Attachment M Capacity/Energy Shortage Contingency Plan



NO: GNE008

SYSTEM OPERATIONS AND RELIABILITY

GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

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SYSTEM OPERATIONS AND RELIABILITY GENERAL EMERGENCY OPERATIONS SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Introduction

Purpose and Scope

The Capacity/Energy Shortage Contingency Plan is an operational procedure consisting of a set of actions to be taken by SMUD and WASN in response to specific emergency situations within the SMUD Control Area. These situations require the reduction or shedding of SMUD and/or WASN load because of a shortage of capacity or energy resources, or because of import restrictions into the SMUD Control Area.

This procedure is generally designed to mitigate system deficiencies for the entire SMUD Control Area; but may be applied to localized areas such as Sacramento Area or WASN Sub-Control Area, as deemed justified by the SMUD Power System Operator and WASN System Dispatcher.

Audience

SMUD – System Operation & Reliability	The Manager, System & Operation Reliability or designee coordinates the implementation of the Plan. System Operation & Reliability, Power System Operations personnel initiate the Plan by contacting department representatives who in turn implement their respective procedures.
SMUD – Associates	Energy Trading & Contracts - Real Time Scheduler; Distribution Services, including Distribution System Operators and Emergency Preparedness; Commercial Services; Residential Services; Communication & Advertising Services; General Services; Telecommunications; and Protection, Safety & Emergency Services.
WASN – Power Operations	The Manager, Power Operations or designee coordinates the implementation of the Plan. Power Operations personnel initiate the Plan by contacting department representatives who in turn implement their respective procedures.

TSO, AGC, and TSS



SYSTEM OPERATIONS AND RELIABILITY SECTION GENERAL EMERGENCY OPERATIONS SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Assumed Conditions

The Capacity/Energy Shortage Contingency Plan functions to help SMUD Control Area reduce system loads when there are limits on available resources or other situations which require load reductions to ensure the system is operated safely and reliably. Emergencies requiring action under the Plan are SMUD Control Area specific or as directed by the California Mexico Reliability Coordinator (CMRC).

The procedure assumes that SMUD and WASN Power System Operators have applied all normal operating procedures available to balance supply and demand.

The procedure also assumes that energy shortages are generally foreseeable, allowing time for the orderly implementation of the reduction or curtailment of energy usage by customers.

General Description

- The Capacity/Energy Shortage Contingency Plan is activated when the SMUD Control Area is considered deficient according to WECC MORC under Emergency Operations. The Plan basically implements load reductions in the various entities in the SMUD Control Area. The load reduction programs consist of:
- Public Appeals for non-essential load reduction;
- SMUD Curtailable Customer Contracts;
- SMUD Demand Bid program;
- SMUD Temperature Dependent Pricing;
- SMUD Voluntary Emergency Curtailment Plan;
- SMUD Residential and Commercial ACLM;
- Rotational Load Shedding Plan.



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References

- WASN: Procedure G-009 Electrical Emergency and Manual Load Shedding Plan
- SMUD: PSE 107 DLT, RAS, and Nomogram Operations
- SMUD: GNE 003 Rotational Load Shedding
- SMUD: PSE 002 ACLM Activation/Control
- ISO: Procedure E-505 Emergency Assistance to other Control Areas
- CMRC: Procedure RC-902 Reliability Coordinator (California Mexico Reliability Coordinator)
- NERC Policy Section 5: Emergency Operations
- WECC, MORC Section 5: Emergency Operations
- Governor Executive Order D-38-01
- CEC Energy Shortage Contingency Plan
- Contract between WASN and SMUD for Interconnected Operations
- SMUD: Communication Plan

Notification

INFORMATION SOURCES



1 Activates the Pager Notification System

INFORMATION SOURCES





SYSTEM OPERATIONS AND RELIABILITY SECTION GENERAL EMERGENCY OPERATIONS SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Procedure

The SMUD Power System Operators (PSO) shall activate this procedure when system conditions exist where load reduction are necessary to maintain the reliable operation of SMUD Control Area or the statewide grid stability. Information sources may include Pacific Gas & Electric (PG&E) Transmission Operations Center (TOC), California Independent System Operator (CAISO), California Mexico Reliability Coordinator (CMRC), or Western Electricity Coordinating Council (WECC).

