

MANAGEMENT MEMO

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DATE ISSUED: JUNE 18, 2001
EXPIRES: WHEN RESCINDED
ISSUING AGENCY: DEPARTMENT OF INFORMATION TECHNOLOGY

SUBJECT:
INFORMATION TECHNOLOGY COMMUNICATION AND CONSERVATION PLAN FOR
ENERGY MANAGEMENT

REFERENCES:
MANAGEMENT MEMO 01-05
MANAGEMENT MEMO 00-11

INTRODUCTION

The State of California is facing an unprecedented period of electricity shortages.

During periods in which electrical demand puts strains on the electric systems of the State's utilities, the California Independent System Operator (CAISO) may declare an Electrical Emergency. When the CAISO declares an Electrical Emergency, the Department of General Services/Office of Energy Assessments (DGS/OEA) will notify all departments, universities and community colleges and provide appropriate conservation information and actions to be taken as outlined in Management Memo 01-05. The Management Memo may be downloaded from the DGS Energy Website at <http://www.dgs.ca.gov/energy>.

Notification will be sent from DGS Energy Info via E-mail/E-Pager and other means to the "Primary Contacts" (Department's Energy Management Teams) identified and submitted by departments to DGS/OEA.

A department's "Primary Contact" list should include Directors, Chief Deputy Directors, Chief Information Officers, Communication Officers, Other Technical Staff, Facility Managers, Plant Managers, Energy Managers, Cogeneration Operators, and Third Party Cogeneration Operators. This list is not necessarily inclusive and should include back-ups or other personnel based on an individual department's determination of how to alert and mobilize the staff within their own organization. "Primary Contacts" should in turn alert personnel under their responsibility as outlined/described in their internal Emergency Management Plan called for by Executive Order D-15-00. DGS Energy Info emergency notifications may be confirmed at the DGS website at <http://www.dgs.ca.gov/energy>.

While departments may receive Electrical Emergency information from other sources (CAISO, Office of Emergency Services, and local utility representatives), DGS/OEA is to be considered a trusted notification authority. Departments should carefully examine all messages they receive. Information sent by DGS/OEA to departmental "Primary Contacts" should be forwarded in its entirety, without changes, to other staff within their department. If departments, by nature of their operations, need to take additional conservation measures above those outlined by DGS/OEA, that information should also be communicated.

CAISO declarations can be made in progressive steps depending upon the amount of reserve generation available to the California electrical grid. Departments are required to comply, to the fullest extent possible, with all direction/instruction provided by DGS/OEA at each progressive stage of Electrical Emergency.

Pursuant to Senate Bill 1, Chapter 508, Statutes of 1995 and Assembly Bill 1686, Chapter 873, Statutes of 1999, the Department of Information Technology (DOIT) is charged with the oversight responsibility for California State information technology (IT) activities. It is DOIT's statutory responsibility to define, implement, and maintain an oversight framework and methodology to improve the State's overall management and use of IT during electrical shortages. In partnership with the State entities, DOIT will

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develop and continuously review the framework and methodology, and as necessary and appropriate, make revisions to ensure ongoing quality and responsiveness. DOIT directs State entities' Chief Information Officers to comply with the following actions at each CAISO Emergency Notification.

CONSERVATION ACTIONS REQUIRED AT EACH CAISO STAGE

STANDARD OPERATIONS AND STAGE 1 PROCEDURES

State facilities should be operated in an energy efficient manner. Under Standard Operations and Stage 1, routine energy conservation measures described below should be followed.

General

- At the end of the workday or when not needed, employees should turn off lights, computers, monitors, printers, and scanners, except for equipment designated as 24/7 or for which there is a specific need for after hours operations (e.g., e-mail mail servers, fax machines, or other essential equipment).

Hours of Operation

- State owned and leased buildings will be operational from 6:00 AM through 5:30 PM. All non-essential lighting and other electrical loads shall be minimized outside of normal building hours. Agencies are expected to make a reasonable determination as to what functions must continue outside of these hours.
- Facilities/organizations with employees on alternate workweek schedules will need to accommodate these schedules even if outside of normal hours of business.
- Data Center Operations should maintain ambient temperature settings at manufacturer specification maximums.

