtail service to certain categories of customers to overcome a gas supply shortage.

N.R.R.I.

1. Mayor's Energy Board deals with energy situation
2. Pursuant to FPC directives
3. Yes, yearly
4. N/A
5. Mayor's Energy Board
    1. No response
    2. None

N.G.A. Report: No entry

O.D.O.E.: No entry

NO DOCUMENTATION RECEIVED

FLORIDA

C.R.S. Report: Broad authority to approve and review individual utility disaster and emergency allocation plans. None were exercised in 1977.

N.R.R.I.

1. PUC has authority
2. Currently under draft
3. No
4. Yes
    1. Voluntary
    2. Voluntary
    3. Rate payers
5. N/A
    1. N/A
    2. None

N.G.A. Report

1. Amended to Disaster Act
2. Provisions in Energy Act
3. Assigns agency responsibilities/Delegation of powers
4. Recognizes PUC authority

5. Calls for establishment of energy emergency plans
6. Calls for monitoring system
7. Includes confidentiality of information
8. Authority to implement federal programs
9. Calls for "fair and equitable" distribution
10. Civil penalties

Q.D.Q.E.: FLORIDA'S ENERGY EMERGENCY CONTINGENCY PLAN, Department of Administration, State Energy Office, May 1978.

REVIEW OF DOCUMENTATION (1,2,3)

All the documentation received dealt with shortages which were caused by the inability to transmit the required power. No documentation was received which dealt with any kind of fuel or capacity shortage.

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1. "Technical Provisions of the Grid Bill."
2. Florida Public Service Commission Engineering Department Final Report on Southeast Florida's Susceptibility to Blackouts, February 1, 1978.
3. Florida Power and Light Company, "Report on System Disturbance," May 16, 1977.

GEORGIA

C.R.S. Report: Commission has authority to approve purchase of emergency gas. A special energy office set up out of the Governor's Office handles such situations

N.R.R.I.

1. No
2. No response
3. No response
4. No response
5. Civil Defense
    1. None
    2. No response

N.G.A. Report

1. Provisions in Energy Act
2. Separate energy emergency legislation
3. Calls for federal/state/local coordination
4. Recognizes PUC authority
5. Impending shortages are considered "emergencies"
6. Broad allocation/rationing/distribution/conservation provision
7. Restrict resource sale days and time

8. Civil penalties

9. Conflict of law

10. Severability clause

11. Liability clause

12. Limitations on Governor's authority

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

HAWAII

C.R.S. Report: Statutory provisions allow the Commission to handle emergency situations; was not exercised

N.R.R.I. Not visited

N.G.A. Report

1. Separate energy emergency legislation
2. Recognizes PUC authority
3. Calls for collection of load curtailment plans
4. Legislation applies only to 1 or 2 energy resources
5. Restrict electric energy use
6. Restrict resource sale days and time
7. Right to incur expenses
8. Right to draw on special energy emergency funds
9. Enforcement procedures
10. Civil penalties
11. System of exemptions/appeals and review
12. Conflict of law
13. Severability clause
14. Liability clause
15. Limitations on Governor's authority

O.D.O.E.: No plan

NO DOCUMENTATION RECEIVED

IDAHO

C.R.S. Report

1. Power to declare state of emergency due to inadequate electric power or gas supply (Idaho Code, Sec. 61-533)

2. Power to order curtailment of consumption by consumers (Idaho Code, Sec. 61-535)

N.R.R.I.

1. PUC has authority

2. Utilities must file curtailment plans

3. Yes, once. Submitted by utilities, approved by commission. Technically, appeal process for all parties.

4. No

    1. No, but belong to Northwest Power Pool (electric)

    2. No

    3. No general answer, but may get emergency rate relief

5. D/K

    1. D/K

    2. Not tested

N.G.A. Report

1. Separate energy emergency legislation

2. Recognizes PUC authority

3. Calls for collection of load curtailment plans
4. Legislation applies to only 1 or 2 energy sources
5. Restrict electric energy use
6. Restrict consumer consumption
7. Severability clause
8. Liability clause

O.D.O.E.: No information

REVIEW OF DOCUMENTATION (1)

PUC requires all suppliers of electric power and energy, or natural or manufactured gas, except agencies of the federal government , to file a plan for the curtailment of electric or gas consumption during an emergency.

The commission may adopt or reject such plans, or adopt others for the curtailment. The following factors shall be considered:

1. Consistency of the plan with the public health, safety and welfare
2. Technical feasibility of implementation
3. Effectiveness with which the plan minimizes the impact of any curtailment

The commission has the authority to declare an emergency, with or without notice, upon finding that an inadequacy or insufficiency

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1. Idaho Code, Sec. 61-531 through 61-537.

of electric power and energy, or natural or manufactured gas threatens the health, safety and welfare of the citizens of the state.

Upon the declaration of an emergency, the commission has the authority to require all suppliers of electric power and energy, or natural or manufactured gas, except agencies of the federal government, to curtail service in accordance with the curtailment plans on file with and approved by the commission.

Upon the declaration of an emergency, the commission has the authority to order the curtailment of electric power and gas consumption by consumers as the commission finds reasonable and necessary.

No supplier of electric power or gas shall be liable for actions taken pursuant to an order of the commission, or by reason of curtailment of such electric or gas service pursuant to such order or its curtailment plan on file with and approved by the commission.

ILLINOIS

C.R.S. Report: The Illinois Commerce Commission has wide, discretionary authority to deal with most any emergency situation which affects public utility service. In 1977, the Commission approved a natural gas curtailment plan by one medium sized utility. The Commission also issued a regulation dealing with non-essential uses of natural gas.

N.R.R.I.

1. PUC has authority in dealing with electric emergencies
2. No, but in progress
3. No
4. No
    1. No
    2. No
    3. Requires special order to pass to rate payers
5. N/A
    1. N/A
    2. N/A

N.G.A. Report: Amended to Disaster Act

O.D.O.E.: Illinois ENERGY CONTINGENCY PLAN, November 1977

REVIEW OF DOCUMENTATION (1,2,3)

The commission is currently engaged in a generic hearing to standardize the following requirements of plans (for electric companies). This hearing just started and is not expected to be completed for some time.

The gas company has always had a priority contingency plan on who shuts down first.

Having consumers pay for emergency procedures purchase power flow through is not part of the Illinois fuel adjustment clauses which exist. A special order of the commission is required to pass those costs through.

Criterion considered in establishing gas curtailment policy with respect to non-interruptible customers during periods of insufficient gas supply.

1. Rate classification
2. Customer size
3. Customer use
4. Public health and safety

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1. Notes on page 14.
2. Illinois Commerce Commission On Its Own Motion, "Investigative proceeding to determine the criteria for the curtailment of service to existing gas consumers during periods of insufficient supply," Order.
3. Ibid. (Order on Rehearing)

5. Seasonal variations in customer use
6. Pipeline curtailments
7. Short term shortage vs. long term shortage
8. Controlled attachment programs
9. Effects on economy

In the event that gas supplies become critical in meeting the requirements of existing customers, Section 49(a) of the Illinois Public Utilities Act grants the Commission authority, after hearing, to authorize or direct curtailment or discontinuance of gas service to individual customers or classes of customers, or for specific purposes or uses, and otherwise to regulate the furnishing of service, whenever and to the extent such action is required by the convenience and necessity of the public during a time of shortage of supplies.

There was agreement among the Respondents (privately owned public gas utilities) that the Commission should not establish a rigid, uniform, statewide gas curtailment plan and require each utility to follow that plan. Differences between utilities that must be considered include:

1. Size
2. Service to different mixes of residential, commercial and industrial customers
3. Service different types of service territories
4. Different gas supply problems with respect to interstate pipeline suppliers
5. Different supplemental gas supplies

6. Different gas storage capabilities

GUIDELINES FOR THE FILING OF GAS CURTAILMENT RULES AND REGULATIONS TO BE USED BY GAS UTILITIES DURING PERIODS OF INSUFFICIENT GAS SUPPLY

Curtailment of gas utility service will be implemented in the following order of steps, with curtailment to be directed and achieved in each step before proceeding to the next step. Curtailments will be terminated in reverse order as gas supplies permit. A customer may reduce his requirements to qualify for service under the next higher priority step in order to maintain partial service. Gas used as raw material (chemical feedstock) in manufacturing a product is exempt from these curtailment priorities.

1. Interruptible customers
2. Pro rata:
    1. Large commercial and industrial customers curtailed a percentage of their base volume period requirements up to a maximum of 17%
    2. Customers not included in 1. above; initiate a public plea for a reduction of gas used for nonessential purposes, reduction in space heating levels and the installation of gas saving materials and equipment; undertake a customer participation program
3. Boiler fuel gas customers with boilers with maximum estimated monthly gas requirements exceeding _____ therms per boiler unit or annual gas requirements exceeding _____ therms per boiler unit

4. Customers with gas requirements exceeding _____ therms per month or _____ therms per year

5. Customers with gas requirements exceeding _____ therms per month or _____ therms per year

6. Customers with gas requirements exceeding _____ therms per month or _____ therms per year

NOTE: Steps 4,5, and 6 should be approximately equal divisions of the annual volumes of gas remaining after curtailing gas through step 3, but exclusive of gas for sales to customers requiring less than 500 therms per month and sales for raw material (chemical feedstock).

INDIANA

C.R.S. Report: The Commission by statute has the "power, when deemed by it necessary, to prevent injury to the business or interests of the people, or any public utility of this state, in case of any emergency, to be judged by the Commission, to temporarily alter, amend, or with the consent of the public utility concerned, suspend any existing rates, service, practices, schedules and order relating to or affecting any public utility or part of any public utility in this state." Emergency powers were not exercised in 1977 (to the best recollection of the person answering the survey), but powers were exercised early in 1978 with regard to the curtailments of the use of electric energy required by the UMW strike.

N.R.R.I.

1. Yes
2. Yes
3. Yes, continuous update
4. Yes
    1. Protect Indiana first
    2. Through ECAR
    3. Rate payers
5. N/A

N.G.A. Report: Previously applied or opinion rendered under Disaster Act

O.D.O.E.: "Indiana Coal Strike Contingency Plan," prepared by the Governor's Office and Indiana Department of Commerce Energy Group, September 12, 1977.

REVIEW OF DOCUMENTATION (1,2,3,4,5)

SERVICE PRIORITY CLASSES AND THEIR DESCRIPTIONS

1. Human needs
2. Residential, living quarters, commercial and industrial customers with a service obligation of 50 KW or less
3. Commercial and industrial customers with a service obligation of more than 50 KW but less than 500 KW
4. Commercial and industrial customers with a service obligation of 500 KW but less than 1000 KW
5. Commercial and industrial customers with a service obligation of 1000 KW but less than 3000 KW
6. Commercial and industrial customers with a service obligation of 3000 KW but less than 10,000 KW
7. General Service customers with a service obligation of 10,000 KW or more and all customers served on "Industrial Power Service" rates
8. Schools, colleges, universities, and other educational institutions, and sports, entertainment and recreational activities

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1. Public Law No. 55, Approved March 8, 1978.
2. Section 8-1-2-113 "Alterations, amendments or suspension of rates or services.
3. Public Service Commission of Indiana, Cause No. 34866.
4. Public Service Commission of Indiana, Cause No. 35264, Approved February 6, 1978 through May 24, 1978.
5. EMERGENCY CURTAILMENT AND LOAD REDUCTION PLAN FOR INDIANA ELECTRIC UTILITIES, February 13, 1978: amended February 27, 1978.

9. "Dispensable Uses" and "Surplus Capacity" power

Curtailment to customers in Service Priority Classes 3,4,5,6,7,8 and 9 shall be on the basis of a pro rata calculation of the Company's daily contract obligation to each customer as of February 3, 1977.

Curtailment to customers in Service Priority Classes 1 and 2 shall be based upon an equal percentage of the average daily consumption of the respective classes in the same calendar month of the previous year, except for those customers who have a contract for a stated daily contract quantity, in which event the curtailment shall be on the basis of a pro rata calculation of the Company's daily contract obligation to each customer.

SUMMARY OF EMERGENCY PLAN (5)

1. Company Load Reductions at 50 days operation

    1. Utility use of electric energy will be reduced in any way that will not jeopardize essential operations

    2. Fuel supply levels at the Utility's generating stations will become a determinant in economic dispatch decisions in the effort to maintain a reasonable supply of fuel at all generating stations

    3. The Utility will partially or fully terminate the availability of electric energy under the surplus capacity provisions of rates for industrial and commercial power service. This does not apply to cooperative or municipal utilities with generation

2. Customer Voluntary Load Reduction at 50 days operation

1. Public appeals by the Utility through appropriate news media asking customers to reduce their use of electric energy by approximately 25% due to impending fuel shortage

2. Direct appeals by the Utility to major industrial and commercial customers and to wholesale customers requesting them to shut off nonessential load, and curtail usage in an effort to obtain a 25% reduction

3. Mandatory Load Reduction During Fuel Shortages at 40 days operation The Utility has the right to restrict, limit or curtail service within any of its systems so affected

4. Emergency Curtailment Without Regard to Priority
The Utility reserves the right to order electric service curtailment without regard to the priority of service when in its judgment such curtailment is required to forestall imminent and irreparable injury to life, property or the electric system. Curtailment may include interruption of selected circuits. A curtailment pursuant to this rule shall not exceed 72 consecutive hours without approval of the Public Service Commission

5. Mandatory Curtailment Procedure
Curtailment shall begin with Service Priority Class 9 and 8 and continue as necessary through Service Priority Classes 7,6,5,4,3,2, and 1 as follows:

   1. Public notice, by press release, shall be given to Service Priority Class 9 customers to fully (100%) curtail such service and to Service Priority Class 8 to curtail service to a service level of not more than 60% of service obligation or base monthly consumption, whichever is applicable as determined by the utility

   2. Curtailment will commence in Service Priority Class 7 and continue until a service level is reached of not more than 90% but not less than 80% of service obligation or base monthly consumption, whichever is applicable

   3. Curtailment will commence and proceed sequentially as necessary through Service Priority Classes 6,5,4,3 and 2, provided that the curtailment to each succeeding lower numbered Service Priority Class shall be at least 10% but not more than 20% less than the next higher numbered Service Priority Class beginning with Service Priority Class 7

   4. When Service Priority Class 7 is curtailed to a level of 35% of service obligation or base monthly consumption, any further necessary curtailments shall be made from next succeeding Service Priority Classes, beginning with Service Priority Class 6, until each class through

Service Priority Class 2 reaches 35% level, provided each reduction, until the 35% level, shall maintain the interval of at least 10% but not more than 20% between succeeding Service Priority Classes

5. After Service Priority Classes 7,6,5,4,3 and 2 are curtailed to a level of not more than 35% of service obligation or base monthly consumption, Service Priority Classes 7 through 2, both inclusive, will be further curtailed by equal percentages until full (100%) curtailment occurs

6. After Service Priority Classes 4,3, and 2 are in full (100%) curtailment, curtailment shall commence in Service Priority Class 1 as necessary

6. Curtailment by Short Term Service Interruption
In the event mandatory curtailment is imposed, as above provided, the Utility in addition may employ, for not more than two hours' duration at any one time, selective short term service interruptions by operation on a rotational basis of distribution switching equipment to effect the necessary curtailment in one or more Service Priority Classes

7. Restoration of Service
Service shall be restored in the reverse order of the original curtailment

8. Penalty for Noncompliance
Customers failing to comply with the specified curtailment for more than 7 days will be subject to disconnection for the duration of the emergency. Energy use by Industrial and Large Commercial customers in excess of that permitted under curtailment shall be subject to a 10 cent per KWH penalty in addition to normal billing charges, for all electric energy taken in excess of mandatory curtailment limitations. In addition, demand use by such customers in excess of that permitted under curtailment shall be subject to a $15 per KW per calendar day penalty. Penalty charges collected hereunder shall be segregated in a separate account, and shall be applied to reduce the fuel cost adjustment charges of Industrial and Large Commercial customers who, during the existence of a fuel emergency, have not used electric energy in excess of mandatory curtailment limitations

9. Applicability
The terms and provisions of this Rule shall control notwithstanding any terms and provisions of rate schedules, General Rules and Regulations of the Utility of any contract or agreement between the Utility and any Customer to the contrary

IOWA

C.R.S. Report: Chairman of Commission serves on Iowa Energy Policy Commission and is an energy advisor to the Governor

N.R.R.I.

1. Energy Policy Committee (EPC) has statutory authority to set up plans but "should" work through PUC, not directly with utilities
2. Nothing official, only "informal request" and major utilities filed
3. Voluntary
4. No
5. No response

N.G.A. Report

1. Provisions in Energy Act
2. Specifies length of emergency powers until legislative approval required
3. Assigns agency responsibilities/Delegation of powers
4. Calls for federal/state/local coordination
5. Recognizes PUC authority
6. Includes confidentiality of information
7. Includes subpoena/deposition authority
8. Impending shortages are considered "emergencies"
9. Authority to implement federal programs
10. Regulate hours/days of public, commercial and/or industrial establishments

11. Restrict public and private transportation use

O.D.O.E.: Plan not received

NO DOCUMENTATION RECEIVED

KANSAS

C.R.S. Report: No response

N.R.R.I.