- The PSO shall assess system conditions and identify the areas of the energy shortages: Sacramento Valley only or WASN's Sub-Control Area only, or the entire SMUD Control Area.
- For Sacramento Valley energy shortages, follow the instructions in *Section A SMUD's Responsibility* below.
- For WASN's Sub-Control Area energy shortages, follow Section B WASN's Responsibility below.
- For SMUD Control Area energy shortages, follow the *EXHIBIT E Contingency Reserve Obligations* defined in the Contract between SMUD and WASN, and the instructions in both *Sections A and B* in this procedure.

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A. SMUD's Responsibility

1. System Operation & Reliability

1.1 Power System Operators

- Initiate response activities to the SMUD energy shortage:
- Notify WASN Power System Dispatcher;
- Utilize all available generation capacity;
- Notify Real-Time Scheduler and request immediate purchase of available energy or reserves, and activate all curtailable load resources;
- Interrupt interruptible exports;
- Activate ACLM load curtailments;
- As needed, request emergency assistance from WASN;
- As needed, request emergency assistance from CAISO;
- Coordinate emergency energy schedules by entering the schedules into the deficient Sub-Control Area's emergency scheduler;
- Notify Distribution System Operators of impending load shed.
- Coordinate load shed activities with WASN;
- Coordinate load shed activities with CMRC;
- As the situation permits, notify: Manager, System Operation & Reliability; Supervisor, Power System Operators; Power System Operations Engineers, Supervisor, System Protection & Control.

1.2 Manager, System Operation & Reliability (SOAR)

- Notify Executive Management;
- Notify Department of Energy (DOE) Emergency Operation Center (EOC), as required;
- Notify Manage Overall SMUD transmission & generation systems operations.

1.3 Supervisor, Power System Operators/Power Operations Engineers

- Manage Power System Operators' response activities to the energy shortage;
- Coordinate with CMRC and/or WASN in preparation for District's load shed activities;



SYSTEM OPERATIONS AND RELIABILITY SECTION GENERAL EMERGENCY OPERATIONS

- Coordinate activation of District's load curtailment programs;
- Determine SMUD capacity shortage and transmission system condition;
- Initiate notifications to management and key responders to an energy shortage and load curtailment activities;
- Coordinate with General Services, Facilities and Maintenance, for activation of the District's Energy Reduction Program.

2. Real Time Scheduler, Energy Trading & Contracts

Upon request from SOAR:

- Purchase available energy or reserves immediately;
- Contact Customer Service to solicit bids via Demand Bid Program
- Notify Huhtamaki to reduce load by 1000 hours;
- Notify BOC to reduce load in 10 minutes if requested by SOAR.

3. Distribution System Operations

- Plan and coordinate District's capacity/energy shortage system load shed including the notification of:
 - o Troubleshooters' personnel
 - Substations' personnel
 - Asset Management (Line) personnel;
- Coordinate with Emergency Preparedness Representative to ensure current system status information is available for dissemination to local, state & federal agencies and the District's EOC when activated.

3.1 Distribution Services Support

- Restoration Coordinator
 - Keep DS Management informed;
 - Manage distribution system operations;
 - Coordinate information flow between Distribution System Operations and Power System Operations.
 - Planning & Operations, System Engineers
 - Manage Distribution System Operations load shed planning and implementation activities.
- Emergency Preparedness
 - Establish and maintain communication links;
 - Track real time load shed details;
 - o Disseminate information to public agencies;



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SYSTEM OPERATIONS AND RELIABILITY

GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

- o Activate EOC as needed.
- Restoration manager
 - Liaison b/w DSO and EOC (when activated);
 - Make appropriate notification regarding resources required (field personnel, support personnel, etc.).