Computers and IT Equipment

- All video monitors and personal computers shall be set for automatic power-down ("sleep") mode after five minutes of non-operation (all Energy Star monitors should have this feature available and can be turned on using the "Display" option of the desktop "Control Panel."). Note that the installation of screen savers by itself does not reduce power consumption and is not a substitute.
- All copiers and printers that have an automatic power-down or "Energy Saver" feature shall have this feature enabled.

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STAGE 2 PROCEDURES

Under a Stage 2 Emergency, utility service to interruptible loads is subject to curtailment. State agencies are directed to adopt conservation measures to the degree possible at each State site without unduly compromising agency operations. All Standard Operations and Stage 1 procedures shall remain in place. In addition, implement the following emergency conservation measures.

Computers and IT Equipment

- Use of photocopiers and printers shall be consolidated. Where possible, redundant printers and copiers shall be turned off and work shall be directed to nearby machines. Major copy and print jobs should be postponed when possible.

STAGE 3 PROCEDURES

Under a Stage 3 declaration, electricity supply is critically short and more drastic actions are called for. The CAISO declares a Stage 3 to secure additional resources; rotating outages may occur or are occurring. Under a Stage 3, the CAISO may direct the electric utilities to cut firm customer load by initiating rotating outages, in accordance with each utility's Electrical Emergency Plan. The CAISO will resort to this step only when voluntary customer conservation efforts and curtailment of interruptible load are insufficient to reduce demand to a level that can be met by the available supply of power with appropriate safety margins. Such action may be necessary in order to avoid a catastrophic collapse of the interconnected electrical system. In a rotating outage, selected distribution circuits are sequentially shut off in a controlled fashion for a period of approximately one hour and fifteen minutes, in order to bring electricity demand on the system to within acceptable operational limits. Each section of the grid, once shut off and then restored to service, is placed at the bottom of the queue as the next section is turned off in the sequence.

It is crucial to note that (1) the rotating outages are limited in duration, lasting approximately one hour and fifteen minutes, and (2) they will involve the minimum amount of interruption to service necessary to preserve the overall operation of the electricity system. Barring specific instructions to the contrary and to the extent possible, State agencies shall keep employees at their workplaces and maintain normal business hours during the period of rotating outages to ensure their safety.

For State agencies, this means we must take actions that are likely to impinge on business operations. All Stage 1 and Stage 2 procedures shall remain in place. In addition, implement the following emergency conservation measures. Any conservation measures that can be implemented during this period will ease the load on the system and minimize the depth and duration of the firm service outages.

Computers and IT Equipment

- Turn off personal computers and monitors that are not essential to conducting state business. Each work place should maintain at least one computer and its e-mail server on in order to receive critical communications. The intended recipient's email address should be on the agency's e-mail contact list submitted to the DGS Energy Control Center for energy emergency information and notification.

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- Turn off monitors for file and application servers when not used.
- Turn off test or laboratory equipment that is not essential.
- Turn off other non-essential IT equipment, including printers, scanners, copiers, and other peripheral equipment.

IF YOUR FACILITY EXPERIENCES AN OUTAGE, TAKE THE FOLLOWING STEPS

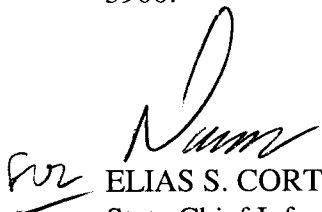
- Turn off any equipment that was still in service (except IT equipment that is operating on its own uninterruptible power supplies) in order to avoid power surges when service is restored. Leave a task light turned on so that you can determine when service is restored.