1. No legislation
2. No
3. No response
4. No
5. Governor
    1. Governor would assign specific responsibilities to both PUC and SEO
    2. None

N.G.A. Report

1. Provisions in Energy Act
2. Calls for federal/state/local coordination
3. Calls for curtailment priorities
4. Calls for establishment of energy emergency plans
5. Calls for monitoring system
6. Authority to implement federal programs

O.D.O.E.: "Report of the Kansas Energy Emergency Management Task Force," December 1, 1977

NO DOCUMENTATION RECEIVED

KENTUCKY

C.R.S. Report: No response

N.R.R.I.

1. Yes
2. Yes
3. Yes, as need arises
4. No
5. No response

N.G.A. Report

1. Amended to Disaster Act
2. Calls for federal/state/local coordination
3. Restrict electric energy use
4. Restrict consumer consumption

O.D.O.E.: Plan in preparation

REVIEW OF DOCUMENTATION (1)

Classification of Electric Service for Mandatory Curtailment.

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1. Before the Public Service Commission of Kentucky, Case No. 7031, Order, Appendix A".

1. Essential Services relating to basic health, safety and welfare including:

    1. Hospitals, medical clinics, nursing homes, elderly care facilities, child care facilities (except kindergartens), and individual residential services essential for health (such as is received for life support equipment)

    2. Community health services (drinking water pumping and treatment plants, sewage plants, garbage disposal facilities)

    3. Community protection services (police and fire stations, National Guard and military facilities for emergency shelter, Salvation Army or other public shelter facilities

    4. Energy production conversion, transmission and distribution, refineries, coal mines, electric and gas company equipment, bulk heating oil and bottled gas facilities and distribution facilities

2. Community Services

    1. Communications facilities

    2. Transportation facilities

    3. Fresh food production, processing, storage and distribution

    4. Governmental services

    5. Other facilities and/or equipment necessary for minimum community health or safety as determined by the utility and approved by the PSC

3. Residential Service

4. Commercial Service

5. Industrial Service

6. Nonessential Service Dispensable electric service to or for the above categories including:

    1. Highway, street, security, or public area floodlighting except at the minimum level necessary for the safety and security of persons and property as recommended by the chief executive officer of the governmental subdivision involved

2. Parking lot floodlighting greater than the minimum required for the safety of members of the public

3. Outdoor advertising except for the minimum illumination or sign sufficient for identifying commercial facilities operating after dark

4. Indoor or outdoor commercial or industrial show window, showroom, or display lighting

5. Elevators or escalators in commercial or industrial facilities except as required for safety purposes

6. Electricity use greater than is necessary to maintain adequate general lighting and temperatures for living and working space during business hours at no more that 65 degrees Fahrenheit by use of heating equipment and no less that 78 degrees Fahrenheit by use of cooling equipment. Priority 3 water heater temperatures no greater than 120 degrees Fahrenheit, and commercial and industrial water heater or cooling equipment temperatures no greater than the minimum

7. Electricity use greater than is the minimum required for lighting, heating, or cooling of categories 2, 4 and 5, facilities for maintenance, cleaning, or business related activities during nonbusiness hours

CURTAILMENT PROCEDURES

1. Primary fuel supply at 33 days
Give public notice to inform customers that in three (3) days it will reduce its load by at least 25%

2. Three days thereafter the utility will reduce its system load by 25% in the following fashion:

   1. Terminate all economic dispatch

   2. Curtail Priority 6 by 100%

   3. Curtail Priority 5,4,3, and 2 service 25% of those customers' base period allotments

   4. Curtail Priority 1 service 10% of those customers' base period allotment

   5. In addition to curtailments imposed on the utility, it will reduce its consumption of electricity for general lighting, heating, or cooling to the minimum required for

functional use of the facilities

3. 23 days operation
Give public notice to inform customers of additional reduction of load in three (3) days

4. In three days thereafter the utility will reduce its system load in the following manner:

   1. All previous curtailment measures will continue

   2. Priority 5 and 6 curtailment will be increased to 50% of their base period allotment

5. 13 days operation
Give public notice to inform customers of additional reduction of load in three (3) days

6. In three days thereafter the utility will reduce its system load in the following manner:

   1. All previous curtailment levels will be continued

   2. Priority 5 and 6 curtailment will be increased to 100% of the base period allotments except for plant protection not to exceed 10% of their base period allotment

   3. Priority 2 and 3 curtailment of 25% will be increased to 30% of their base period allotment

   4. Utility may employ for not more than two hour's duration for any one term during a twenty-four (24) hour period, selective territorial short term service interruptions by operation of distribution switching equipment on a equitable rotational basis to effect the mandated curtailment levels

7. The utility will continue service at the curtailment levels until its primary fuel supply will permit operation at its curtailed load level for no longer than three days, whereupon it may initiate emergency generation shut-down procedures

LOUISIANA

C.R.S. Report: No jurisdiction

N.R.R.I.

1. No
2. N/A
3. N/A
4. N/A
5. Governor
    1. No legislative mandate on this issue nor any other official directive providing contingency responsibility. It is generally "understood" that in the case of an emergency, the Governor would have full authority to act with recommendations and assistance from PUC
    2. No hard and fast assurance, but it is the opinion of the PSC that the plans drawn up by the utilities are adequate and time tested by aactual experience. PSC reviews contingency plans of utilities on an infrequent basis. Power loss caused by loss of generating capacity is well covered by the reliability network, fuel shortage is considered improbable since most power generation fuel is state produced gas and oil

N.G.A. Report

1. Provisions in Energy Act
2. Assigns agency responsibilities/Delegation of powers
3. Calls for federal/state/local coordination
4. Calls for establishment of energy emergency plans
5. Calls for curtailment priorities

6. Calls for monitoring system

7. Includes subpoena/deposition authority

8. Legislation applies only to 1 or 2 energy resources

9. Authority to implement federal programs

10. Specifically suspend restrictions on transport of energy resources such as weight limits

11. Restrict electric energy use

12. Specifically restrict heating/cooling in nonresidential buildings

13. Regulate hours/days of public, commercial and/or industrial establishments

14. Restrict heating and cooling

15. Restrict consumer consumption

16. Specifically to regulate intrastate natural gas

17. Calls for "fair and equitable" distribution

18. System of exemptions/appeals and review

19. Limitations on Governor's authority

O.D.O.E.: "Regulatory Information for Intrastate Natural Gas Transporters," Department of Conservation, Revised September 1, 1976

NO DOCUMENTATION RECEIVED

MAINE

C.R.S. Report: Limited emergency powers under 35 M.R.S.A. Section 311 permit temporary suspension or amendment of rates, schedules and orders

N.R.R.I.

1. No
2. No
3. No response
4. No
5. State Energy Office
    1. No response
    2. No response

N.G.A. Report

1. Amended to Disaster Act
2. Specifies length of emergency powers until legislative approval required
3. Assigns agency responsibilities/Delegation of powers
4. Calls for federal/state/local coordination
5. Recognizes PUC authority
6. Impending shortages are considered "emergencies"
7. Enforcement procedures

O.D.O.E.: "Energy Emergency Contingency Plan," State of Maine (Draft)

NO DOCUMENTATION RECEIVED

MARYLAND

C.R.S. Report: No response

N.R.R.I.

1. Yes, legislation regarding coal supply
2. Only to provide "safe and adequate service"
3. Electric curtailment plans are on file
4. No
5. No response

N.G.A. Report

1. Amended to Disaster Act
2. Separate energy emergency legislation
3. Procedures for determining and declaring a state of energy emergency
4. Specifies length of emergency powers until legislative approval required
5. Calls for federal/state/local coordination
6. Impending shortages are considered "emergencies"
7. Authority to implement federal programs
8. Broad allocation/rationing/distribution/conservation provision
9. Suspension/modification of existing standards during energy shortage
10. Specifically suspend/modify environmental control standards

11. Regulate hours/days of public, commercial and/or industrial establishments

12. Civil penalties

13. Inclusive of previously set forth emergency powers

D.O.E.: "Maryland Energy Policy Office Contingency Plan for the Implementation of the Emergency Petroleum Allocation Program" and "Chapter 3 - Natural Gas Contingency Plan" included in Maryland Energy Office attachments, August 5, 1977 in response to DOE survey

NO DOCUMENTATION RECEIVED

MASSACHUSETTS

C.R.S. Report: The Commission's power to deal with energy emergencies is not expressly provided for. However, companies have complied voluntarily with Commission's recommendations in emergency situations. Commission can request Governor to exercise whatever power he possesses to deal with emergencies.

N.R.R.I.

1. No
2. No response
3. No response
4. No response
5. Governor and Civil Defense Organization
    1. Prevention and filing of plans
    2. PUC reviews

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

MICHIGAN

C.R.S. Report: The Commission adopted the Emergency Electrical Procedures in Order No. U-4128 dated May 23, 1975

N.R.R.I. No response

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: State of Michigan Contingency Plan and Energy Appraisal - Winter 1977-78, prepared by Michigan Energy Administration, Michigan Public Service Commission

REVIEW OF DOCUMENTATION (1)

Emergency electrical procedures for short-term (less than 1 week) and long-term (1 week or more) shortages in the electrical energy supply are described below. The Commission may order the implementation of additional procedures or the termination of the procedures previously employed when circumstances so require. The following health and safety customers shall be subject to curtailments of up to a maximum of 15%, unless it can be demonstrated by the customer that such a curtailment would result

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1. EMERGENCY ELECTRICAL PROCEDURES, Case No. U-4128, final hearing January 8, 1979 (for the electrical service area of Consumers Power Company and The Detroit Edison Company).

in a discontinuation of essential services:

1. Uses essential for the operation of any facility known to be necessary for the support of life, such as hospitals, kidney machines, iron lungs, and other life-support systems

2. Uses required for fire, police, prison, and custodial, and essential street and highway lighting services

3. Refrigeration for the storage and preservation of perishable food or medicine, when that is substantially all the customer's load

4. Operation, guidance control, and navigation services for public transportation and shipping, including rail, mass transit, licensed commercial air transportation, and other forms of transportation

5. Communication services, including telephone and telegraph systems, television and radio stations, newspapers and traffic control and signal systems

6. Water supply and sanitation services, including waterworks, pumping and sewage disposal activities which cannot be reduced without seriously affecting public health

7. Federal activities essential for national defense and state and local activities essential for providing emergency services

8. Uses necessary for the manufacture, directly or as a by-product, the transmission or the distribution of natural or manufactured gas or fuel

9. Uses necessary for the mining and transportation of coal

10. Uses necessary for the production, refining, transmission or distribution of oil and gas for fuel

11. Essential construction, operation, and maintenance activities for energy production and supply

LONG TERM CAPACITY SHORTAGES

1. Curtail use of energy during hours of capacity deficiency

2. Curtail all non-firm outside sales of electricity during the hours of capacity deficiency

3. Initiate voluntary energy curtailment during hours of capacity deficiency of all customers by:

    1. Direct contact of customers with an electric demand of 500KW (*) or higher requesting them to implement their voluntary long-term electric load management plan

    2. Requesting, through mass communication media, voluntary curtailment by all other customers

4. Implement available load management options to controlled service loads and to loads rendered service under interruptible rates in accordance with approved tariffs

5. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric demand of residential, commercial and industrial customers on an equitable basis during the period of capacity deficiency to achieve a 15% reduction in system demand

6. Implement procedures for mandatory curtailment of the electric demand of all nonresidential customers who have a monthly energy use in excess of 75,000 (**) kilowatt-hours, to levels and at times specified, such curtailment to be not more than 15% of the customer's "monthly base period demand." In the event the foregoing steps are insufficient, the following steps will be taken:

7. The Governor will be requested to exercise any authority at his disposal to alleviate the emergency situation

8. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric demand of residential, commercial and industrial customers on an equitable basis during the period of capacity deficiency to achieve a 30% reduction in system demand

9. Implement procedures for mandatory curtailment of demand for customers covered in Section III A6 to levels and at times specified , such curtailment to be not more than 30% of such customers' respective monthly base period demand

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* This will be reduced to 200 KW for utilities with less than $10,000,000 annual revenue who are firm customers

** This will be reduced to 30,000 KWh for utilities with less than $10,000,000 annual revenue who are firm customers

10. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric demand of residential, commercial and industrial customers on an equitable basis during the period of capacity deficiency to achieve a 50% reduction in system demand

11. Implement procedures for mandatory curtailment of demand for customers covered in Section III A6 to levels and at times specified , such curtailment to be not more than 50% of such customers' respective monthly base period demand

12. As a measure of last resort, manual load shedding of firm customer loads will be initiated as necessary to maintain the integrity of the system
Voltage may be reduced up to 6% if at any time it is deemed appropriate to maintain the integrity of the system.

LONG-TERM FUEL SHORTAGES OTHER THAN COAL

1. 45 days

    1. Utility shall notify the Commission of the fuel supply shortage

    2. Use of energy on premises controlled by Consumers Power and Detroit Edison shall be curtailed

    3. Request voluntary curtailment of all customers by:

        1. Direct contact of large industrial and commercial customers and request them to implement their voluntary long-term electric load management plan

        2. Request, by mass communication media, voluntary curtailment by all other customers

    4. Curtail non-firm outside sales of electricity during the period of fuel shortage, except those non-firm sales which do not affect fuel usage at critical plants

2. 30 days

    1. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric consumption of residential, commercial and industrial customers on an equitable basis to achieve a 15% reduction in energy consumption

2. Implement procedures for mandatory curtailment of electric service to all nonresidential customers, who have monthly energy uses in excess of 75,000 (**) kilowatt-hours, such curtailments to be not more than 15% of the customers' "monthly base period use"

3. The Governor will be requested to exercise any authority at his disposal to alleviate the emergency situation

4. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric consumption of residential, commercial and industrial customers on an equitable basis to achieve a 30% reduction in energy consumption

5. Implement procedures for mandatory curtailment of service to customers covered in Section III B 2(b), such curtailment to be not more than 30% of such customer's respective monthly base period use

6. Implement a comprehensive voluntary program with procedures designed to take specific measures at specific times in specific areas to curtail the electric consumption of residential, commercial and industrial customers on an equitable basis to achieve a 50% reduction in energy consumption

7. Implement procedures for mandatory curtailment of service to customers covered in Section III B 2 (b), such curtailment to be not more than 50% of such customers' respective monthly base period use

8. As a measure of last resort, manual load shedding of firm customer loads will be initiated as necessary to maintain the integrity of the system

A similar plan has been established for long-term shortages due to coal. In addition to the measures in the preceding plans are measures such as the following:

1. Seek authorization from the proper regulatory agencies to curtail the use of air pollution control facilities and to burn the available coal in a manner which will maximize use of the remaining stockpiles

2. Request industry to utilize industrial-owned generation equipment to supplement utility generation to maximum extent possible

Critical marks are at 60 days, 40 days, 25 days, and 15 days.

MINNESOTA

C.R.S. Report: The authority to deal with energy emergency situations lies with the Energy Agency not the Public Service Commission. Statutory authority can be found in M.S. 116H.09 Energy Emergency Allocation Plan

N.R.R.I.

1. SEO has authority
2. No response
3. No
4. No response
5. No response

N.G.A. Report

1. Provisions in Energy Act
2. Procedures for determining and declaring a state of energy emergency
3. Specifies length of emergency powers until legislative approval required
4. Assigns agency responsibilities/Delegation of powers
5. Calls for establishment of energy emergency plans
6. Calls for curtailment priorities
7. Calls for "fair and equitable" distribution

O.D.O.E.: "Energy Emergency Conservation and Allocation Plan," January 1977, prepared and issued by the Minnesota Energy Agency

REVIEW OF DOCUMENTATION (1,2,3)

For each energy type there is a demand curtailment plan. In the event an energy supply emergency is declared, these particular plans may be revised to cope with the situation at hand. The following users are entitled to 100% of current requirements:

1. Agricultural production
2. Department of Defense
3. Plant protection
4. Medical, dental and nursing buildings

The following users are entitled to 100% of current requirements, as reduced by order of the Division Director

1. Residential
2. Emergency Services
3. Sanitation Services
4. Telecommunications Services
5. Energy Production

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1. Draft: OMNIBUS ENERGY ACT OF 1979.
2. Minnesota Energy Agency, ENERGY EMERGENCY CONSERVATION AND ALLOCATION PLAN, January, 1977.
3. M.S. 116H.09 Energy Emergency Allocation Plan.