4. Commercial Services

- Respond to Commercial & Industrial customers' concerns;
- Implement VECP Notification Plan;
- Support activation of Commercial load curtailment programs;
- Notify Commercial Services Account Management Call Center and Account Representatives to make uniform, consistent and informative responses to customers' concerns;
- Notify Key and Major Accounts with critical operations.

5. Customer Support & Residential Services

- Call Center & Outage Supervisors shall initiate the following:
 - Notify Customer Service Reps (CSR's) to enable CSR's to make uniform, consistent, and informative response to customers' concerns;
 - Initiate CSR's coverage to ensure effective customer service;
 - Update IVR relative to event status (event status information to come from PSO).

6. Communication & Advertising Services

- Initiate media news releases;
- Coordinate media interviews, etc;
- Monitor media reports and track rumors;
- Initiate Newsline, Employees' News Network and Communication processes.

7. Telecommunication

- Telephone Service Technicians
 - Make appropriate changes in phone numbers and/or location of available telecommunication trunks as requested in accordance with Telephone Services' Procedures.
- Telecommunication Technicians to support ACLM system operations



SYSTEM OPERATIONS AND RELIABILITY

GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

8. General Services

- Facilities & Maintenance
 - Implement District's Energy Reduction Program as directed by DSO or PSO.

9. Protection, Safety & Emergency Services

- Asset Protection Operations
 - o Implement District's Security Operations' activities.



SYSTEM OPERATIONS AND RELIABILITY SECTION GENERAL EMERGENCY OPERATIONS SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

B. WASN's Responsibility

1. Power Operations

1.1 Power System Dispatchers

- Initiate response activities to the energy shortage:
- Notify SMUD Power System Operator;
- Notify WASN's Communications Team;
- Notify all internal Load Serving Entities (LSE's);
- Notify the Bureau of Reclamation;
- Notify Real-Time Scheduler and curtail all interruptible exports;
- Request load curtailment [5%, 10%, 20%, or 30%] from each non-project load;
- Call for voluntary shut down of one pump at Tracy Pumping Plant;
- Request [next increment 10%, 20%, 30%, or 40%] load curtailment from each non-project load;
- Shut down Tracy Pumps [incremental unit(s)];
- As needed, request emergency assistance from SMUD;
- Enter emergency energy schedules into WASN's emergency scheduler;
- Coordinate load shed activities with SMUD;
- As the situation permits, notify: Supervisors, Power System Dispatcher;

1.2 Manager, Power Operations

- Notify Executive Management;
- Notify Department of Energy (DOE) Emergency Operation Center (EOC), as required;

4/12/2005



SYSTEM OPERATIONS AND RELIABILITY GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

1.3 Power System Dispatcher, Supervisors

- Manage Power System Dispatcher's response activities to the energy shortage;
- Determine WASN's capacity shortage and transmission system condition;
- Initiate notifications to management and key responders to an energy shortage and load curtailment activities;

2. Information Services

- Initiate media news releases;
- Coordinate media interviews, etc;
- Monitor media reports and track rumors; and
- Initiate communication processes.

EFFECTIVE	DATE
5/	20/2005



SYSTEM OPERATIONS AND RELIABILITY GENERAL EMERGENCY OPERATIONS SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Revision History

Revision No.	Description	Date	Initials
0.0	2004 Load Shedding Plan	06/02/04	JB/SM
1.0	Converted the Plan to a PSO Procedure	07/13/04	KAH
2.0	Added WASN to the expended Control Area & updated SMUD for 2005	4/12/05	TW



SYSTEM OPERATIONS AND RELIABILITY GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Procedure Approval