IN THE EVENT OF A MORE EXTENDED OUTAGE

It is anticipated that State personnel will have advanced notification of a Stage 3 so that appropriate measures can be taken to reduce load, protect personal safety, and protect State assets (including IT assets and data). In the event of a more extended outage, which could result from storm damage to the system, earthquake or other contingencies, State personnel should follow the steps outlined in their agencies' Emergency Response Plan.

INFORMATION TECHNOLOGY MANAGER REQUIREMENTS

Each State agency Chief Information Officer is required to develop an Information Technology Conservation Plan detailing specific mitigation measures for their department. Plans should have been forwarded to the State and Consumer Services Agency by January 26, 2001. Any questions on this document should be referred to the Department of Information Technology, John Correia, at (916) 445-5900.



ELIAS S. CORTEZ
State Chief Information Officer/Director
State of California/Department of Information Technology

Attachments (3)

- A. Sample Operational Procedures Document
- B. Communication Plan Matrix
- C. Conservation Measures Matrix



Management Services Division
Office of Technology Resources

April 17, 2001

OTR Operational Procedures During Electrical Emergencies

The purpose of this procedures document is to identify additional conservation and protective measures that the Office of Technology Resources (OTR) will take in the event of a ISO Stage 2 or 3 Electrical Emergency as defined below.

ELECTRICAL EMERGENCY DEFINITIONS

During periods in which electrical demand puts strains on the electric systems of the state's utilities, the California Independent System Operator (CAISO) may declare an Electrical Emergency. Such a declaration can be made in progressive stages, depending upon the amount of reserve generation available to the California electrical grid. These stages are summarized here:

Classification/ISO Notice	Condition/Description
Standard Operations	<ul style="list-style-type: none"> No energy emergency exists
Stage 1 Emergency	<ul style="list-style-type: none"> ISO declares a Stage 1 Emergency. Emergency: Less than 7% operating reserves forecasted in REAL TIME. Customers with voluntary interruptible contracts should prepare for potential interruption
Stage 2 Emergency	<ul style="list-style-type: none"> ISO declares a Stage 2 Emergency, but does not call on interruptibles (Phase 1) ISO declares a Stage 2 Emergency and calls on interruptibles and warns of a potential Stage 3 Emergency (Phase 2) Emergency: Less than 5% operating reserves forecasted in REAL TIME. An interruption is in effect for voluntary interruptible loads only
Stage 3 Emergency	<ul style="list-style-type: none"> ISO declares a Stage 3 Emergency in order to get additional resources, rotating outages may occur or are occurring. Emergency: Less than 1 ½% operating reserves forecasted in REAL TIME. All available interruptible load is called for interruption. Firm service customers (customers not on interruptible tariff) will also be called for interruption.
Extended Uncontrolled Outages	<ul style="list-style-type: none"> Due to loss of system integrity or natural disaster, communication systems may be inoperable. Time to restoration of service unknown.

Procedures continued on next page

STAGE 2 OPERATIONAL PROCEDURES

UPON NOTIFICATION FROM "DGS ENERGY INFO" THAT A STAGE 2 HAS BEEN DECLARED BY THE CAISO:

1. OTR End User Support Services (EUSS) will conduct a walk-thru of the local office instructing employees to:
 - Turn off all personal computers and monitors that are not absolutely essential.
 - Turn off all file and application server monitors when not in use.
 - Turn off all test or lab equipment that is not absolutely essential.
 - Turn off all other non-essential IT equipment, including printers, scanners, copiers, and other peripheral equipment.
 - Turn off lights in all unoccupied offices, computer equipment rooms, and storage areas.
 - Where possible, increase thermostat settings in computer rooms to the maximums allowed by computer equipment manufacturers.
 - The use of printers shall be consolidated. Where possible, redundant printers shall be turned off and work shall be directed to a consolidated workgroup printer(s).
 - Reduce light levels where possible in work areas. Exercise caution to ensure that reduced lighting levels do not create an unsafe work environment.
 - Turn off all non-essential appliances such as coffee makers, fans, etc. DO NOT turn off refrigerators.