6. Passenger Transportation Services

7. Cargo, freight and mail hauling by truck

8. Aviation ground support vehicles and equipment

9. Emergency street and highway maintenance

When shortfalls of electricity cause an emergency situation to develop, the following steps shall be implemented:

1. The utility experiencing the emergency shortage shall implement its load reduction program and/or its program for shedding parts of its load

2. The utility shall notify the Energy Agency of the emergency and the steps taken to remove the problem

3. If the utility determines that it cannot cope with the emergency by itself, it shall immediately inform the Energy Agency

4. After analyzing the factors involved (the utility, its location, the nature of its load, the time of year, etc.), the Agency Director shall recommend a detailed plan of action to the Division Director

The plan gives a chart for each quarter of the year recommending the types of measures that will affect 5%, 10%, 15%, 20% and 25% reduction in usage. Charts cover the following types of shortages:

1. Aviation Gasoline Supply

2. Liquid Petroleum Gas

3. Middle Distillate Supply

4. Motor Gasoline Supply

5. Natural Gas Supply

6. Residual Oil Supply

MISSISSIPPI

C.R.S. Report: None

N.R.R.I.

1. No
2. No
3. Encouraged but not required
4. No response
5. Governor
    1. No legislation, they assume they would follow any emergency directives issued by the Governor
    2. No assurance

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: Plan not received

NO DOCUMENTATION RECEIVED

MISSOURI

C.R.S. Report: The Commission is empowered by law to provide emergency rate relief to utilities subject to its jurisdiction and can approve surcharges for any extraordinary fuel expenses which may occur during an emergency situation. The Commission may order utilities with large inventories of fuel stock such as coal to share coal or power with other utilities.

N.R.R.I.

1. No legislative authority
2. Yes
3. Yes, no plan to update
4. Some
    1. No
    2. No, tried to do this during coal strike
    3. Surcharge less sales tax as ordered by the legislature
5. None
    1. No response
    2. No response

N.G.A. Report: Possibly applied under Disaster Act

Q.D.Q.E.: No plan

REVIEW OF DOCUMENTATION (1,2,3)

The Commission has been required to set forth criteria in their tariffs as to the order in which load will be eliminated from the system in an emergency situation. This requirement of the utilities to file a load shedding method resulted from a direct request of the Commission issued under the Executive Secretary's signature to the electric utilities in Washington in March 1978. The Commission decided to take this action as a result of the coal strike. The Commission felt this type of action was within the initial mandate of the law setting up the Commission. The Commission tried to share coal stocks among intrastate utilities during the coal strike but because of rail problems could not successfully do so. The Legislature as a result of the coal strike passed a law which disallowed sales tax being acessed to utility customers based on a surcharge incurred because of purchase power needs during the coal strike. The following is an energy usage reduction program to be followed in the event a shortage of fuel occurs or is threatened. Prevailing conditions will be

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1. Missouri Public Service Commission Proposed Curtailment Schedules, March 2, 1978.
2. Before the Public Service Commission of the State of Missouri, Case No ER-77-118, "In the Matter of Kansas City Power & Light Company of Kansas City, Missouri," for the authority to file tariffs reflecting increased rates for electric and steam service provided to customers in the Missouri service area of the company.
3. Notes on page 14.

reviewed daily, and appropriate actions under each step will be taken as conditions warrant.

1. This step shall be taken when the Union Electric (UE) fuel inventory is decreasing, and it is estimated that fuel inventory is sufficient for approximately 60 days' generation at normal operating levels.
   Industrial customers will be surveyed to determine anticipated reductions in energy use. Information will be gathered regarding the magnitude of non-critical load they could shed, should the need arise.

2. 40 days' generation

   1. UE will reduce its own use of electric energy in any way that will not jeopardize essential operations

   2. UE shall make public appeals through appropriate news media, asking customers to voluntarily reduce their use of electric energy because of the fuel shortage

   3. The UE Customer Service and Regional Operations Functions will notify large industrial customers of the request for voluntary curtailment of energy use because of the fuel shortage

   4. UE will notify all sales for resale customers of the request for voluntary curtailment. Such sales for resale customers shall notify their customers of the request for voluntary curtailment

   5. The contractually interruptible portion of "Interruptible" customer loads shall be curtailed

3. 30 days' generation
   State and Federal regulatory commissions, or other appropriate authorities, will be requested to authorize UE to effect the following reductions or eliminations of electric energy uses and, to the extent that they have the authority, to make such reductions mandatory.

   1. Eliminate all outdoor flood and advertising lighting except for the minimum level necessary to protect life and property, and a single illuminated sign advertising commercial facilities that are open after dark

   2. Reduce non-essential uses of electricity in residences, stores, offices, and factories as close to minimum functional and safety levels as possible

3. Reduce parking lot lighting, street and alley lighting, and dusk-to-dawn lighting where practicable to minimum functional and safety levels

4. Minimize energy use by maintaining a temperature of no more that 66 degrees Fahrenheit during operation of heating equipment and no less than 8Ø degrees Fahrenheit during operation of cooling equipment; also minimize use of electrically heated hot water

5. Adjust work schedules, as for building cleaning and maintenance, restocking, etc. which would require office or industrial facilities to be lighted, heated, or cooled beyond normal office or plant hours

6. Curtail sports, entertainment, and recreational activities consistent with saving energy

7. Close all public museums, art galleries, historic buildings, etc. requiring lighting, heating or cooling

8. Require commercial establishments to operate on a schedule not exceeding six days per week with a maximum of 48 hours per week (except essential services to the public)

4. 25 days' generation
State and Federal regulatory commissions, or other appropriate authorities, will be requested to authorize UE to effect the following:

1. Each industrial user of electric energy to immediately curtail its monthly usage on a continuous basis by at least 3Ø% of its average monthly usage during the previous 12 months

2. Each commercial customer to immediately curtail usage to a maximum 4Ø hours of opertion a week

3. Each residential customer to immediately curtail usage to the minimum amount possible

State and Federal regulatory commissions, or other appropriate authorities, will be requested to authorize UE to implement the various actions of Steps 5 and 6 as they become necessary to preserve UE's fuel inventory and maintain essential services.

5. Actions to be implemented as necessary

1. Implement a progressive reduction of industrial and commercial customer use down to levels required for basic plant and employee safety and security

2. Require further residential curtailment to minimum level (minimum "life support" requirements)

6. UE will interrupt loads on a rotating basis as may be necessary and feasible according to procedures described in UE's Operating Manual, Chapter XII, and the following general guidelines:

   1. Advance notice of customer interruptions will be given by release to the news media. Large commercial and industrial customers will be contacted by the UE Customer Service and Regional Operations Functions in accordance with established procedure

   2. Rotating outages of circuits which are known to include the essential services will not be undertaken

   3. Each sales for resale customer will interrupt loads on its system on a rotating basis to achieve the same percentage level of load reduction as UE's procedures provide

The following are classified as Essential Services. These customers are excluded from full compliance with the above.

1. Any facility whose function is known to UE to be necessary to the support of life

   1. Certain hospital services and nursing homes

   2. Non-nospital facilities, such as iron lungs and kidney machines

2. Any facility whose function is known to UE to be necessary for national, state or local security

   1. Missile sites

   2. Defense communication network centers

3. Civil defense facilities

4. Prisons

5. Other governmental activities essential to national defense

3. Any facility whose function is known to UE to be necessary to provide essential public services

1. Police and fire control facilities

2. Essential public services--water, telephone, gas, trash, sewage, etc.

3. Transportation facilities

4. Communications media

5. Coal mining and related functions

6. Petroleum refining and pipeline facilities

7. Medical supply facilities

MONTANA

C.R.S. Report: None. This comes under to Governor's office. Governor proclaimed an emergency in 1976-77 and asked for voluntary curtailment by residents; did curtail electricity to some heavyindustrial users; requested cities and stores to cut back consumption. That emergency is now off as all resevoirs are filled or nearly so. About half of Montana's power is generated by hydroelectric plants.

N.R.R.I.

1. No
2. None
3. No response
4. No response
5. D/K,N/A, but believe Civil Defense groups have some sort of plans
    1. No response
    2. D/K,N/A

N.G.A. Report

1. Separate energy emergency legislation
2. Procedures for determining and declaring a state of energy emergency

3. Specifies length of emergency powers until legislative approval required

4. Calls for federal/state/local coordination

5. Recognizes PUC authority

6. Calls for establishment of energy emergency plans

7. Calls for curtailment priorities

8. Extraordinary authority depends on degree of energy emergency

9. Broad allocation/rationing/distribution/conservation provision

10. Suspension/modification of existing standards during energy shortage

11. Specifically suspend/modify environmental control standards

12. Right to draw on federal funds

13. Enforcement procedures

14. Civil penalties

15. System of exemptions/appeals and review

16. Inclusive of previously set forth emergency powers

17. Conflict of law

<u>O.D.O.E.</u>: "Summary of Proposed Rules for Mandatory Curtailment of Electrical Energy Usage" and "Proposed Rules - Electrical Energy Emergency," December 20, 1977

NO DOCUMENTATION RECEIVED

NEBRASKA

C.R.S. Report: No response

N.R.R.I. Not visited

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: "State of Nebraska Resource Crisis Management Study," Final Report, Nebraska Civil Defense Agency, February 1, 1978

NO DOCUMENTATION RECEIVED

NEVADA

C.R.S. Report: No response

N.R.R.I. Not visited

N.G.A. Report

1. Provisions in Energy Act
2. Procedures for determining and declaring a state of energy emergency
3. Assigns agency responsibilities/Delegation of powers
4. Calls for establishment of energy emergency plans
5. Includes confidentiality of information
6. Includes subpoena deposition authority
7. Impended shortage considered "emergency"
8. Authority to implement federal programs
9. Broad allocation/rationing/distribution/conservation provision
10. Suspension/modification of existing standards during energy shortage
11. Enforcement procedures
12. Civil penalties
13. System of exemptions/appeals and review

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

NEW HAMPSHIRE

C.R.S. Report: PUC statutory authority provides adequate opportunities to address potential and existing emergency situations

N.R.R.I.

1. Yes
2. Yes to all categories
3. No
4. No
5. Governor
    1. No response
    2. Infrequent Company/PUC Staff discussions

N.G.A. Report

1. Provisions in Energy Act
2. Assigns agency responsibilities/Delegation of powers
3. Includes subpoena/deposition authority

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

NEW JERSEY

C.R.S. Report: The authority to implement curtailment plans (1)

N.R.R.I.

1. PUC has authority in plant specific emergencies. If the Governor declares an emergency then the DOE and State Police are in control

2. Yes

3. Requested, not required: ongoing but not systematic

4. Yes

    1. No PUC policy, but intra-state and inter-state grids are used to share reserves. This is a voluntary utilities initiated project

    2. See above (Note: New Jersey is a member of the New England Power Pool)

    3. Rate payers

5. N/A

    1. No response

    2. Performance assumed, no standards or review exist

D.D.O.E.: EMERGENCY REGULATIONS - Chapter 2: "Energy Emergency Allocation."

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1. Docket No. 748-639, New Jersey Board of Public Utility Commissioners

REVIEW OF DOCUMENTATION (2)

Plans are included to cover emergencies with respect to natural gas, motor gasoline, and electric. A summary of natural gas and electric plans follow.

PRIORITY PLAN FOR INVOLUNTARY CURTAILMENT OF NATURAL GAS

In the event a significant supply shortage is forecast over a period in which voluntary customer load curtailment is not expected to provide sufficient relief, the following sequence of involuntary curtailment is to be implemented:

1. Reduce gas service to a minimum at company facilities
2. Curtail all interruptible gas service other than for plant protection, process, or feedstock usage
3. Curtail all interruptible gas service for plant protection, process, or feedstock usage
4. Curtail all firm commercial boiler service of 50 Mcfd or more
5. Curtail all firm industrial service for process and feedstock of 50 Mcfd or more and large commercial service of 50 Mcfd or more
6. Curtail all firm industrial service of 50 Mcfd or less
7. Curtail all firm industrial plant protection service
8. Curtail all residential and small commercial service (50 Mcfd or less)

Each category shall be curtailed on a pro rata basis with each lower priority category being curtailed prior to the curtailment of higher categories. Prior to interrupting firm service, the

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2. EMERGENCY REGULATIONS - Chapter 2: "Energy Emergency Allocation."

following conditions shall be observed:

1. Heating energy sources should not be used to maintain air temperatures within public buildings of State, county, local governments and school boards, including educational institutions, all industrial and commercial establishments, warmer than 62 degrees Fahrenheit during business hours, including start-up and preparation time, and not more than 55 degrees Fahrenheit during non-business hours

2. Where separate thermostats for heating and cooling are in use, air conditioning thermostats should be set at 78 degrees Fahrenheit or at some level such that cooling energy is not used to achieve prescribed heating levels

3. Temperatures within all single and multiple family dwellings shall be set at 65 degrees Fahrenheit from 6:00 a.m. to 11:00 p.m. and 60 degrees Fahrenheit from 11:00 p.m. to 6:00 a.m.

4. Portable space heaters and threshold heaters used as supplementary heating sources shall be prohibited

5. Where applicable, window draperies and blinds shall be used to cut down heat losses by setting them to the closed position during the nighttime hours and on cold, cloudy days, and setting them to the open position during periods of sunshine

6. Thermostat control devices for hot water shall be set to maintain a maximum temperature of no more than 110 degrees Fahrenheit

7. Steps shall be taken to eliminate heating in all unused and seldom used areas: such as stairwells where economically feasible

8. Exterior lighting except for essential safety and security purposes shall be eliminated. All aesthetic, ornamental lights shall be extinguished

The Commissioner may exempt the following establishments from all or a portion of the above requirements:

1. Hospitals

2. Nursing facilities

3. Medical facilities

4. Establishments which employ heat recovery systems, heat/light systems, or other heating systems whereby compliance with the degree limitations set forth in increased rather than decreased use of energy

PROGRAM TO REDUCE ENERGY CONSUMPTION DURING PERIODS OF ENERGY OR FUEL-RELATED DEFICIENCIES (electric)

In the event of insufficient operating reserves, the electric utilities, insofar as is feasible, shall operate on a one-system basis, utilizing available fuel resources to produce electrical energy to supply the load of all electric utilities of the power pool to which it belongs.

1. Without regard to the amount of fuel then available, certain departures, which have an acceptable impact on reliability and economy, shall be made. These include, but are not limited to:

    1. Rescheduling of maintenance

    2. Maximum practicable use of generation having the more abundant fuel supply and of purchases of generation having the more abundant fuel supply from other areas, even when this is not in accord with economic dispatch

    3. Opening of limiting transmission lines and increases in transmission line ratings, based on temperature, to void operation of capacity with limited fuel availability that would otherwise be required to control line loadings

    4. Reduction of the spinning component of the systems' operating reserve requirement, to avoid operation of capacity with limited fuel availability so long as quick-start units are available for operation

    5. Reliance on manual tripping of pumped storage hydro units, operating as pumps, to limit use of capacity with limited fuel availability that otherwise would be required to control line loadings

2. The department shall make public appeals, obtain voluntary curtailments and use of a limited voltage reduction including:

1. Public appeals through appropriate news media asking customers to reduce their use of electric energy

2. Voluntary customer energy reduction programs shall be placed in effect

3. A 3% voltage reduction is to be made effective on a continuous basis

3. Direct the use of greater voltage reductions and mandatory usage curtailments, including:

1. A 5% voltage reduction on a continuous basis

2. Direct mandatory reductions or limitations of power uses and reductions of hours of operation of various users, including:

1. Eliminate all outdoor flood and advertising lighting, except for the minimum level to protect life and property and, where feasible, a single illuminated sign identifying commercial facilities that are open after dark

2. Reduce general lighting levels in stores and offices as close to minimum safety levels as possible

3. Eliminate show window and display lighting

4. Reduce the number of elevators operating in office buildings during non-peak hours by at least 50%

5. Minimize energy use by maintaining a temperature of no less than 80 degrees by operation of cooling equipment and no more than 60 degrees by operation of heating equipment

6. Minimize work schedules, as for building cleaning maintenance, restocking, etc.

7. Curtail nighttime sports, entertainment and recreational activities

8. Close all public museums, art galleries and historic buildings

9. Require Sunday closing of retail establishments, except for essential services to the public

10. Require closing from 7 p.m. to 9 a.m. of all retail establishments, except essential services to the public

4. Direct all customers to reduce their use of electric power, as compared to a similar billing period in the preceding 12 months by the following amounts:

    1. Residential customers - 5%

    2. Manufacturing -10%

    3. Commercial -15%

5. Direct all customers to double the amount of reduction required in 4.

6. Interrupt loads on a rotating basis during the hours from 8:30 a.m. to 4:30 p.m. All loads which can be disconnected shall be disconnected for a period of two hours, in four sequential blocks, as determined by each electric utility

7. Implement a progressive reduction of manufacturing and commercial customer use on an as-required basis down to levels required only for basic plant and employee security. Require further residential curtailment down to normal life support requirement

The industrial and commercial establishments listed should strive to meet, but are not mandated to meet the requirements of the several steps, unless so directed by order of the Commissioner of the Department.