Prepared by	<u>/s/ Tracy Wang</u> Principal Operations Engineer	Date <u>5/17/05</u>
Concurred by	<u>/s/ Jeff Briggs</u> Emergency Preparedness Specialist II	Date <u>5/17/05</u>
Concurred by	<u>/s/ Selby Mohr</u> Emergency Preparedness Supervisor	Date <u>5/20/05</u>
Concurred by	<u>/s/ James Fee</u> Supervisor, Power System Operations	Date <u>5/17/05</u>
Approved by	<u>/s/ Maria Veloso-Koenig</u> Manager, Planning & Operations	Date <u>5/18/05</u>
Approved by	<u>/s/ Gary Lawson</u> Manager, System Operation & Reliability	Date <u>5/17/05</u>



SYSTEM OPERATIONS AND RELIABILITY

SECTION GENERAL EMERGENCY OPERATIONS

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Attachments

- I. SMUD's Load Curtailment Sequence
- II. WASN's Load Curtailment Sequence
- III. WECC Policy Minimum Operating Reliability Criteria
- IV. SMUD's Commercial Services, "Voluntary Emergency Curtailment Plan"
- V. Sample New Media Releases
- VI. Contact List



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SECTION

ATTACHMENT I

SMUD's LOAD CURTAILMENT SEQUENCE

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

I. SMUD's Load Curtailment Sequence

Load Curtailment Sequence

(Note that due to the implementation lead times of individual elements, the sequence may not always occur in the stated order.)

In Advance of Pending Resource Shortages

- 1. Initiate *public appeals* process.
- 2. Initiate non-critical level of SMUD *facilities' energy reductions*.
- 3. The following load reduction programs may be implemented:
 - **Demand Bid** program;
 - Notification to Huhtamaki to reduce load up to 6 MW by 1000; reduction can occur by 1400. This step assumes Huhtamaki has not already been curtailed per contract for economics or other reasons.
 - Notification to BOC & Air Products (TDP Customer) to reduce load up to 16 MW by 1000; reduction can occur by 1400. This step assumes TDP customers have not already been curtailed per contract for economics or other reasons.
- 4. Call for activation of *Voluntary Emergency Curtailment Plan* if there is adequate lead-time.



SECTION

ATTACHMENT I

SMUD's LOAD CURTAILMENT SEQUENCE

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Upon Decision to Shed Load

- 1. Initiate highest level of SMUD facilities' energy reductions.
- 2. Exercise **10-minute curtailment option on BOC (TDP Customer)** if TDP has not been exercised per contract for economics or other reasons.
- 3. Curtail interruptible energy exports if available.
- 4. Dispatch Residential and Commercial ACLM.
- 5. Activate *Voluntary Emergency Curtailment Plan* if there is adequate lead-time and VECP has not been activated.
- 6. *Arm firm load shed* in an amount sufficient to meet non-spinning reserve requirements.
- 7. If Sacramento Area Import is less than the maximum limits (PSE 107), notify WASN and CAISO of the SMUD status and request emergency energy assistance in an amount sufficient to meet reserve requirements and disarm firm load shed.
- 8. Supply any remaining spinning reserve requirements with *rotating outages*.



	SECTION	SUBJECT CAPACITY/ENERGY SHORTAGE	
ATTACHMENT I	SMUD's LOAD CURTAILMENT SEQUENCE	CONTINGENCY PLAN	

Load Shed Event Flowchart





ATTACHMENT II WASN'S LOAD	SUBJECT
CURTAILMENT	CAPACITY/ENERGY SHORTAGE
SEQUENCE	CONTINGENCY PLAN

II. WANS's Load Curtailment Sequence

Manual load shedding refers to the WASN Dispatcher initiated action or orders to drop load. This action may be initiated by SCADA or result from a verbal order from WASN Dispatcher.

The WASN Dispatcher has the authority to implement manual load shedding if deemed necessary to meet WECC/NERC and SMUD/WASN Control Area operating requirements when no valid alternatives to load interruption exist.