STAGE 3 OPERATIONAL PROCEDURES

UPON NOTIFICATION FROM "DGS ENERGY INFO" THAT A STAGE 3 HAS BEEN DECLARED BY THE CAISO:

1. OTR End User Support Services (EUSS) will conduct an immediate walk-thru of the local office instructing employees to ensure that all Stage 2 procedures are in place and implement the following conservation measures:
 - Turn off personal computers and monitors that are not essential to conducting state business. Each work place should maintain at least one computer and its e-mail server on in order to receive critical communications. The intended recipient's email address should be on the agency's e-mail contact list submitted to the DGS Energy Control Center for energy emergency information and notification.
 - Turn off monitors for file and application servers when not used.
 - Turn off test or laboratory equipment that is not essential.
 - Turn off other non-essential IT equipment, including printers, scanners, copiers, and other peripheral equipment.

UPON NOTIFICATION FROM "DGS ENERGY INFO" THAT ROTATING ELECTRICAL OUTAGES HAVE BEEN INITIATED BY THE UTILITIES, OTR WILL BE PREPARED TO TAKE THE MEASURES IDENTIFIED BELOW.

IMPORTANT: THESE MEASURES ARE TO BE TAKEN ONLY UPON NOTIFICATION FROM "DGS ENERGY INFO" STATE THAT THE GOVERNOR, STATE AND CONSUMER SERVICES AGENCY AND/OR THE DEPARTMENT OF INFORMATION TECHNOLOGY DIRECT THAT EMERGENCY MEASURES ARE TO BE TAKEN:

1. The OTR EUSS Call Center will notify all primary contacts via email (DGS Management, Office Information Officers, and LAN/Systems Administrators) that emergency measures are being taken by OTR.
2. OTR EUSS and Enterprise Operations (EOPS) technicians will ask employees within the office environments for which they are responsible to:
 - Save all work currently open and shut down all personal computers, monitors and local printers for a specified period of time, or until further notice.
 - Shut down all network printers, local area network file and print servers, and all non-essential departmental servers for a specified period of time, or until further notice.

Exceptions to these measures will be limited to the personal computers and monitors of members of the DGS Energy Emergency Response Team, and the departmental servers and network components essential for electronic mail communications.

IN THE EVENT THAT OTR NETWORK FACILITIES EXPERIENCE AN EXTENDED INTERRUPTION OF ELECTRICAL POWER DUE TO A ROTATING OUTAGE:

1. OTR EUSS Call Center will notify all primary contacts (DGS Management, Office Information Officers and LAN/Systems Administrators) that further emergency measures are being taken to preserve the DGSNet infrastructure.
2. OTR EOPS technicians will shut down ALL departmental servers.
3. OTR EOPS technicians will shut down ALL network infrastructure components.

These emergency measures will remain in affect until electrical power has been restored. OTR EUSS and EOPS and technicians will remain on alert and prepared to resume essential services immediately when power is restored.