1. Railroads

2. Local and suburban transit

3. Transportation by air

4. Pipeline transportation

5. Communications

6. Electric gas and sanitary service

7. Coal mining and related functions

8. Petroleum refining

9. Hospitals

10. Electric sales for resale under FPC jurisdiction
11. Prisons
12. Police and fire fighting facilities
13. Water supply
14. Federal activities essential to national defense
15. Life support systems

NEW MEXICO

C.R.S. Report: No response

N.R.R.I. Not visited

N.G.A. Report

1. Possibly applied under Disaster Act
2. Civil penalties
3. System of exemptions/appeals and review
4. Inclusive of previously set forth emergency powers
5. Conflict of law

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

NEW YORK

C.R.S. Report: In the early 1970's the Commission established electric load shedding procedures for capacity shortages and, in 1973-1974, procedures for fuel emergencies. These are now standard operating procedures for the Utilities. There were several occasions during 1977 when these procedures were followed, such as: July 13 - Con Edison and LILCO load shedding and September 26 - Con Edison and Orange & Rockland shed load

N.R.R.I.

1. Yes, broad powers to establish regulation to ensure reliable service, etc.
2. Yes, power sharing in the event of fuel shortage, and load shedding in the event of capacity shortage
3. Yes, yearly updates
4. D/K,N/A
5. No response

N.G.A. Report

1. Provisions in Energy Act
2. Calls for establishment of energy emergency plans
3. Calls for curtailment priorities

4. Impending shortages are considered "emergencies"

5. Broad allocation/rationing/distribution/conservation provision

6. Specifically suspend/modify environmental control standards

7. Calls for "fair and equitable" distribution

8. Enforcement procedures

9. Civil penalties

10. System of exemptions/appeals and review

11. Severability clause

O.D.O.E.: " Energy Emergency Plan," prepared by the New York State Energy Office, January 1978

REVIEW OF DOCUMENTATION (1)

Activities during an emergency have been divided into three stages

1. Pre-Emergency
This stage is triggered by the receipt of information indicating an impending supply/demand imbalance. The Emergency Energy Operations Center (EEOC), the State agency staff group responsible for crisis management, will be activated. If necessary, the Governor will be requested to declare an energy supply emergency.

2. Emergency
As necessary, reporting requirements will be instituted, conservation measures will be initiated and curtailment and allocation programs will be put into place.

3. Post Emergency
Emergency measures will be terminated, consistent with the need to avoid recurrence.

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1. Energy Emergency Plan, prepared by the New York State Energy Office, January 1978.

Emergency response options will be implemented pursuant to orders issued by the Commissioner. A summary of categories 1 and 2 appear below for crises involving natural gas, coal, and electricity.

NATURAL GAS

1. Pre-Emergency
    1. Monitoring of Supply/Demand/Distribution Data
    2. Crisis Communications
        1. Utilities shall report information concerning the severity of the shortage, the steps taken to relieve the shortage and their effectiveness
        2. The EEOC shall assist the affected utility in obtaining additional supplies of gas
        3. The EEOC shall keep the Chairman of the PSC and the Commissioner of the SEO regularly informed of the severity and the effectiveness of measures taken
        4. The EEOC shall provide assistance to those alternate fuel customers who have been interrupted in obtaining an allocation of the appropriate fuel
        5. The EEOC shall provide assistance to the affected utilities in obtaining the necessary supplies of fuel for extended operation of peak shaving facilities

2. Emergency
    1. Declaration of Emergency
    2. Reporting change in situation
    3. Conservation Measures
        1. Mass media appeals to all classes of customers
        2. All existing laws, codes, contracts or other legal requirements applicable to gas-heated structures which establish minimum indoor daytime temperatures

higher than 65 degrees Fahrenheit or minimum nighttime indoor temperatures higher than 55 degrees Fahrenheit will be superseded by emergency order, except as they relate to hospitals, nursing homes and other health-related facilities

3. Specific gas conserving measures shall be instituted in all state owned or operated facilities and in all public, private and parochial schools as well as all degree granting post secondary educational institutions

4. Curtailments
One or more of the following may be taken:

1. Curtailment of all large non-essential commercial and industrial users by an amount sufficient to balance supply demand

2. Curtailment of service to all non-essential industrial users to minimum levels required for plant protection

3. Curtailment of service to all non-essential industrial and commercial users to minimum levels required for plant protection

4. Complete interruption of large non-essential commercial and industrial users

COAL

1. Pre-Emergency

1. Supply/Demand/Distribution Data Monitoring (by SEO)

2. Potential Crisis Identification

3. Crisis communications

2. Emergency

1. Reporting

1. Stocks in inventory and number of days supply

2. Stocks in transit and number of days supply

3. Schedule of shipments for the next 30 day period and the following 30 day period

2. Maintenance of Normal Deliveries

1. No sales to be allowed to customers who were not classified as "customer of record"

2. All sales to end users to be made on the normal delivery schedule and of the quantity generally accepted between the parties

3. Credit terms to be granted to customers of record on the same basis as was given the customer up to 15 days prior to the emergency

4. SEO will encourage prices established for all classes of trade to be maintained during the period involved

3. Allocation program
SEO will likely implement the following priority schedule for coal allocation:

1. Medical psychiatric and correctional facilities and other essential services facilities without alternate fuel capability

2. Residential structures without alternate fuel capability

3. All others

SEO will allocate coal supplies to those who have filed an application for emergency assistance and such application has been approved.

1. Requests for emergency assistance shall be made on the appropriate form

2. The application will be submitted to the County or City Energy Coordinators who will have 24 hours to verify such request and make recommendation to the SEO

3. All requests shall be clearly marked "Coal Allocation Request"

4. SEO will have 48 hours to approve or disapprove such requests

5. If SEO has not acted within this time, such request will be considered approved

SEO will allocate supplies by authorization of the Deputy Commissioner. Such allocation can be issue against end users in the state and local government agencies as well as end users in the private sector.

4. Fuel Switching

ELECTRIC

1. Pre-Emergency

   1. Monitoring of Supply/Demand/Distribution Data

   2. Potential Crisis Identification

   3. Crisis Communications

   4. New York Power Pool (NYPP) Actions
      NYPP OP 11-4 which establishes procedures to promote energy conservation and/or minimize consumption of specific fuels will be implemented through Curtailment Stages I and II, if necessary. Actions may also be taken by the NYPP in accordance with the load relief procedure including voltage reduction and/or load shedding up to 15%

2. Emergency

   1. Communications

   2. New York Power Pool Actions

3. SEO/PSC Actions

   1. Restrict fuel use by other sectors

   2. Redirect required fuels to appropriate utilities to prevent a system shutdown

   3. Necessary waivers for use of non-conforming fuels

   4. Mandatory conservation measures

NORTH CAROLINA

C.R.S. Report: The emergency energy action plan to deal with energy emergency situations is a part of the Governor's Emergency Powers which are implemented in cooperation with Commission programs when required. Certain steps, including limiting retail business hours of operation and four day government work weeks were implemented due to natural gas curtailments

N.R.R.I.

1. No
2. No response
3. No response
4. No response
5. Energy Policy Council
    1. D/K
    2. No response

N.G.A. Report

1. Provisions in Energy Act
2. Procedures for determining and declaring a state of energy emergency

3. Specifies length of emergency powers until legislative approval required

4. Establishes energy emergency advisory committee

5. Assigns agency responsibilities/Delegation of powers

6. Calls for federal/state/local coordination

7. Calls for establishment of energy emergency plans

8. Calls for curtailment priorities

9. Calls for collection of load curtailment plans

10. Calls for monitoring system

11. Authority to implement federal programs

12. Broad allocation/rationing/distribution/conservation provision

13. Suspension/modification of existing standards during energy shortage

14. Specifically suspend/modify environmental control standards

15. Regulate hours/days of public, commercial and/or industrial establishments

O.D.O.E.: "Emergency Energy Plan," Emergency Energy Committee, North Carolina Energy Policy Council, October 1977 (Draft)

NO DOCUMENTATION RECEIVED

NORTH DAKOTA

C.R.S. Report: None

N.R.R.I.

1. No
2. No response
3. No response
4. No
5. Governor
    1. D/K,N/A
    2. None

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: North Dakota Emergency Energy Plan, May 23, 1977, prepared by Office of Energy Management and Conservation

NO DOCUMENTATION RECEIVED

OHIO *

C.R.S. Report: No response

N.R.R.I.

1. Yes, PUC has authority under general powers; SEO has specific authority
2. Yes, one plan per utility to handle all contingency planning
3. Yes, for fuel and capacity shortages. Reviewed periodically by staff interviews
4. No
5. No response

    1. No response
    2. Limited problems (storms, etc.) are effectively dealt with

N.G.A. Report

1. Provisions in Energy Act
2. Procedures for determining and declaring a state of energy emergency
3. Specifies length of emergency powers until legislative approval required
4. Calls for federal/state/local coordination
5. Recognizes PUC authority

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* Ohio is currently holding hearings on a revised plan. The proposed revision follows this portion of the report.

6. Calls for establishment of energy emergency plans

7. Impending shortages are considered "emergencies"

8. General clause to "take necessary action"

9. Suspension/modification of existing standards during energy shortage

O.D.O.E.: "State of Ohio Coal Contingency Plan," as adopted by the Ohio Energy and Resource Development Agency, October 3, 1977; and "State of Ohio Natural Gas Contingency Plan," as adopted by the Ohio Energy & Resource Development Agency, November 29, 1977

REVIEW OF DOCUMENTATION (1,2,3,4,5)

Curtailment plans approved by the PUC and amendments to or modifications of such plans ordered by the Commission, shall determine the allocation and curtailment of natural gas, synthetic natural or artificial gas, and electricity. The Commission shall determine priorities among categories of users and among categories of uses of the above. Such priorities shall be implemented whenever the Commission determines it is necessary to do so to protect the public health and safety and to prevent

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1. Am. Sub. H.B. No. 415, pp. 17 - 20.
2. Comparison of Long Term Fuel Shortage Plans of Ohio Public Utilities - Tentative.
3. Energy Contingency Management Plan of the Ohio Department of Energy, November 27, 1978.
4. Emergency Rules for Fuel Shortages as adopted June 13, 1978, Ohio Department of Energy (ODOE).
5. Allocation Rules for Fuel Shortages as adopted June 13, 1978, Ohio Department of Energy (ODOE).

unnecessary or avoidable damage to property. In the event that an energy emergency is declared, and emergency measures are implemented by the ODOE pursuant to Section 1551.09 of the Revised Code which conflict with such curtailment plans or with amendments to or modifications of such plans ordered by the Commission, such emergency measures supersede the curtailment plans or the amendments thereto or modifications thereof only to the extent that they conflict.

The Director of Energy is directed to adopt rules in accordance with Chapter 119. The rules may prescribe different measures for each different type or level of declared energy emergency, and for any type or level shall empower the governor to:

1. Restrict the energy consumption of state and local government offices and industrial and commercial establishments
2. Restrict or curtail public or private transportation, or require or encourage the use of car pools or mass transit systems
3. Order, during a declared energy emergency, any electric light, natural gas or gas, or pipeline company, electric power or gas utility that is owned by a municipal corporation or not for profit, coal producer or supplier, or petroleum fuel producer, refiner, wholesale distributor, or retail dealer to sell electricity, gas, coal, or petroleum fuel in order to alleviate hardship, or if possible to acquire or produce emergency supplies to meet emergency needs
4. Order, during a declared energy emergency, other energy conservation or emergency energy production or distribution measures to be taken in order to alleviate hardship
5. Mobilize Civil Defense, National Guard, law enforcement, or emergency medical services

The rules shall be designed to protect the public health and safety and prevent unnecessary or avoidable damage to property.

They shall encourage the equitable distribution of available electric power and fuel supplies among all geographic regions in the state.

The Governor may, after consultation with the Director of Energy, declare an energy emergency by filing with the Secretary of State a written declaration of an energy emergency at any time he finds that the health, safety, or welfare of the residents of the state or of one or more counties of the state is so imminently and substantially threatened by an energy shortage that immediate action of state government is necessary to prevent loss of life, protect the public health or safety, and prevent unnecessary or avoidable damage to property.

IMMEDIATE ACTIONS UPON DECLARATION OF "EMERGENCY" (electric)

1. Each utility serving end-users shall implement a public appeals campaign through appropriate news media alerting its customers to the impending shortage of coal and requesting its customers to reduce voluntarily their consumption of electric power. The appeals shall include, but not be limited to, the following suggestions:

    1. Reduce street and highway, outdoor flood and advertising lighting

    2. Reduce general interior lighting levels to minimum levels

    3. Reduce show window and display lighting to minimum levels to protect property

    4. Reduce the number of elevators operating in office buildings during non-peak hours

    5. Reduce electric water heating temperature to minimum level

    6. Minimize work schedules for building cleaning and maintenance, restocking, etc. which requires office or commercial and industrial facilities to be open beyond

normal working hours

7. Minimize electricity use by maintaining a space heating temperature of no less than 78 degrees Fahrenheit by operation of cooling equipment and no more than 68 degrees Fahrenheit by operation of heating equipment

8. Encourage, to the extent possible, daytime scheduling of entertainment and recreational facilities

2. Each utility shall notify the general public of the supply level through the issuing of daily bulletins if its future fuel supplies are inadequate for the foreseeable future to provid uninterrupted service for the full requirements of customers' priority uses. Each utility shall provide information on:

   1. Actions the utility will take to allocate the available supply of electric power at various supply levels

   2. The time period(s) in which any customer or class of customers would be subject to curtailments or other restrictions, or rolling blackouts, prior to initiating such actions

   3. Precautions and procedures to be followed prior to and during implementation of end use restrictions or curtailments

   4. Procedures to be followed by customers wishing to substantiate a claim for "priority use"

3. Each utility maintaining stocks of coal shall report to ODOE its "IUBDS" (Individual Utility Burn Days Supply) and such other information that ODOE determines necessary to manage the emergency

4. The ODOE shall calculate the "SABDS" (Statewide Average Burn Days Supply of Coal to Utilities) and make it available to the Governor, PUCO, all utilities and the public

5. The ODOE SABDS figure shall be used to determine the threshold trigger point for the actions required

6. Notwithstanding 3. SUPRA, at the point when the statewide average supply declines to 30, an oral report shall be made daily by each utility which reflects the situation for the reporting utility as of the previous day

Actions prior to 30 days statewide average burn days supply

1. Each utility which has not imposed mandatory curtailments shall increase their efforts to effect voluntary conservation of at least 25% by all electric power users

2. Each utility shall report weekly to ODOE its anticipated and actual load in kilowatt-hours consumed and coal tonnage savings resulting from curtailments and estimated conservation by consuming sector and shall identify any consuming sector falling below designated curtailment or conservation percentage levels

3. ODOE may be requested to encourage all utilities to purchase and to share power among themselves to aid in alleviating existing power shortages and to prevent possible future power shortages

Actions at 30 days statewide average burn days supply

1. Each utility shall impose a mandatory curtailment of not more than 25% on all customers for uses other than "priority uses"

2. Each utility operating generating capacity shall, wherever possible, switch that capacity to an alternate fuel other than coal, provided that:

    1. The utility has informed the ODOE

    2. The ODOE has confirmed to the utility that the specific alternate fuels are not themselves in short supply

    In addition, all utilities shall reduce internal consumption of electric power to the maximum degree possible.