Priority	ACTION	Estimate MW curtailed	Comment
1	Curtail all interruptible exports	TBD MW	Follow WECC/NERC guidelines
2	Request [5%, 10%, 20%, or 30%] load curtailment from each non- project load	TBD MW	Percentage non-project load reduction dependent upon need
3	Call for voluntary shut down of one pump @ Tracy Pumping Plant	14 MW	U1 18 MW, U2-6 15 MVA
4	Request [next increment 10%, 20%, 30%, or 40%] load curtailment from each non-project load	TBD MW	Percentage non-project additional load reduction dependent upon need
5	Shut down TRY pump [incremental unit(s)]	TBD MW	U1 18 MW, U2-6 15 MVA; dependent upon need
RESTORE	Restoration shall be in the reverse order, in controlled increments	TBD MW	The first load curtailed shall be the first load restored and so on

OPTION 1. Fast, Immediate Mitigation Required

12/20/2004



ATTACHMENT II WASN'S LOAD	SUBJECT
CURTAILMENT	CAPACITY/ENERGY SHORTAGE
SEQUENCE	CONTINGENCY PLAN

OPTION 2. Either Smaller Increments or Slower Rate of Curtailment

Priority	ACTION	Estimate MW curtailed	Comment
1	Curtail all interruptible exports	TBD MW	Follow WECC/NERC guidelines
2	Request [5%, 10%, 20% or 30%] load curtailment from each non- project load	TBD MW	Percentage non-project load reduction dependent upon need
3	Shut down TRY one pump unit	15 MW	U1 18 MW, U2-6 15 MVA
4	Request [next increment 10%, 20%, 30%, or 40%] load curtailment from each non-project load	TBD MW	Percentage non-project additional load reduction dependent upon need
5	Shut down TRY pump [One incremental unit]	TBD MW	U1 18 MW, U2-6 15 MVA; dependent upon need
6	Request [next increment 20%, 30%, or 40%] load curtailment from each non-project load	TBD MW	Percentage non-project additional load reduction dependent upon need
7	Shut down TRY pump [next incremental unit(s)]	TBD MW	U1 18 MW, U2-6 15 MVA; dependent upon need
RESTORE	Restoration shall be in the reverse order, in controlled increments	TBD MW	The first load curtailed shall be the first load restored and so on



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ATTACHMENT II

WASN'S LOAD CURTAILMENT SEQUENCE

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

Load Information

Block	Location/Equipment	Summer BK Peak (MW)	Winter BK Peak (MW)	Minimum Load
1	FLN 230-kV KY1A			
	Knauf	9.6	8.7	3
2	FLN 230-kV KY3A			
	Central Valley	9.6	8.7	3
3	0KE 115-kV KU3			
	Knauf	12.8	8.7	3
4	AIR 230-kV KY1A			
	Airport #1	15	-2	-1
5	AIR 230-kV KY2A			
	Airport #2	15	-2	-1
6	KE 115-kV KU1			
	Sulphur Cr	20	14	6
	Canby	31	22	9
	East Redding	15	11	4
	College View	14	10	4
	Beltline	12	8	3
7	KE 115-kV KU2			
	Eureka Way	14	11	4
	Oregon	8	6	3
	Waldon	29	23	9
	Moore	21	17	7
8	RSC 230-kV KY1A			
	Park 601	36	20	8
	Industrial 602	23	13	5
	Industrial & Foothill 603	19	11	4
	Pleasant Grove 608	17	10	4