DGS/OES Energy Emergency Communication Plan

ATTACHMENT B

Info To Deliver	Audience											Message Originator	Medium	Timing	Triggers	Protocol	Status of Capability to Take Action
	State Governmen																
	Directors	Chief Deputy Dir.	CIO	Com Officers	Facility Mgr.	Plant Mgr	IT Tech Staff	Energy Mgr	Co Gen	Third Party Co Gen	Others						
Alerts																	
Standard Operations	X	X	X	X	X	X	X	X				OEA	Email	Weekly	None	Cascading	Ready 1/23/01
Stage 1	X	X	X	X	X	X	X	X				OEA	Email	Real Time	Stage 1	Cascading	Ready 1/23/01
Stage 2	X	X	X	X	X	X	X	X	X	X	X	OEA	Email	Real Time	Stage 2	Cascading	Ready 1/23/01
Stage 3	X	X	X	X	X	X	X	X	X	X	X	OEA	Email	Real Time	Stage 3	Cascading	Ready 1/23/01
																	Ready 1/23/01
Conservation Measures	X	X	X	X	X	X	X	X				OEA	Email	Weekly	Internal Advisory	Cascading	Ready 1/23/01
Funding Sources	X	X	X	X	X	X			X		X	OEA	Email	When Known	Internal Advisory	Cascading	Ready 1/23/01
Resource Opportunities	X	X	X	X	X	X						OEA	Email	When Known	Internal Advisory	Cascading	Ready 1/23/01
New Technologies	X	X	X	X	X	X						OEA/DOIT	Email	When Known	Internal Advisory	Approvals	Ready 1/23/01
Policies	X	X	X	X	X	X	X	X				OEA	Email	When Known	Internal Advisory	Approvals	Ready 1/23/01
Readiness	X	X	X									OEA	Email	When Known	Internal Advisory	Approvals	Ready 1/23/01
Outreach	X	X	X	X	X	X	X	X	X	X	X	OEA	Email	When Known	Internal Advisory	Approvals	Ready 1/23/01
Security Issues	X	X	X									OEA	Email	When Known	Internal Advisory	Int/Ext App	Ready 1/23/01
Public Safety	X	X	X									OEA	Email	When Known	Internal Advisory	Int/Ext App	Ready 1/23/01

***The CA Energy Commission is the lead for local government (cities, counties, special districts) and federal government with regard to Conservation Measures.

***The Office of Emergency Services is the lead for local government with regard to Public Safety Issues.

***The Department of General Services will not be involved with notification to local or federal governments.

Information Category Definitions:

- Alerts-The different stages of electrical emergency.
- Conservation Measures-Demand reduction and energy efficiency equipment and methods.
- Funding Sources-Available resources to purchase new conservation measures
- Resource Opportunities-New electricity sources coming on line.
- New Technologies-New conservation products available
- Policies-Management memos and directives.
- Readiness-Preparedness to respond to electrical emergencies.
- Outreach-Education, employee awareness.
- Security Issues-Integrity of communication process itself.
- Public Safety-Actions to protect the health and welfare of state employees and assets in an electrical emergency.

Customer Categories: The categories on the front page are the categories of people we believe should be alerted. Instead of assuming that is what the Agency/Department wants, our plan is to have each Agency/Department submit a "Primary Contact" List to OEA. OEA will send out messages to the "Primary Contact" list and those people will cascade the information down to others within their organization based upon their Energy Emergency Management Plan.

Mediums Priority List:

- First: Email
- Second: E-Page
- Third: Phone
- Fourth: Cell Phone
- Fifth: Public Alert (conducted by OES)

Protocol Definitions:

Cascading-OEA will alert the "primary" group of people identified by each Agency/Dept. The Dept would then cascade down the information

Approvals

Internal/External Approvals

**Energy Task Force on Information Technology
Conservation Policy**

This matrix is for illustrative purposes only. Specific instructions shall be developed by each Agency.

	Standard Operations	Stage 1	Stage 2	Stage 3	Timing			Funding
					Advance	On Alert/ During	After	
Communications Audience Originator Medium Triggers Protocols	Per Emergency Communications Plan							X
CONSERVATION MEASURES								
Desktop Applications Monitors-enable ""Sleep"" Printers/copiers-enable ""Energy Saver"" Shut-down Non-critical Systems Shut-down all Systems	X X		X	X X	X X	X X		
Networks Shut-down Non-critical Systems Initiate Emergency Back-ups Shut-down all Systems			X	X X X		X X X		X
Data Center Ops Raise Maximum Temperatures Shut-down Non-critical Systems Switch to Emergency Power Shut-down all Systems	X		X	X X X	X	X X X		X X
Reaction Timing Alerts - M-F, Normal Hours Alerts - 24/7 All Clear	X	X	X X	X X	X	X X	X	
Procurement Efficient Equipment Energy Star New Technology Factor Energy into Network Design Factor Energy into Data Center Design	Per Preventive Energy Management Plan				X X X			X X X
Emergency Plans Sustaining Ops Emergency Shutdowns Recovery	Per Stage 3 Readiness Plan				Plans X X X	Actions X X X	Post X	X X X