3. Each utility operating generating capacity shall:

    1. Begin the dispatch of power plants in a manner that would maximize, to the extent possible, the generation of electricity from a given quantity of coal

    2. In coordination with other electric utilities as may be ordered by PUCO or the governor, initiate coal conservation dispatch on a statewide basis to arrest, to the extent possible, the decline of remaining fuel supply of those power production plants most threatened with fuel exhaustion by:

        1. Increased load dispatch from plants with more secure fuel supply

2. Increased sales of power from greater plants to other utilities with lower fuel supplies

4. Each utility shall monitor compliance with applicable curtailments

5. Each utility shall report daily to ODOE and PUCO its daily coal burn, generation, power purchases by source, coal deliveries, and its coal burn days supply

6. Each utility shall report daily to ODOE and PUCO the percentage of electric power consumption reduction on an adjusted degree day basis for the previous day and the resulting kilowatt-hours and coal tonnage saved through conservation and/or curtailment

7. The PUCO may be requested to:

   1. Monitor each Ohio utility's coal supply, burn day level, and power purchases on a daily basis

   2. Determine each day the weighted statewide days' supply of coal for all Ohio utilities

   3. Direct utilities with coal supplies in excess of the statewide average to sell power generated in excess of demand to those Ohio utilities with coal supplies below the statewide average

   4. Assure that each utility uses non-coal fuels for generation and purchases power through the grid to the extent possible, consistent with system stability and reliability and the availability of non-coal fuels

8. With respect to end users of electricity:

   1. All nonpriority outdoor lighting is prohibited, except lighting essential for security or safety

   2. All public, commercial, and industrial buildings are to reduce space heating temperatures to no more than 60 degrees Fahrenheit except where health requirements deem such measures to be inappropriate

   3. All public, commercial, and industrial buildings are to reduce interior lighting to the minimum levels essential for continued work and operations

Actions at 25 days statewide average burn days supply

1. Each utility shall

    1. Impose a mandatory curtailment of not more than 50% on all uses other than "priority uses" to be effective when the statewide average burn days drops to 20 days

    2. Impose a mandatory curtailment of not more than 25% on all "priority uses" other than residential to be effective when the statewide average burn days drops to 20 days

2. Each utility shall identify its customers/users who can use alternate fuel and/or non-utility supplied electricity

Actions at 20 days statewide average burn days supply

1. Each utility shall impose mandatory curtailments of not more than 50% on all customer uses other than "priority uses"

2. Each utility shall impose mandatory curtailment of not more than 25% on all "priority uses" other than residential uses

3. Each utility shall curtail customers/users to the extent that they can utilize alternate fuel sources in a proper and prudent manner without danger of physical damage to equipment or endangering health and safety

4. Each utility shall provide its customers/users with notification, schedule, procedures, and precautions for possible imposition of rolling blackouts

Actions at 15 days statewide average burn days supply

1. Each utility shall impose a mandatory curtailment to plant protection levels on all uses other than "priority uses" to be effective when the statewide average burn days is 10 days

2. When ODOE determines that significant generation capacity shortages exist in one or more utility systems, the PUCO may be requested to order or the Governor may order the affected utilities to implement procedures for interruption of "selected distribution" circuits (rolling blackouts) on a rotation basis in accordance with specified load reduction amounts minimizing interruption to facilities which are essential to the public health and safety.

SAMPLE OF LONG-TERM FUEL SHORTAGE PLAN (electric)

CSOE

1. 50 days
    1. Notify PUCO
    2. In-house conservation
    3. Notify public
    4. Discontinue Economic Dispatch

2. 40 days
    1. Voluntary 25% reduction for large customers (500 kW)
    2. Voluntary 25% reduction for general public
    3. Reduce voltage when necessary for system integrity
    4. Advise customers of future mandatory measures

3. 30 days
    1. Interrupt selected circuits - 4 hrs/day max.
    2. 75,000 kWr/mo customers curtailed 50%
    3. Circuit interruptions increased to 8 hrs/day max. - PUCO notification required

4. 20 days
    1. Increase interrupted circuits to 12 hr/day max.
    2. Mandatory curtailment of large customers to essential loads

"Priority Uses" shall mean the minimum amount of electrical power necessary for protection of the public's health and safety, and for prevention of unnecessary or avoidable damage to property, at:

1. Residences
2. Hospitals
3. Medical and Human life support systems and facilities
4. Electric power generating facilities and central heating plants serving the public
5. Telephone, radio, television and newspaper facilities
6. Local and suburban transit systems and air terminal facilities
7. Police and fire fighting facilities
8. Water supply and pumping facilities
9. Sanatary service facilities
10. Federal facilities essential to national defense
11. Production facilities for natural gas, artificial or synthetic gas, propane, and petroleum fuel, fuel refineries
12. Pipeline transmission and distribution facilities for natural gas, artificial, or synthetic gas, propane, and petroleum fuels
13. Coal mines and related facilities
14. Production, distribution, and storage facilities for dairy products, meat, fish, poultry, eggs, fresh produce, bread, rolls, and buns
15. Buildings and facilities limited to uses protecting the physical plant and structure, appurtenances, product inventories, raw materials, livestock, and other personal or real property
16. Other such similar uses as may be determined by the PUCO

Similar plans and priorities have been developed for dealing with coal, natural gas, heating oil and propane, and transportation fuels emergencies.

OKLAHOMA

C.R.S. Report: No response

N.R.R.I.

1. No
2. No response
3. No
4. No response
5. Governor
    1. No formal plans made
    2. None, no emergency has ever existed

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: Plan in preparation

NO DOCUMENTATION RECEIVED

OREGON

C.R.S. Report: In the event of an emergency threatening the health, safety and welfare of the general public, the commissioner may on his own motion and without hearing establish a plan for the curtailment of load by any person engaged in the sale or resale of electricity or natural or synthetic gas

N.R.R.L.

1. PUC has authority to order curtailment plans; SEO is charged with contingency planning
2. See Northwest Natural Gas curtailment plans in event of fuel shortage
3. No
4. All done ad hoc
5. No response

N.G.A. Report

1. Separate energy emergency legislation
2. Procedures for determining and declaring a state of energy emergency
3. Calls for federal/state/local coordination
4. Recognizes PUC authority
5. Calls for curtailment priorities

6. Includes confidentiality of information

7. Calls for monitoring system

8. Includes subpoena/deposition authority

9. General clause to "take necessary action"

10. Authority to implement federal programs

11. Broad allocation/rationing/distribution/conservation provision

12. Specifically suspend/modify transportation routes, schedules and/or speed limits

13. Conservation by state agencies and political subdivisions

14. Calls for "fair and equitable" distribution

15. Civil penalties

16. System of exemptions/appeals and review

17. Inclusive of previously set forth emergency powers

18. Liability clause

O.D.O.E.: "Oregon Contingency Plan for Electricity, Gas & Petroleum," prepared by the Oregon Department of Energy, August 17, 1977

REVIEW OF DOCUMENTATION (1,2)

Emergency curtailment plans are required from any person engaged in the sale or resale of electricity or natural or synthetic gas.

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1. ORS 757.710, 757.720, 757.730.
2. Before the Public Utility Commissioner of Oregon, UF - 3336, In the Matter of the Emergency Curtailment of electric service, Opinion and Order.

Factors to be considered in approving the plan shall be based on the following:

1. The consistency of the plan with the public health, safety and welfare
2. The technical feasibility of implementation of the plan
3. The effectiveness with which the plan minimizes the impact of any curtailment
4. Consistency with Oregon energy policies

Priority usage categories

1. Hospitals, nursing homes and other health facilities
2. Police and fire stations
3. Essential communication facilities
4. Sewage - treatment and pollution control facilities
5. Municipal and public utility water treatment and pumping installations
6. Airports
7. Energy supply facilities
    1. Refineries
    2. Oil and gas pipeline and supply facilities
    3. Coal handling facilities

Oregon Electric Curtailment Plan

1. Voluntary Curtailment

1. Stage 1

    1. The utility shall curtail its own use

    2. The utility shall seek voluntary curtailment of use in all large buildings

    3. The utility should request its major use customers to curtail uses

    4. The utility, through media pronouncements, will request all customers to curtail uses

    5. The utility, if it is a deficient utility, should replace, by purchase or other means, energy included in its planned resources but not generated due to outages of any of its major resources

2. Stage 2

    1. The utility will make urgent requests for voluntary curtailment of all uses by all customers

    2. The utility through media pronouncements, will suggest specific measures which should be taken, including but not limited to:

        1. 65 degrees Fahrenheit maximum thermostat setting for daytime space heating

        2. 55 degrees Fahrenheit maximum thermostat setting for nighttime space heating

        3. 85 degrees Fahrenheit minimum thermostat setting for space cooling

        4. 120 degrees maximum thermostat setting for water heating

        5. Line drying for clothing

        6. Elimination of:

            1. Swimming pool heating

            2. Outdoor decorative lighting

            3. Window display, outdoor display, area and sign lighting, except during night time hours when the place of business is open; at all times, such lighting should be reduced to the lowest reasonable level

4. Parking lot lighting except during the night time hours when the place of business is open, and then only to the levels required for safety and security

5. Street and public highway lighting not required for safety and security

3. All energy included in planned resources, but not generated due to outages of any of the region's major resources should be replaced by purchase or other means

4. Deficient utilities should purchase electric energy available from base load or intermediate load facilities within the Western Systems Coordinating Council area which can be used or stored

2. Mandatory curtailment

1. Stage 1

1. Elimination of the five categories listed under 6. of 2. of Stage 2 of voluntary curtailment

2. All possible energy supplies will be obtained by the utility if it is deficient, regardless of cost

2. Stage 2

1. All customers will be directed to curtail electric energy consumption by the percentage declared necessary by the authority to bring anticipated resources and loads into balance

2. The utility will request operation of all available state, federal, and private generating units with capacity in excess of owner's current need

3. Stage 3

1. Restriction of hours of energy supply to retail shopping and commercial customers

2. Restriction of lighting for illuminated sporting events

3. Restriction of operation, and energy consumed, by industrial and governmental operations

4. Specified large industrial customers will be ordered to curtail usage by a fixed percentage necessary to balance loads and resources

5. Specified large industrial customers will be ordered to cease operation

6. All customers will have their service interrupted on a rotating basis or voltage reduced

7. Other appropriate emergency action with emphasis placed on minimizing unemployment and other economic and social dislocations

PENNSYLVANIA

C.R.S. Report: Do not view any authorities as extraordinary, although some of the basic authorities permit coping with emergency, as well as most normal situations. Such authorities include the ability to order curtailments and allocations of energy and changes in rates. All of those measures, although not extraordinary, were used during both the gas problem of 1976/1977 and the coal problem of 1977/1978

N.R.R.I.

1. Yes, PUC has regulatory authority; SEO deals with oil supply
2. Yes
3. Yes, annually
4. No
5. N/A

N.G.A. Report: Previously applied or opinion rendered under Disaster Act

O.D.O.E.: Plan in preparation

REVIEW OF DOCUMENTATION (1,2)

The documentation received is not particularly relevant to energy emergency situations, but pertains more to routine outages from such causes as storms, power lines down, etc.

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1. "Supplement for Crisis Relocation," Pennsylvania Public Utility Commission.
2. " Proposed Procedure to be Followed by Electric, Gas, Water and Telephone Utility Companies to Inform this Commission of Service Outages," Pennsylvania Public Utility Commission.

PUERTO RICO

C.R.S. Report: The P.R.W.R.A. Governing Board is empowered by Law to make changes in the general rate structure effective immediately, then within a reasonable time after such changes are made a public hearing shall be held with respect thereto before the Board of Authority. After such hearing the Board may sustain, alter, suspend or revoke such changes. This power was not exercised in 1977

N.R.R.I. Not visited

N.G.A. Report

1. Separate energy emergency legislation
2. Procedures for determining and declaring a state of energy emergency
3. Assigns agency responsibilities/Delegation of powers
4. Includes confidentiality of information
5. Legislation applies only to 1 or 2 energy resources
6. Broad allocation/rationing/distribution/conservation provision
7. Right to draw on general funds
8. Right to incur expenses
9. Right to draw on special energy emergency funds
10. Right to set charge or surtax on supplies

11. Enforcement procedures

12. System of exemptions/appeals and review

O.D.O.E.: No information

NO DOCUMENTATION RECEIVED

RHODE ISLAND

C.R.S. Report: Partial moratorium on shut-offs. Bills may accumulate $200.00 of service before shut-off notice can be issued by company

N.R.R.I.

1. Uncertain yes
2. Yes
3. No
4. D/K
5. Maybe Governor
    1. There is a state energy board; don't know of any such role for it
    2. D/K

N.G.A. Report

1. Previously applied or opinion rendered under Disaster Act
2. Provides funds for fuel and utility costs of eligible needy families
3. Plans for emergency assistance

O.D.O.E.: Plan in preparation

REVIEW OF DOCUMENTATION (1,2)

Gas Contingency Plan

1. Voluntary conservation

    1. Immediately reduce ambient (room) temperatures to 65 degrees Fahrenheit during the day and 60 degrees Fahrenheit or lower at night for all gas users

    2. Further reduce settings to 60 degrees Fahrenheit during the day and the lowest available setting at night

    3. Customers are urged to convert to a more abundant fuel source if available

2. Involuntary conservation

    1. "Interruptible or seasonal" consumers shall be curtailed to the extent of agreements covering interruptible service between the consumers and the utilities

    2. Temperatures in churches, school facilities, and places of entertainment excluding restaurants shall be reduced to 40 degrees Fahrenheit or the lowest possible temperature for prevention of pipe freezing

    3. Commercial and industrial customers will be required to operate their establishment or facility at 60 degrees Fahrenheit

    4. Consumers possessing alternate fuel capabilities shall convert to the use of alternate fuel if in greater supply

    5. Temperatures in municipal and state agencies shall b reduced to 40 degrees Fahrenheit or the lowest possible temperature for prevention of pipe freezing

    6. Daily commercial and industrial periods of operation shall be reduced to any one continuous 8 - hour shift per day, five 8 - hour shifts per week

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1. "Gas Contingency Plan," Revision 4, February 7, 1977.
2. Emergency Rules and Regulations Governing the Termination of Electric, Gas and Water Utility Services Promulgated Pursuant to Title 42, Chapter 35, and Title 39 of the General Laws of the State of Rhode Island, State of Rhode Island Public Utilities Commission.

7. Industrial consumers shall be curtailed by 100% of process loads and a reduction in heating loads to reflect interior maximum temperatures of 40 degrees Fahrenheit or the lowest possible temperature for the prevention of pipe freezing during any period of the day

8. Commercial users: same as 7.

9. Natural gas supplies to both commercial and industrial customers shall be cut off completely

10. Sharing techniques for residential customers or re-allocation of gas between Rhode Island gas utilities will be established by the Division of Public Utilities

11. Service to various residential customers shall be curtailed in full

Categories generally exempt:

1. Hospitals
2. Nursing homes and other health related facilities
3. Fire and police stations
4. Aid stations
5. Major news media
6. Correctional facilities
7. Other emergency facilities

SOUTH CAROLINA

C.R.S. Report: No response

N.R.R.I.

1. No
2. All utilities have plans or are part of regional power pool which has plans
3. The Commission reviews new plans
4. Some
    1. No, power pools have their own system
    2. Tarriffs govern sharing
    3. Rate payers
5. No response

N.G.A. Report: Previously applied or opinion rendered under Disaster Act

O.D.O.E.: "South Carolina Winter Energy Emergency Plan (Draft)," prepared November 1977

NO DOCUMENTATION RECEIVED

SOUTH DAKOTA

C.R.S. Report: None

N.R.R.I.

1. No
2. No response
3. No response
4. No response
5. Governor
    1. No response
    2. No response

N.G.A. Report: Amended to Disaster Act

O.D.O.E.: "South Dakota Energy Emergency Plan," January 27, 1978

NO DOCUMENTATION RECEIVED

TENNESSEE

C.R.S. Report: The exact authority of this Commission to deal with energy emergency situations has never been precisely determined. This Commission has considerable flexibility in dealing with emergency situations, and in 1977 enacted "an emergency rule" to allow natural gas distributors to make emergency purchases of natural gas pursuant to Rule 2.68 of the Rules of the Federal Energy Regulatory Commission and to recover the costs of emergency purchases

N.R.R.I.

1. Yes
2. Yes, emergency curtailment plans
3. Yes, approved curtailment plans; SEO has draft model on electricity
4. Some
    1. No
    2. No
    3. Rate payers
5. No response

N.G.A. Report

1. Amended to Disaster Act
2. Separate energy emergency legislation
3. Impending shortages are considered "emergencies"
4. Conflict of law

O.D.O.E.: Plan in prepatation

NO DOCUMENTATION RECEIVED

TEXAS

C.R.S. Report: The Commission has authority to order a utility to augment its supplies in the event of a serious shortage. This authority was not used in 1977 because of th availability of gas in the Texas market

N.R.R.I.

1. No
2. PUC places requirement
3. No
4. Yes
    1. Yes
    2. Yes
    3. Stockholders
5. Governor
    1. No response
    2. None

N.G.A. Report: Possibly applied under Disaster Act

Q.D.Q.E.: "Energy Emergency Planning Guide" for the State of Texas, adopted by the Texas Energy Advisory Council, January 1978

NO DOCUMENTATION RECEIVED

UTAH

C.R.S. Report: Our Commission has no extraordinary authorities for dealing with energy emergency situations

N.R.R.I.

1. Never considered
2. Not required
3. No response
4. No response
5. Disaster Planning Agency deals with National (?) Disasters
    1. D/K, haven't given it much thought
    2. Curtailment plans are reviewed

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: No plan

NO DOCUMENTATION RECEIVED

VERMONT

C.R.S. Report: Can grant emergency relief by statute. Not used in 1977

N.R.R.I.

1. SEO has authority
2. Curtailed in accordance with New England Power Pool procedures
3. Yes, every 1 to 2 years
4. Some
    1. No
    2. No
    3. Rate payers; otherwise through general rate case if considered an "extraordinary" cost
5. Governor has veto power over energy emergency plans
    1. No response
    2. No response

N.G.A. Report

1. Separate energy emergency legislation
2. Procedures for determining and declaring a state of energy emergency
3. Specifies length of emergency powers until legislative approval required

4. Assigns agency responsibilities/Delegation of powers
5. Calls for federal/state/local coordination
6. Impending shortages are considered "emergencies"
7. General clause to "take necessary action"
8. Broad allocation/rationing/distribution/conservation provision
9. Suspension/modification of existing standards during energy snortage
10. Regulate hours/days of public, commercial and/or industrial establishments

O.D.O.E.: "Vermont Energy Emergency Plan (Draft)," Vermont State Energy Office, December 21, 1977

REVIEW OF DOCUMENTATION (1)

The Governor's energy emergency powers have been extended through April 1979. The legislature has been hesitant to make these powers permanent.