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SECTION

ATTACHMENT II

WASN'S LOAD CURTAILMENT SEQUENCE

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

9	RSC 230-kV KY2A			
	Cirby 604	10	6	2
	Douglas 605	21	12	5
	Hardrock 606	33	18	7
	Southeast 607	31	17	7
10	FIY 230-kV KY3A			
	Foothills 6021	30	17	7
	Fiddyment 6024	30	17	7
	Baseline & Vernon 6028	42	24	9
Block	Location/Equipment	Summer BK Peak (MW)	Winter BK Peak (MW)	Minimum Load
11	TRY 69-kV KZ31C			
	Pump #1	18	18	7
	Pump #4	15	15	6
	Pump #5	15	15	6
	Pump #6	15	15	6
12	LLL 115-kV			
	LLL 115-kV Breaker 662	40	40	16
	LLL 115-kV KV2A	41	41	16

The restoration of manually shed load should be expedited as soon as system conditions allow and restoration shall be in the reverse sequence from the interruption. That is, the first load shed will be the first load restored. If conditions persist that would cause any interrupted load to remain off for any contiguous time greater than 2 hours, the outage should be rotated through the list in numerical order as appropriate for the available MW requirements.



SECTION

ATTACHMENT III

WECC – MINIMUM OPERATING RELIABILITY CRITERIA

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

III. WECC Policy - Minimum Operating Reliability Criteria (MORC)

Section 5 – Emergency Operations, Part A, B, & C

Part A:

Emergency Operating Philosophy

During an emergency condition, the security and reliability of the interconnected power system are threatened; therefore, immediate steps must be taken to provide relief. The following operating philosophy shall be observed:

1. Corrective Action

The entity(ies) experiencing the emergency condition shall take immediate steps to relieve the condition by adjusting generation, changing schedules between control areas, and initiating relief measures including manual or automatic load shedding (if required) to relieve overloading or imminent voltage collapse. ACE shall be returned to zero or to its pre-disturbance value within the time specified in the Disturbance Control Standard following the start of a disturbance.

2. Written Authority

Dispatching personnel shall have full responsibility and written authority to implement the emergency procedures listed in A.1., above.

3. Re-establishing Reserves

Operating entities or control areas shall immediately take steps to reestablish reserves to protect themselves and ensure that loss of any subsequent element will not violate any operating limits. The time taken to restore resource operating reserves shall not exceed 60 minutes.

4. Notifying Other Affected Entities

In the event of system emergencies involving loss of any element(s), all affected entities and control areas shall be notified of the extent of the outage and estimated time of restoration.

Preliminary emergency outage notification shall be provided via the WECC Communication System as quickly as possible. Restoration information, if not available immediately, shall be provided as soon as practicable.



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ATTACHMENT III

WECC – MINIMUM OPERATING RELIABILITY CRITERIA

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

5. AGC

AGC shall remain in service as long as its action continues to be beneficial. If AGC is out of service, manual control shall be used to adjust generation. AGC shall be returned to service as soon as practicable.

6. Prompt Restoration

The affected entity(ies) and control area(s) shall restore the interconnected power system to a secure and reliable state as soon as possible.

7. Zeroing Schedules

Energy schedules on a transmission path shall be promptly reduced to zero following an outage of the path unless a backup transmission path has been pre-arranged. If a system disturbance results in system islanding, all energy schedules across open paths between islands shall be immediately reduced to zero unless doing so would prolong frequency recovery.

8. Emergency Total Transfer Capability Limits

Emergency total transfer capability limits shall be established which will permit maintaining stability with voltage levels, transmission line loading and equipment loading within their respective emergency limits in the event another contingency occurs. III-128

9. Adjustments Following Loss of Resources

Following the loss of a resource within a control area, scheduled and actual interchange shall be re-balanced within the time specified in the Disturbance Control Standard following the loss of a resource within a control area.

Following the loss of a remote resource or curtailment of other interchange being scheduled into a control area with no backup provisions, the energy loss shall be immediately reflected in the control area's ACE and corrected within the time specified in the Disturbance Control Standard.

B. Coordination with Other Entities

1. Emergency outages

Information regarding emergency outages of facilities, the time frame for restoration of these facilities, and the actions taken to mitigate the effects of the outages must be exchanged promptly with other affected entities.