EMERGENCY POWERS TO THE GOVERNOR

Upon finding that an energy emergency exists or is imminent in Vermont, the governor may declare an energy emergency with respect to one or more energy resources, shall state the particulars thereof in reasonable detail, and may by executive order promulgate such orders, rules and regulations for the establishment and implementation of plans, programs, controls, priorities, quotas, allocations or other measures as he may deem

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1. Title Three Executive, Part 1, Chapter 1, pp 48 - 51.

necessary to meet and deal with the emergency in the following specific areas:

1. Allocation or rationing of energy resources or otherwise controlling, regulating or supervising the production, distribution or use of energy resources by any users, including such controls of business practices or policies as may be necessary to insure fair and equitable distribution or allocation of energy resources

2. Control and regulation of the hours or days during which public, commercial or industrial buildings or establishments may remain open

3. Suspension or modification of statutory or regulatory standards or controls affecting or affected by the use of energy resources

4. Plans and programs for emergency assistance to persons in the state whose health, safety or welfare may be imminently threatened as a direct or indirect result of the energy emergency

5. The establishment and implementation of plans, programs or agreements to coordinate Vermont's energy emergency initiatives with those of the federal government or of other states and localities or to comply with express federal directives

6. Assignment or reassignment of personnel and the adjustment of functions, duties and powers within or among state government agencies in furtherance of any of the foregoing plans, programs, controls, priorities, quotas, allocations or other measures

7. Establishment of systems to insure the continuous flow of information concerning the production, distribution and use of energy resources in Vermont

An energy emergency board has been created consisting of the members of the joint fiscal committee.

VIRGIN ISLANDS

C.R.S. Report: None

N.R.R.L. Not visited

N.G.A. Report: No entries

O.D.O.E.: Not included in list

NO DOCUMENTATION RECEIVED

VIRGINIA

C.R.S. Report: Under Section 56-250 of the Code of Virginia the Commission is empowered to authorize action by public utilities in a time of emergency or shortage. Working in cercert with the Governor, the Commission established priorities for the allocation of natural gas supplies during early 1977

N.R.R.I.

1. Yes
2. Required to file plans for rotating outage for each case
3. Yes, once
4. Some
    1. D/K
    2. No, but Governor's Office of Emergency Services does this
    3. Via F.A.C.
5. Governor issues Executive Order (Office of Emergency Services)
    1. Recommend that Governor step in with Executive Order; use emergency plans filed
    2. Governor is vested with emergency powers and can modify if not effective

Note: VSCC is constitutionally created and independent of

legislature and Governor, subject only to Supreme Court

N.G.A. Report: Amended to Disaster Act

O.D.O.E.: Interim Plan for the Emergency Management of Energy Resources

REVIEW OF DOCUMENTATION (1,2)

The Commission shall require that public electric utilities, owning and operating generating facilities, file monthly with the Commission for its review such information as it may deem necessary, which may include the following:

1. Various types of fuels received such as coal, oil, nuclear fuel or natural gas
2. The following information on fossil fuels:
    1. The supplier of the fossil fuel, the cost in cents per MBTU of the fuel, with a notation of whether the fuel was contracted for, purchased on the spot market or purchased from an affiliate of the electric utility
    2. The quantities of the various types of fossil fuels received stated in tons of coal, barrels of oil, millions of cubic feet of natural gas
    3. The average BTU content per pound, gallon or cubic foot received whichever is applicable
3. Total demurrage charges incurred at each generating plant le;Total cost of transportation incurred at each generating plant

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1. Sections 56 - 249.2 through 56 - 249.5 and 56 - 250.
2. "Investigation to determine priorities for available gas supplies," Case No. 19548, Commonwealth of Virginia State Corporation Commission, September 29, 1976.

4. The quantity of fuel consumed by each generation unit in the generating plant

5. The average cost of the fossil and nuclear fuel in cents per MBTU's consumed at each plant with and without handling charges

6. The monthly net heat rate expressed in BTU's per kilowatt-hour for each generating unit

7. The monthly net kilowatt-hour interchange

8. The monthly system kilowatt-hour sales

The Commission may authorize action by public utility in time of emergency or shortage.The Commission may require any public utility to file its plan for curtailment of service in a condition of emergency or shortage.

Priorities for Firm Service

1. Customer requirements for residential service, and requirement for human needs without alternate fuel capability (AFC)

2. Customer requirements under 1000 Mcf per peak month without AFC

3. Customer requirements of 1000 Mcf, or more, per peak month without AFC

4. Customer requirements for human needs with AFC

5. Requirements of customers with AFC that do not come under any other priority

6. Requirements for boiler fuel with total usage in excess of 1000 Mcf per peak month

RULES

1. Each gas distribution company shall develop a plan for curtailment of gas sales which complies with the above schedule of priorities

2. Each gas distribution company shall be responsible for the administration of its curtailment plan including the determination of alternate fuel capability

3. Interruptible gas service may be furnished, in management's discretion, as available gas supplies permit. However the Commission reserves the right to terminate, or alter, the sale of gas to interruptible customers if it is determined that such sales unreasonably affect the reliability of sales to firm customers

4. No customer receiving gas under a contract for interruptible service shall be changed to firm service without the prior approval of the Commission

5. Each gas company's present tariff terms and conditions, which govern the addition of new customers and new gas requirements, shall continue in effect

6. Each gas company shall continue conservation efforts in accordance with its conservation plan previously submitted to the Commission

7. Voluntary transfers of gas from one company to a second shall be reported in writing to the "Emergency Coordinator" and to the Director of the Commission's Division of Public Utilities

8. Transfers of gas will be directed, if necessary, by the Commission

9. Each gas company shall be authorized to grant exemptions to the priorities and rules adopted herein, for a period not to exceed 10 days without prior approval of the Commission

10. The Commission reserves the right to direct customers, have usage under Priorities 4 and 5, to use alternate fuel even though there is gas available, but such gas is required for public health, welfare, or safety for other uses

WASHINGTON

C.R.S. Report: Each regulated utility has an approved tariff on file with this Commission that specifies load curtailment procedures to be undertaken in an emergency situation. To date it has not been necessary to implement such procedures

N.R.R.I.

1. No
2. None
3. No
4. Yes
    1. Gas companies forego allocation voluntarily for sharing with midwest companies
    2. No response
       Note: Member of Northwest Power Pool
    3. Through a surcharge to the rate payer
5. Governor and Disaster Board
    1. No response
    2. No response

N.G.A. Report

1. Separate energy emergency legislation

2. Procedures for determining and declaring a state of energy emergency

3. Specifies length of emergency powers until legislative approval required

4. Establishes energy emergency advisory committee

5. Assigns agency responsibilities/Delegation of powers

6. Calls for federal/state/local coordination

7. Calls for curtailment priorities

8. Includes subpoena/deposition authority

9. Extraordinary authority depends on degree of energy emergency

10. Enforcement procedures

11. Civil penalties

12. System of exemptions/appeals and review

13. Conflict of law

14. Severability clause

15. Liability clause

D.O.E.: "Proposed Regional Guidelines for Curtailment Planning" and "Washington State Energy Curtailment Planning Papers"

REVIEW OF DOCUMENTATION (1)

Governor's energy emergency powers - Energy supply alert

1. The governor may, upon finding that a situation exists which threatens to seriously disrupt or diminish energy supplies to the extent that life, health, or property may be jeopardized, declare a condition or state of "energy supply alert"

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1. Title 43: State Government - Executive, Chapter 43.21F, Sections 060,070, Chapter 43.21G, Sections 010 - 900.

2. The condition of "energy supply alert" shall terminate after 60 consecutive days unless there is an occurence of either of the following:

   1. Extension by the governor based on a declaration by the president of the United States of a national state of emergency in regard to energy supply

   2. Declaration of the legislature by concurrent resolution of a continuing condition of "energy supply alert"

3. The conditions of an energy supply alert shall alternatively cease to exist upon a declaration to that effect by either of the following:

   1. The governor

   2. The legislature, by concurrent resolution

4. In a declared state of energy supply alert, the governor may, upon recommendation or approval of the energy advisory council

   1. Implement such programs, controls, standards, priorities, and quotas for the production, allocation, conservation, and consumption of energy

   2. Suspend and modify existing pollution control standards and requirements affecting or affected by the use of energy, including those relating to air or water quallity control

   3. Establish and implement regional programs and agreements for the purposes of coordinating the energy programs and actions of the state with those of the federal government and of other states and localities

WEST VIRGINIA

C.R.S. Report: Power to regulate curtailments; not applicable in 1977

N.R.R.I.

1. No, but assume it
2. No response
3. No
4. No response
5. Governor and Commissioner, not well defined
    1. No response
    2. No response

N.G.A. Report

1. Amended to Disaster Act
2. Procedures for determining and declaring a state of energy emergency
3. Establishes energy emergency advisory committee
4. Assigns agency responsibilities/Delegation of powers
5. Legislation applies to only 1 or 2 energy resources
6. Authority to implement federal programs
7. Limit maximum dealer sales

8. Enforcement procedures

9. System of exemptions/appeals and review

O.D.O.E.: "State of West Virginia Interim Plan for Emergency System Operations," July 1977

REVIEW OF DOCUMENTATION (1)

In the event of an emergency fuel shortage, the Commission recommends that the following steps be taken by each utility selling electric energy in West Virginia:

1. 50 days

    1. Curtail all non-essential uses of electrical energy at company-owned facilities

    2. Discontinue all economy sales to neighboring utility systems

2. 45 days

    1. Discontinue economic loading of generating plants and implement a loading procedure which will maximize the generation of electricity for load from a given quantity of coal

    2. Make public appeals to all wholesale and retail customers to reduce their electric consumption

    3. Discontinue all non-firm sales to neighboring utility systems except where the dropping of regular customers or severe equipment overload would result or where the transaction is part of a wheeling arrangement

3. 40 days supply

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1. Energy Emergency Operating Plan, prepared by the West Virginia PSC, January 20, 1978.

1. Make public appeals to wholesale and retail customers to further reduce their consumption of electricity. Notify large customers and customers who use electricity to process raw materials of impending mandatory curtailments

2. Make maximum purchases of energy from any source

3. Implement voltage reduction procedures as warranted

4. Request authorization from the proper authorities to curtail use of air pollution control facilities

5. Request authorization to utilize industrial owned generation equipment to supplement utility generation to the maximum extent possible

6. Blend or mix oil or natural gas with coal where plant design permits and when such alternate fuels are available

In the event the emergency fuel shortage continues to worsen, the Commission will require the following steps to be implemented by each utility selling electric energy in West Virginia:

1. 30 days

    1. All recommended steps above shall be enacted

    2. Request all customers to reduce their load by at least 10%

    3. Request reduction of all outdoor lighting to the minimum level necessary for life and property protection, elimination of all advertisement lighting except for a single luminaire to indicate commercial facilities open after dark, and reduction by 50% of the number of elevators and escalators

    4. Request curtailment of electrical energy for entertainment, recreational, and sporting activities

    5. Curtail industrial and commercial customers who have a monthly energy use in excess of 75,000 KWH's to levels approximately 90% of the customers' corresponding months' use in the previous year

    6. To the extent legal obligations permit, curtail all firm sales to other utilities to minimum possible levels

2. 25 days

    1. Curtail customers identified in 5. of 1. above to levels approximately 70% of the customers' corresponding months' use in the previous year

3. 20 days

    1. Curtail customers identified in 5. of 1. above to levels not less than those required for protection of human life and safety, protection of physical plant facilities and employees' security

4. 15 days

    1. Implement temporary rotating load interruption to all customers

WISCONSIN

C.R.S. Report: Nothing "extraordinary." This Commission had adequate authority and jurisdiction under existing law to issue emergency orders or take other emergency actions. This was not exercised during 1977

N.R.R.I. Not visited

N.G.A. Report: No entries

1. Possibly applied under Disaster Act
2. Provisions in Energy Act
3. Separate energy emergency legislation
4. Calls for establishment of energy emergency plans
5. Includes confidentiality of information
6. Includes subpoena/deposition authority
7. Specifically suspend/modify environmental control standards
8. Specifically regulate hours/days of educational facilities

O.D.O.E.: "Wisconsin Energy Emergency Contingency Plan," submitted to the Office of State Planning and Energy, Department of Administration, February 1978

NO DOCUMENTATION RECEIVED

WYOMING

C.R.S. Report: PSC has authority in the public interest to regulate adequacy, efficiency, safety, health, comfort, convenience, rates, securities (gas and electric) relating to utility facilities, supply, and the construction and operation thereof

N.R.R.L. Questionnaire

1. D/K,N/A
2. No response
3. Gas companies all have plans filed, but electric companies do not
4. No
5. No response
    1. No response
    2. No

N.G.A. Report: Possibly applied under Disaster Act

O.D.O.E.: No plan

NO DOCUMENTATION RECEIVED

PART B

CONTINGENCY PLANNING:

A SUMMARY OF A CONFERENCE

prepared by

George C. Smith, Jr.[1]

[1] The author, George Smith Jr., Professor, Department of Industrial and Systems Engineering at The Ohio State University, extends his appreciation to Richard J. Darwin of the NRRI, James Kennedy of the Ohio Department of Energy, and Charles E. Glasco and John Borrows of the Public Utilities Commission of Ohio for their cooperation in the development of the exercise and the planning of the conference.

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Summary and Analysis of a Conference on Contingency Planning

INTRODUCTION

The objective of this study was to identify and classify existing state programs for responding to energy emergencies caused by abnormal operating conditions. This task was divided into two specific activities:

(1) A national data collection effort was conducted through personal interviews with representatives of state regulatory or energy agencies in most of the contiguous states. This effort was conducted from October 1978 to January 1979. These responses were collected and compared to other reports compiled by the National Governor's Association (NGA), the Congressional Research Service (CRS), and the Ohio Department of Energy (ODOE).

(2) A conference on contingency planning was held at The Ohio State University on March 22, 1979 to demonstrate an alternative method for analyzing plans.

Research results are presented in two separate letter reports. The data collection and analysis described in activity 1 is presented in the first letter report entitled, "Summary and Analysis of State Contingency Plans" dated March 20, 1979. This document is the second letter report and summarizes the proceedings of the Conference on Contingency Planning described under activity 2.

Methodology

The initial project design outlined in the contract and described in more detail in the management plan called for a collection and analysis of plans relating to three types of energy emergencies - fuel shortages, capacity shortages, and catastrophies. However, as the study progressed, it became apparent that the distinction among the three emergencies

was inappropriate. Basically, fuel and capacity shortages are generation oriented, catastrophic emergencies are more likely to be transmission oriented. Most of the plans which were analyzed dealt with generation and the vast majority addressed fuel shortage issues. Consequently, no distinction was made among the three types of emergencies for the purposes of the conference or this report.

In the process of analyzing the interview results and the supplementary documentation, it became increasingly evident that what was being analyzed were plans as static documents. What was not being analyzed was the dynamic operating characteristics of these plans in terms of their feasibility for implementation or their effectiveness. The essential question is, after all, not, "What does the plan say?" but, "How does the agency or the utility which operationalizes the plan respond to an emergency?" Toward this end, it was decided that the best way to test the plan would be to simulate an emergency that would be more likely to reveal fundamental strengths and weaknesses of the plan's design. Given the time and budget constraints for this project, a limited simulation exercise was designed as a demonstration project. The simulation exercise formed a principle part of the Conference on Contingency Planning which was held during the last phase of the research project.

The scenario used in the limited simulation was designed by staff of The National Regulatory Research Institute (NRRI), the Ohio Department of Energy (ODOE), and the Public Utilities Commission of Ohio (PUCO). Due to time and budget constraints the option of a computer-based simulation exercise was disregarded. An additional constraint was that the entire exercise be completed as part of the one-day conference.

Since the objective was to demonstrate a "test" of The Ohio Contingency Plan, the emergency had to be severe enough to ensure that all stages of the plan were passed within the time allowed. To that end, the exercise used a coal strike during the summer peak-load period (starting July 1) and allowed only 10% of normal coal deliveries and no extraordinary energy purchases from outside the state were allowed. A copy of the exercise conditions and rules sent to each participant is presented in Appendix A.

It was agreed by the scenario planners that utility input was essential to the exercise. Therefore, representatives from three of the eight major investor-owned utilities operating in Ohio were invited. To add realism a municipal company and a rural cooperative were also invited. The utilities were enthusiastic about participating and readily agreed to supply the necessary information. A list of participants appears in Appendix B.

In order to increase the diversity of the exercise, two of the utilties which were selected operated in more than one state. One had a dominant industrial load and the other a heavy urban residential load. For ease in managing the exercise, each utility was treated as a single unit rather than attempting to simulate the behavior of the many generating plants within each utility system.

The contingency plan which was tested in this exercise was not the official Ohio plan. Rather, it was the first draft of a major revision which was being considered by ODOE, which had been developed in response to the difficulties experienced during the previous winter. The plan had essentially three stages: an energy alert phase, at 40 burn-days statewide, a voluntary curtailment phase at 30 burn-days, and a manditory 50% curtailment at 20 days. As part of the plan a new "Standard Burn Day" computation had been devised, and was used in the exercise. The draft plan appears in Appendix C. The complete agenda for the Conference is presented in Appendix D.

The Demonstration Exercise

At the start of the exercise, each of the utility representatives presented information regarding starting inventories of coal, fuel oil, etc. Their coal fired, and oil generating capacities and other starting conditions which had been requested through pre-conference correspondence. The municipal company's demand was duplicated in the estimate of the utility from whom it purchases power. The rural cooperative's generation and demand information was duplicated by the major utility with whom they have a formal working relationship. In large measure the exercise was conducted managing only three specific utility entities with the Ohio Department of Energy and the Public Utility Commission of

Ohio. The rural co-op and the municipal provided valuable input and made important comments when conditions affected their operation or customers. During the course of the exercise the representative from the U.S. Department of Energy provided valuable input from a national perspective.

Two time bases were maintained during the exercise, a chronological base and fuel inventory base. The fuel inventory was expressed in Standard Burn Days (SBD's). The plan began (T_0) on July 1, with each utility limited to a starting inventory of 60 SBD's of coal. (Actual inventories differed somewhat from this convention.) The total coal supply was about 9 thousand tons of coal to supply a mixed generating capacity of over 25,000 MW.

Given a 10% in-flow of coal, all utilities reached 40 SBD's inventory at about T_{22}. According to plan, all utilities requested permission of PUCO to implement their approved plans and to be released from economic dispatch. An entry to this effect was issued by the Commission. At the same time ODOE began collecting weekly inventory status reports from the utilities and issuing public information releases calling for voluntary conservation.

The utility and regulatory agency representatives generally agreed that little or no change in demand would be realized at this point in the scenario. This is particularly true since much of the load lost through winter conservation measures during the past coal strike was not returned. As a result, stage two of the ODOE draft plan (30 SBD's) was reached at about T_{34}. The group agreed that there was a high probability a loss in generation due to an unplanned outage could occur. This outage was assigned to the second-largest utility, and represented about 30% of its generation capacity. It was agreed that the remaining coal at that unit was no longer available.

At this point in the exercise, the group agreed that the Governor would intervene and declare an energy emergency. Included in this action would be a waiver of EPA controls and the release of environmentally restricted generating units. Utilities estimated the effect of this would be about 1%, that is 200 MW statewide. The entire amount of this savings was assigned to the smallest utility.

The utility representatives indicated that a serious economic consideration becomes operational at this point. Since mandatory sharing of energy is part of stage three, any activity by a single utility to conserve its coal supply at an increased cost would penalize its customers. This situation occurs because the supply of coal essentially becomes a statewide inventory at Stage 3, and individual utilities can not benefit from extraordinary conservation measures. Utility representatives attempted to factor in some voluntary conservation and the coal inventories behaved differentially from this time on due to differential load characteristics.

The utility with high residential load had also lost the 400 MW unit, it reached 20 SBD's at T_{41}. At that point the other two utilities had 26 and 25 days supply, respectively. However, Stage 3 of the Ohio plan is triggered by a state-wide criterion of 20 SBD's. The statewide total coal supply did not reach that 20 SBD level until T_{48}. The consensus was that by that time the utility which was in the "worst" condition would have been down to 16 days supply and was essentially out of operation.

All participants agreed at this point that the crisis stage had already passed, utilities would transmit as much energy as the grid would tolerate and "all three would go down gracefully". It was estimated that at T_{48}, shifting to 50% of demand by mandatory curtailment would probably mean that there were somewhat less than the actual 40 days (perhaps 36-38) remaining. Inability to control high or low voltage and other serious problems would probably quicken that interval until a disaster condition was reached.

As a result of the above situation, the group discussed alternative policy strategies. It was suggested that the Governor might have been requested to declare Stage 3 to be in effect when the first utility reached 20 SBD's - approximately T_{41}. Had that been the case, the state fuel supply would probably have been about 25 burn days, delaying the disaster point a week or more. More fundamentally, the group realized the importance of earlier action in the overall process of conserving the fuel resources.

Policy Issues

The experience of the limited simulation and the accompanying discussions pinpointed some potential problems in the draft contingency plan for Ohio. More to the point of the research, however, the exercise suggested some fundamental issues with respect to contingency planning which bear further study and consideration.

1. The draft revision of the Ohio Energy Emergency Contingency Plan was judged to be virtually ineffective when Stage 3 was finally triggered, since it was essentially "too late" to ward off serious system problems.
2. State-wide sharing of energy allows any single utility which buys high priced energy to conserve its coal supply. Effectively, that utility is financing other utilities who use less effective or inefficient measures to conserve their coal supplies.
3. The combination of policy issues (1) and (2) suggest that intermediate voluntary stages may not be cost-effective to the consumer and the least expensive strategy might be "business as usual" until mandatory curtailment and enforced sharing were ordered.
4. Utility and PUCO representatives agreed that non-fuel related costs cannot be recovered by utilities in Ohio. Thus utilities avoid implementing measures which are expensive until there are no other alternatives or action is mandated.
5. Utilities with multi-state service areas find it difficult to operate in an energy emergency.when states have different contingency plans. Since this is an intra-state problem, the remedy may require federal attention.
6. Public perception of the level of emergency is severely affected by the fluctuations in the reported amount of fuel when burn days are reported. (ex: When 50% curtailment is ordered, a 20 day supply becomes almost a 40 day supply.) Even more confusing is the fact that a utility may report the same supply for several days. Conditions such as this are not understood by the media or the public.

7. Release of utility plants from EPA regulations will have differential yields. The consensus in this exercise was that the net result would be minimal. Perhaps a systematic review of EPA regulations to assess their effect on fuel consumption is indicated. At least, some assessment of the effect of relaxation of standards ought to be undertaken to determine which could be expected to produce significant energy savings.
8. There is a problem with the level of specificity of the criteria which are monitored in contingency plans. Two specific examples were observed: (a) the state plan used a total statewide coal inventory threshold to trigger the different stages of the plan. This left a single utility in a critical shortage while others had large inventories. The statewide criterion assumes all are at the average; (b) Utility representatives agreed that their system performance is triggered by behavior of individual plants, whereas the exercise monitored the entire system. This suggests that monitoring ought to focus at least one system level lower than the level being managed.

Critique of the Limited Simulation Exercise

In a critique of the exercise, a number of comments were raised by the participants which addressed the "fidelity" of the simulation. They included: (1) there are actually different inventories of fuel and differential availabilities during the strike - 10% is unrealistic; (2) to be realistic, a simulation should deal at the single plant level; (3) alternative energy supplies are available from outside the state - elimination of these is unrealistic.

Other shortcomings which were perceived include: (4) actual cost items were not monitored in the exercise, even though the ramifications of economic issues are extensive; (5) there was no real way of addressing the question, "When will the Governor act and what will be the nature of such actions?"; (6) the problems of multi-state opeartion exist and were not included in this exercise.

On the positive side, ODOE was enthusiastic about the ability of the exercise to pinpoint significant problems in the draft revision of the Ohio plan. (Efforts are being made to address these problems before a final plan is proposed for adoption.) In evaluating the exercise as a demonstration probject, it should be emphasized that few, if any, of the eight policy issues which have been listed could have been identified by simply conducting an analysis of the written plan for Ohio.

Perhaps the major finding, then, is that a simulation exercise of this type provides a dynamic profile of the operational characteristics of a plan. Such a profile would be of considerable value in comparing alternative state contingency plans.

RECOMMENDATIONS FOR DOE

1. Some policy guidelines should be developed for utilities with multi-state service areas. In doing so, the DOE should work in concert with the affected utilities and representatives from the relevant state agencies.
2. States should be instructed to request a federal response as early in the emergency as possible. DOE should also investigate its internal capacity and preparation for responding to states which might be at the 20 SBD level when first requesting federal intervention.
3. National standards ought to be developed for indices of performance to be used in monitoring energy emergencies. A standard reporting mechanism ought to also be developed to support the monitoring effort so that DOE might anticipate state level problems.
4. A federal public education and public relations program should be undertaken to explain the behavior of an inventory measure based on burn days as compared to calendar time.
5. A simulation exercise could be more efficient and more effective if it were computer-aided. (Computation errors during the exercise were disruptive and did cause time-consuming delays.) DOE should consider developing a computer-aided simulation exercise for the specific purpose of testing and comparing state contingency plans.

6. Whether a computer-aided simulation model is developed or not, DOE should employ a simulation exercise of this type on several state plans to further assess the use of the simulation technique for comparing plans.
7. Finally, the participants observed that all contingency plans will ultimately fail unless the actual source of the problem is abated. It was suggested that the federal government should concentrate on emergency measures to solve the problem as well as constructing plans to delay the onset of a disaster.

APPENDIX A

Conference on Contingency Planning
March 22, 1979

Fawcett Center for Tomorrow
Room 79K
Columbus, Ohio

9:00 am to 4:00 pm

OPERATIONALIZING CONTINGENCY PLANS

This exercise is designed to trace a sequence of events which might occur in the event of an unexpected and significant interruption of coal supplies during a summer season (only through September). We hope to contrive a representative situation, but in the interest of uniformity and efficiency some simplifying assumptions are being made.

We are asking the invited utility representatives to bring with them on the day of the conference the information and estimates of contingency impacts which are necessary to run the exercise. The exercise condition and operation are described below.

I Exercise Conditions

1. Start time - July 1
2. Start with 60 days supply of coal
3. Start with your normal amount of stored fuel oil
4. Start with your normal coal fueled generating capacity
5. Start with your normal oil fueled generating capacity
6. Assume summer 1978 demand from residential, industrial, and commercial customers
7. Assume summer 1978 forced outages will occur

8. Assume only normal contracted-for energy purchases will be available through the interconnection (Identify amounts and sources)

9. Assume minimal inadvertant energy flows will enter through the interconnections

10. Coal deliveries will be 10% of normal

11. Oil deliveries will be normal (no increase)

12. Electric time must remain constant

II Exercise Operations

1. The exercise will begin with a collection of the necessary information items from the utility representatives

2. We will proceed on a week-by-week or day-by-day basis as the situation demands.

3. Consumption and fuel inventories will be synthesized

4. As the situation deteriorates, strategic decisions will be described and recorded.

5. As the strategic decisions are implemented, the group will seek consensus as to the impacts of the measures.

6. The exercise will progress until federal intervention becomes necessary.

APPENDIX B

Conference on Contingency Planning

March 22, 1979

Fawcett Center for Tomorrow
2400 Olentangy River Road

Final List of Conference Participants

1. Henry Bell, Superintendent, Columbus Division of Electricity
2. Joseph Giglierano, Ohio Department of Energy
3. Richard J. Darwin, The National Regulatory Research Institute
4. Eugene Glasco, Chief Electric Section - Compliance Division, PUCO
5. Charles Jack, Manager, Power Supply Division and Chief Engineer, Buckeye Power Cooperative
6. Douglas N. Jones, Director, The National Regulatory Research Institute
7. Robert Kelly, Vice President, Transmission and Generation, Columbus & Southern Ohio Electric Co.
8. James Kennedy, Ohio Department of Energy
9. Donald Nofsinger, Vice President, Loading, American Electric Power Company
10. William Smith, U.S. Department of Energy, Economic Regulatory Admin., Office of Utility Systems
11. George Smith Jr., Professor, Department of Industrial and Systems Engineering, Ohio State University
12. Robert Wiwi, Vice President, Operations, Cincinnati Gas and Electric Co.

electricity emergency rules

1551:2-5-01 definitions

(a) "utility" shall mean ANY PERSON, FIRM, CO-PARTNERSHIP, VOLUNTARY ASSOCIATION, JOINT-STOCK ASSOCIATION, COMPANY, CORPORATION, MUNICIPALITY, GOVERNMENTAL OR POLITICAL SUBDIVISION, WHEREVER ORGANIZED OR INCORPORATED, ENGAGED IN THE BUSINESS OF SUPPLYING ELECTRICITY FOR LIGHTING, HEAT OR POWER PURPOSES TO CONSUMERS WITHIN THIS STATE.

(b) "priority uses" shall mean the ~~minimum~~ amount of electrical power necessary for protection of the public's health and safety, and for prevention of unnecessary or avoidable damage to property, at:

(1) residences (homes, apartments, nursing homes, institutions, and facilities for permanent residence or transients);

(2) hospitals;

(3) medical and human life support systems and facilities;

(4) electric power generating facilities and central heating plants serving the public;

(5) telephone, radio, ~~television~~ and newspaper facilities;

(6) local and suburban transit systems and air terminal facilities;

(7) police and fire fighting facilities;

(8) water supply and pumping facilities;

(9) sanitary service facilities for collection, treatment, or disposal of community sewage:

(10) federal facilities essential to national defense;

(11) production facilities for natural gas, artificial or synthetic gas, propane, and petroleum fuel, fuel refineries;

(12) pipeline transmission and distribution facilities for natural gas, artificial, or synthetic gas, propane, and petroleum fuels;

(13) coal mines and related facilities;

(14) production, distribution, and storage facilities for dairy products, meat, fish, poultry, eggs, fresh produce, bread, rolls and buns;

(15) buildings and facilities limited to uses protecting the physical plant and structure, appurtenances, product inventories, raw materials, livestock, and other personal or real property;

(16) and such other similar uses as may be determined by the public utilities commission of Ohio (hereinafter "puco").

(c) "non-priority uses" shall mean all uses of electricity other than priority uses.

(d) "customer" shall mean that person or entity legally responsible to pay for electric services OR WHO COMSUMES ELECTRIC POWER AT A SPECIFIED LOCATION.

~~(e) "user" shall mean the person or entity who consumes electric power at a specified location.~~

(E) "utility burn days (ubd)" shall mean the burn days of coal for an individual electric utility for electric power generation for load as calculated by each such utility ACCORDING TO THE METHODOLOGY AND ASSUMPTIONS PRESCRIBED BY THE OHIO DEPARTMENT OF ENERGY.

(F) "statewide burn days (sbd)" shall mean the statewide burn days of coal for utility electric power generation, based upon reports submitted by each individual utility to THE OHIO DEPARTMENT OF ENERGY AND THE PUBLIC UTILITIES COMMISSION OF OHIO.

(G) "UTILITY ADVISORY GROUP" SHALL MEAN THE UTILITY REPRESENTATIVES AS PROVIDED FOR UNDER 1551:2-5-02(E).

EFFECTIVE:

PROMULGATED UNDER: R.C.CH. 119
RULE AMPLIFIES: SECTION 1551.09

CERTIFICATION _____

_____

1551:2-5-02 general provisions

(a) the requirements of chapter 1551:2-5 of the Ohio administrative code are keyed to remaining days' supply of coal for electrical generation OR CAPACITY SHORTAGES. it is expected that utilities will take all prudent measures prior to reaching mandatory stages of action supply levels under 1551:2-5. once the mandatory stages of action are reached, utilities are required to initiate and to continue implementation of requisite actions until directed to do otherwise. ~~each utility shall maximize power generation while minimizing its coal consumption~~.

(b) the institutional and regulatory relationship between jurisdictional utilities and the puco remains intact.

(c) pursuant to section 1551.08(b) of the Ohio revised code, measures required by the governor under these rules pursuant to 1551:2-5-03 of the Ohio administrative code, shall prevail over any existing measures of puco inconsistent with said rules.

(d) the actions required of electric utilities in chapter 1551:2-5 of the Ohio administrative code shall be implemented by the utilities. All actions required in chapter 1551:2-5 of the Ohio administrative code are intended to be implemented by each utility to the extent reasonably possible.

(e) AN ADVISORY GROUP OF REPRESENTATIVES OF THE OHIO ELECTRIC UTILITIES SHALL BE AVAILABLE TO ADVISE THE DIRECTOR OF THE OHIO DEPARTMENT OF ENERGY AND ITS STAFF AS TO THE NATURE OF ELECTRIC SUPPLY PROBLEMS.

(f) WHEN ANY UTILITY FILES A REQUEST WITH THE OHIO PUBLIC UTILITIES COMMISSION TO ENACT ITS EMERGENCY PLAN, ALL OHIO UTILITIES HAVING A GENERATING CAPACITY OF FIFTY MEGAWATTS OR MORE SHALL FILE A REPORT OF ELECTRIC SUPPLY ADEQUACY WEEKLY WITH THE OHIO DEPARTMENT OF ENERGY, IN THE FORM PRESCRIBED BY THE OHIO DEPARTMENT OF ENERGY. UPON REQUEST OF THE DIRECTOR OF THE OHIO DEPARTMENT OF ENERGY, THE REPORT OF ELECTRIC SUPPLY ADEQUACY SHALL BE FILED DAILY.