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ATTACHMENT III

WECC – MINIMUM OPERATING RELIABILITY CRITERIA SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

2. Voltage collapse

Information regarding problems that could lead to voltage collapse shall be disseminated to other affected entities. Operation to alleviate the effects of such severe conditions shall be coordinated with all affected entities.

3. Other affecting conditions

Information regarding violent weather disturbances or other disastrous conditions which could affect the security and reliability of the interconnected power system shall be disseminated to all affected entities. Operation to alleviate the effects of such severe conditions shall be coordinated with all affected entities.

4. Single contingency exposure

All affected entities shall be notified promptly via the WECC Communication System by any entity forced to operate in such a way that a single contingency outage could result in general system instability, uncontrolled separation, cascading outages, or voltage collapse. Entities not connected to the WECC Communication System shall make this notification through their host control area.

5. Emergency support personnel

All control areas shall arrange for technical and management support personnel to be available 24 hours per day to provide coordination support in the event of system disturbances or emergency conditions.

These personnel shall be on-call to coordinate collecting and sharing of information. Each control area shall develop procedures in coordination with the Reliability Coordinators and the WECC office to fulfill this support responsibility.

The Reliability Coordinators shall expedite communication of appropriate information to the WECC office during system disturbances and emergency operating conditions to enable the WECC office to coordinate the reporting of information pertaining to the entire western region to federal agencies, regulatory bodies, and the news media in a timely manner.

Management support personnel shall maintain close and timely communication with the WECC office during extreme emergency conditions or system disturbances of widespread significance in the Western Interconnection.

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ATTACHMENT III

WECC – MINIMUM OPERATING RELIABILITY CRITERIA

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

C. Insufficient Generating Capacity

1. Capacity or Energy Shortages

(a) A control area experiencing capacity or energy shortages after exhausting all possible assistance from entities within the control area shall immediately request assistance from adjacent control areas or entities. Neighboring control areas shall be notified as to the amount of the capacity or energy shortages. Neighboring control areas shall make every effort to provide all available assistance.

(b) If inadequate relief is obtained from (a) above, then,

- Procedures outlined in the WECC Procedure for Securing Emergency Assistance shall be implemented.
- Control area(s) shall initiate relief measures as required to maintain reserves.

2. Deficient Control Area

A control area is considered deficient when:

- All available generating capacity is loaded; and
- All operating reserve is utilized; and
- All interruptible load and interruptible exports have been interrupted; and
- All emergency assistance from other control areas is fully utilized; and
- The ACE is negative and cannot be returned to zero in the time specified in the Disturbance Control Standard.

In this case, it will be necessary to manually shed firm load without delay to return the ACE to zero.



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ATTACHMENT III

WECC – MINIMUM OPERATING RELIABILITY CRITERIA

SUBJECT CAPACITY/ENERGY SHORTAGE CONTINGENCY PLAN

3. Manual load shedding

Through written standing orders and instructions the system dispatchers shall be given clear authority to implement manual load shedding without consultation whenever, in their judgment, such immediate action is necessary to protect the reliability and integrity of the system.

Manual load shedding may also be required to restore system frequency which has stabilized below 60 Hz or to avoid an imminent separation which would produce a severe deficiency of power supply in the affected area.

Upon system separation or islanding, manual load shedding may be required to restore system frequency which has stabilized below 60 Hz.



	SECTION	SUBJECT
ATTACHMENT IV	COMMERCIAL SERVICES	VOLUNTARY EMERGENCY CURTAILMENT PLAN (VECP)

IV. SMUD's Commercial Services, "Voluntary Emergency Curtailment Plan"

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	SECTION	SUBJECT
ATTACHMENT IV	COMMERCIAL SERVICES	VOLUNTARY EMERGENCY CURTAILMENT PLAN (VECP)

Introduction

Purpose and Scope

This Plan shall be activated upon notification from System Operations & Reliability, when the SMUD Control AREA Operating Reserve is anticipated to reach critical levels.