(G) IF FUEL SUPPLY FOR ELECTRICAL GENERATION IS CONTINUING TO DECREASE AND IT IS DETERMINED FUEL SUPPLIES OR GENERATING CAPACITY ARE INADEQUATE FOR THE FORESEEABLE FUTURE TO CONTINUE TO PROVIDE FOR THE FULL REQUIREMENTS OF CUSTOMERS' USES, THE GOVERNOR SHALL REQUIRE THAT THE APPROPRIATE ACTION BE TAKEN AS REQUIRED UNDER 1551:2-5-04.

(H) the director of odoe ~~may~~ SHALL notify the governor when, based on the information available to him, he believes that the current and foreseeable shortage of electricity no longer constitutes a threat to life, property, public health, safety, or welfare.

EFFECTIVE: _____

PROMULGATED UNDER: R.C.CH. 119
RULE AMPLIFIED: SECTION 1551.09

CERTIFICATION _____

_____

1551:2-5-03 enforcement on governor's instruction

(a) no rule shall be implemented and no person shall be penalized under any 1551:2-5 rule until the governor by executive order, during a declared energy emergency, specifically designates by rule nubmer and title which rule or rules are to be implemented and enforced and fixes the date and time after which the named rule or rules shall be implemented or enforced.

(b) alternatively, the governor may request, under section 1551.09 of the Ohio revised code, that the puco issue and enforce orders effecting the implementation of these rules.

PROMULGATED UNDER: R.C.CH. 119
RULE AMPLIFIED: SECTION 1551.09

EFFECTIVE: _____

CERTIFICATION _____

_____

(A) VOLUNTARY CURTAILMENT

(1) WHEN THE SBD REACHES 40 DAYS OR UPON THE RECOMMENDATION OF THE UTILITY ADVISORY GROUP, EACH UTILITY WHICH HAS NOT IMPOSED MANDATORY CURTAILMENTS SHALL INCREASE ITS EFFORTS TO EFFECT VOLUNTARY CONSERVATION OF AT LEAST 25 PERCENT OF ALL NONPRIORITY USE OF ELECTRICITY.

(a) APPEALS SHALL, WHERE APPROPRIATE, INCLUDE SUGGESTIONS FOR ACHIEVING SUCH REDUCTIONS WHICH SHOULD INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

i. REDUCE OUTDOOR LIGHTING.

ii. REDUCE GENERAL INTERIOR LIGHTING LEVELS TO MINIMUM LEVELS.

iii. REDUCE SHOW WINDOW AND DISPLAY LIGHTING TO MINIMUM LEVELS TO PROTECT PROPERTY.

iv. REDUCE THE NUMBER OF ELEVATORS OPERATING IN OFFICE BUILDINGS DURING NON-PEAK HOURS.

v. REDUCE ELECTRIC WATER HEATING TEMPERATURE TO MINIMUM LEVEL.

vi. MINIMIZE WORK SCHEDULES FOR BUILDING CLEANING AND MAINTENANCE, RESTOCKING, ETC., WHICH WOULD REQUIRE OFFICE OR COMMERCIAL AND INDUSTRIAL FACILITIES TO BE OPEN BEYOND NORMAL WORKING HOURS.

vii. MINIMIZE ELECTRICITY USE BY MAINTAINING A SPACE HEATING TEMPERATURE OF NO LESS THAN 78° F. BY OPERATION OF COOLING EQUIPMENT AND NO MORE THAN 68°F. BY OPERATION OF HEATING EQUIPMENT.

viii. ENCOURAGE, TO THE EXTENT POSSIBLE, DAYTIME SCHEDULING OF ENTERTAINMENT AND RECREATIONAL FACILITIES.

(b) EACH UTILITY SHALL NOTIFY THE GENERAL PUBLIC OF THE SUPPLY LEVEL THROUGH THE ISSUING OF PERIODIC BULLETINS, AT LEAST WEEKLY, WHICH WILL PROVIDE ITS CUSTOMERS INFORMATION ON:

i. FUEL SUPPLY LEVEL.

ii. ACTIONS WHICH WILL BE REQUIRED OF CUSTOMERS IF IT BECOMES NECESSARY TO INITIATE MANDATORY CURTAILMENT OF ELECTRIC POWER AND THE PRECAUTIONS AND PROCEDURES TO BE FOLLOWED PRIOR TO AND DURING THE PERIOD ELECTRIC SERVICE IS RESTRICTED.

iii. PROCEDURES TO BE FOLLOWED BY CUSTOMERS WISHING TO SUBSTANTIATE A CLAIM FOR PRIORITY USE AS DEFINED IN 1551:2-5-01.

iv. THE ODOE SHALL CALCULATE THE "SBD" (STATEWIDE BURN DAYS) AND MAKE IT AVAILABLE TO THE GOVERNOR, THE PUCO, THE UTILITIES, AND THE PUBLIC.

v. EACH UTILITY AS PART OF ITS REPORT OF ELECTRIC SUPPLY ADEQUACY SHALL PROVIDE TO ODOE ITS ANTICIPATED AND ACTUAL LOAD IN KILOWATT HOURS CONSUMED AND ESTIMATED COAL TONNAGE SAVINGS RESULTING FROM LOAD REDUCTION OR OTHER MEASURES.

vi. THE PUCO OR ODOE MAY BE REQUESTED TO ENCOURAGE ALL UTILITIES TO PURCHASE AND TO SHARE POWER AMONG THEMSELVES TO AID IN ALLEVIATING EXISTING POWER SHORTAGES AND TO PREVENT POSSIBLE FUTURE POWER SHORTAGES.

vii. IN ADDITION, ALL UTILITIES SHALL REDUCE INTERNAL CONSUMPTION OF ELECTRIC POWER TO THE MAXIMUM DEGREE POSSIBLE, CONSISTENT WITH SAFE, EFFICIENT OPERATION. THE USE OF ELECTRICITY ON PREMISES SHALL BE CURTAILED INCLUDING PARKING AND LARGE AREA LIGHTING AND INTERIOR LIGHTING, EXCEPT LIGHTING ESSENTIAL FOR SECURITY OR SAFETY.

viii. EACH UTILITY OPERATING GENERATING CAPACITY SHALL BEGIN THE DISPATCH OF POWER PLANTS IN A MANNER THAT WOULD MAXIMIZE, TO THE EXTEND POSSIBLE, THE GENERATION OF ELECTRICITY FROM A GIVEN QUANTITY OF COAL.

(B) MANDATORY CURTAILMENT - STAGE 1

(1) WHEN THE SBD REACHES 30 DAYS OR UPON THE RECOMMENDATION OF THE UTILITY ADVISORY GROUP, ALL CUSTOMERS SHALL DISCONTINUE NONPRIORITY USE OF ELECTRICITY ON TWO 92) DAYS EACH WEEK. EACH UTILITY SHALL INFORM CUSTOMERS OF THE DAYS THAT SERVICE FOR NONPRIORITY USE SHALL BE DISCONTINUED.

(a) IN ADDITION TO DISCONTINUING NONPRIORITY USE OF ELECTRICITY ON SPECIFIED DAYS, CUSTOMER USE OF ELECTRICITY SHALL BE FURTHER CURTAILED AS FOLLOWS:

i. ALL NONPRIORITY OUTDOOR LIGHTING IS PROHIBITED, EXCEPT LIGHTING ESSENTIAL FOR SECURITY OR SAFETY.

ii. ALL PUBLIC, COMMERCIAL, AND INDUSTRIAL BUILDINGS SHALL MINIMIZE ELECTRICITY USE BY DISCONTINUING SPACE COOLING AND BY MAINTAINING A SPACE HEATING TEMPERATURE OF NO MORE THAN 60°F. BY THE OPERATION OF ELECTRIC HEATING EQUIPMENT, EXCEPT WHERE HEALTH REQUIREMENTS OR EQUIPMENT PROTECTION DEEM SUCH MEASURES TO BE INAPPROPRIATE.

iii. ALL PUBLIC, COMMERCIAL, AND INDUSTRIAL BUILDINGS ARE TO REDUCE INTERIOR LIGHTING TO THE MINIMUM LEVELS ESSENTIAL FOR CONTINUED WORK AND OPERATIONS.

(b) EACH UTILITY OPERATING GENERATING CAPACITY SHALL, WHEREVER POSSIBLE, SWITCH THAT CAPACITY TO AN ALTERNATE FUEL OTHER THAN COAL, PROVIDED THAT:

i. THE UTILITY HAS INFORMED ODOE; AND

ii. THE ODOE HAS CONFIRMED TO THE UTILITY THAT THE SPECIFIC ALTERNATE FUELS ARE NOT THEMSELVES IN SHORT SUPPLY.

(c) EACH UTILITY OPERATING GENERATING CAPACITY SHALL, IN COORDINATION WITH OTHER ELECTRIC UTILITIES AS MAY BE ORDERED BY THE PUCO OR THE GOVERNOR, INITIATE COAL CONSERVATION DISPATCH ON A STATEWIDE BASIS TO ARREST, TO THE EXTENT POSSIBLE, THE DECLINE OF REMAINING FUEL SUPPLY OF THOSE POSER PRODUCTION PLANTS MOST THREATENED WITH FUEL EXHAUSTION BY:

i. INCREASED LOAD DISPATCH FROM PLANTS WITH MORE SECURE FUEL SUPPLY, AND

ii. INCREASED SALES OF POWER FROM PLANTS WITH GREATER FUEL SUPPLIES TO OTHER UTILITIES WITH LOWER FUEL SUPPLIES.

(d) EACH UTILITY SHALL REPORT TO ODOE AS PART OF ITS REPORT OF ELECTRIC SUPPLY ADEQUACY AND PUCO ITS DAILY COAL BURN, GENERATION POWER PURCHASES BY SOURCE, COAL DELIVERIES, AND ITS COAL BURN DAYS.

(e) EACH UTILITY SHALL REPORT TO ODOE AS PART OF ITS REPORT OF ELECTRIC SUPPLY ADEQUACY ITS ANTICIPATED AND ACTUAL LOAD IN KILOWATT HOURS CONSUMED AND ESTIMATED COAL TONNAGE SAVINGS RESULTING FROM LOAD REDUCTION OR OTHER MEASURES.

(f) THE PUCO MAY BE REQUESTED TO:

i. MONITOR AND VERIFY EACH OHIO UTILITY'S COAL STOCKPILE, BURN DAY LEVEL, AND POWER PURCHASES ON A DAILY BASIS:

ii. DETERMINE EACH DAY THE WEIGHTED STATEWIDE DAYS'SUPPLY OF COAL FOR ALL OHIO UTILITIES: AND

iii. ASSURE THAT EACH UTILITY USES NON-COAL FUELS FOR GENERATION AND PURCHASES POWER THROUGH THE GRID TO THE EXTENT POSSIBLE, CONSISTENT WITH SYSTEM STABILITY AND RELIABILITY AND THE AVAILABILITY OF NON-COAL FUELS.

(C) MANDATORY CURTAILMENT - STAGE 2

(1) WHEN THE SBD REACHES 25 DAYS OR UPON THE RECOMMENDATION OF THE UTILITY ADVISORY GROUP, ALL CUSTOMERS SHALL DISCONTINUE NONPRIORITY USE OF ELECTRICITY ON THREE (3) DAYS OF EACH WEEK: EXCEPT CUSTOMERS WHO NORMALLY OPERATE SEVEN DAYS PER WEEK SHALL DISCONTINUE NONPRIORITY USE THREE DAYS IN ONE WEEK AND FOUR (4) DAYS THE NEXT WEEK. EACH UTILITY SHALL INFORM CUSTOMERS OF THE DAYS THE SERVICE FOR NONPRIORITY USE SHALL BE DISCONTINUED. ALL ACTIONS FROM STAGE 1 SHALL CONTINUE.

1551:2-5-04

(D) MANDATORY CURTAILMENT - STAGE 3

(1) WHEN THE SBD REACHES 20 DAYS OR UPON THE RECOMMENDATION OF THE UTILITY ADVISORY GROUP, CUSTOMERS SHALL DISCONTINUE ALL NON PRIORITY USE OF ELECTRICITY ON ALL DAYS OF EACH WEEK.

1551:2-5-05 penalties

(A) persons failing to comply with the requirement of this chapter are subject to the criminal penalties set forth in section 1551.09(E) of the Ohio revised code.

EFFECTIVE:

PROMULGATED UNDER: R.C.CH. 119
RULE AMPLIFIES: SECTION 1551.09

CERTIFICATION _____

_____

ASSUMPTIONS WHICH MUST BE MADE IN BURN DAY CALCULATIONS

Assumptions	Explanations/Examples
Energy Forecast	
• project normal consumption for current weather conditions.	• eg. if current weather was cooler or warmer than normal the load forecast should have to be adjusted to reflect the impact of temperature sensitive load.
• projected conservation is not counted in burn day estimations.	• neither mandatory nor voluntary conservation is considered when preparing energy forecast.
	• "normal" monthly consumption patterns are assumed to project total available coal supply.
Power Exchange	
• purchase power is assumed to be unavailable or uncertain in the crisis period and is excluded for burn day calculations.	• "purchase power" means power being purchased from other systems on a day-to-day basis.
• firm or contracted power/energy sales are included in burn day calculations. The seller who has contracted to provide a particular level of service treats this long-term commitment (one week or longer) as part of his load. The buyer who has contracted for service reduces the load he must serve by this amount. In short, all commitments are assumed to be met.	• for example, if utility A had long-term obligations to provide 200 MW to utility B and to receive 800 MW from utility C, it would add the MWH equivalent of 200 MW to forecast and subract the MWH equivalent of 800 MW from its forecast.
• economy and emergency purchases are not considered in calculations.	

Generation from non-coal fuels

- figure in only anticipated MWH of non-coal generation.
- only the expected use of gas turbine, nuclear or oil fired units should be considered. The scheduled outage time of units should be considered as well as the economics of unit operation.

Unit Outages

- count coal as it is anticipated that coal will be available to available generating units.
- if a single unit plan is expected to be out of service for the duration of the outake that cannot be considered part of the utilities usable coal supply.
- if one or more units of a multi-unit plant are out of service that coal is considered to be part of the coal supply of the units which are in service.
- the number that is being developed is coal available for burning. That is, expected burn days for that plant. Coal which cannot be recovered should not be considered.

Jointly owned units

- use your utility's share of the coal pile at a jointly owned plant and your utility's share of the generation of the jointly owned units in preparing burn day estimates.

Efficiency of coal burn

- assume current burn efficiency (Tons/MWH).

CALCULATION OF BURN DAYS

Utility system MWH forecast (normal/weather adjusted for the month.)
+firm sale commitments
-firm purchase commitments
-anticipated MWH production from non-coal sources
coal-fired requirement (MWH/month)

$$\frac{\text{coal-fired requirement (MWH/month)}}{\text{days in month}} \times \text{average burn rate (tons/MWH)} = \text{daily requirement (tons/day) for this month.}$$

$$\frac{\text{utility coal pile available (tons)}}{\text{daily requirement (tons/day)}} = \text{utility burn days}$$

For N utilities:

$$\frac{\text{(Coal Available}^{2}\text{ Utility 1} + \text{Coal Available Utility 2} + \ldots + \text{Coal Available Utility N)}}{\text{(Daily Requirement}^{2}\text{ Utility 1} \quad \text{Daily Requirement Utility 2} + \ldots + \text{Daily Requirement Utility N)}} = SBD_1$$

$$\frac{\text{(Coal Available Utility 1} \quad \text{Coal Available Utility 2} + \ldots + \text{Coal Available Utility N)}}{\text{(Projected Maximum Capable Production}^{3}\text{ Utility 1} + \text{PMCP Utility 2} + \ldots + \text{PMCP N)}} = SBD_2$$

1. Expressed in tons.
2. Expressed in tons/day.
3. Expressed in tons/day.

APPENDIX D

AGENDA

CONFERENCE ON CONTINGENCY PLANNING

Thursday, March 22, 1979
9:00 a.m. - 3:00 p.m.
Fawcett Center for Tomorrow
2400 Olentangy River Road
Columbus, Ohio 43210

9:00 - 9:15	Welcome and Introduction — Douglas N. Jones
9:15 - 9:30	Project Review — George Smith
9:30 - 10:15	National Study on Contingency Planning - A Review George Smith and Lynette Krysty
10:15 - 10:30	Coffee Break
10:15 - 3:00	Fuel Shortage Exercise — George Smith
	• Description of the Exercise
	• Establish Starting Conditions
	• Begin Time Sequence Exercise
12:00 - 1:00	Lunch
1:00	• Continue Exercise Until Intervention Required
3:00 - 3:15	Coffee Break
3:00 - 4:00	• Exercise Critique and Recommendations