Audience

Commercial Services and System Operation & Reliability staff.

Assumed Conditions

System Operations & Reliability staff shall notify Commercial Services, VECP Coordinators, to implement this Plan, and all other available load management programs are being utilized.

General Description

The Commercial Services automated callout system will notify and request VECP participants to curtail their predetermined electric energy load for a specific time period. Actual achievable load curtailment benefits from this program are anticipated to vary between 10 and 50 MW.

References

None

Flowchart

None

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	SECTION	SUBJECT
ATTACHMENT IV	COMMERCIAL SERVICES	VOLUNTARY EMERGENCY CURTAILMENT PLAN (VECP)

Procedure

1. VECP Coordinator

1.1 Activate VECP

- Immediately, upon notification from System Operation & Reliability, access VECP's Automated Callout System Web Page and activate the VECP.
 - Automated Callout System will notify primary contact at customer's facility, requesting the energy load reduction and confirmation of electric load to be curtailed.
 - Automated Callout System records committed load reduction, non-response and electric load kW reduction in the Web site database. Automated call out system will notify the VECP participant that load shedding is no longer required if applicable.
- VECP Coordinator verifies customer responses and kW load reduction.

Note: A report can be generated, depicting total kW reduction of customers' curtailment results.

2. Backup VECP Implementation

- If automated call out system is unavailable, VECP Coordinator will issue e-mail script and a phone-mail alert to Commercial Services staff.
- Meet with Commercial Services staff to distribute customer call sheets.
 - Instruct Commercial Services staff to make calls to the customers' internal phone trees.
- After calls are made, input participants' confirmed kW reductions into database.
 - Generate database reports with kW reduction.

4/4/2005



	SECTION	SUBJECT
ATTACHMENT IV	COMMERCIAL SERVICES	VOLUNTARY EMERGENCY CURTAILMENT PLAN (VECP)

Procedure Approval

Prepared by	/s/ Steve Rutter Commercial Services	Date <u>5/17/05</u>
Concurred by	/s/ Diana Parker Process Coordinator, Commercial Services	Date <u>5/17/05</u>
Concurred by	<u>/s/ Clifton Lewis</u> Process Coordinator, Commercial Services	Date <u>5/17/05</u>
Concurred by	/s/ James Fee Supervisor, Power System Operations	Date <u>5/17/05</u>
Approved by	/s/ Ken Floyd Director, Customer Services	Date <u>5/18/05</u>
Approved by	/s/ Gary Lawson Manager, System Operation & Reliability	Date <u>5/17/05</u>

V. Sample News Media Releases

SMUD News Release

Sacramento Municipal Utility District

News Media Services •

916•732•5111

For Immediate Release: Insert, 2005

SMUD faces peak alert day, but expects to avoid power shortfalls

The Sacramento Municipal Utility District (SMUD) is asking customers to limit their use of electricity during this afternoon's high temperatures. With the heavy use of air conditioners, customers are using electricity at record levels, requiring the use of all SMUD power sources. With help from customers, SMUD expects to be able to avoid any power shortfalls.

SMUD is asking residential customers to raise thermostat settings on air conditioners to 80 degrees Fahrenheit or higher. In addition, residential customers can help by limiting the use of household appliances during the hours of **1:00 p.m. and 9:00 p.m.** Limiting the use of both hot water and cold water will lower the demand for electricity needed for pumping, processing and delivery.

Commercial and industrial customers are asked to reduce the use of lighting not essential for safety purposes in garages, hallways, lobbies, warehouses and displays. The minimized use of office equipment, supply and exhaust fans, circulating pumps, and maintenance and repair equipment will also allow the utility to lower demand for electricity.

Customers in SMUD's Peak Corps Air Conditioning Load Management program have already helped lower the demand for power today. At **INSERT p.m.** SMUD began cycling the air conditioners to reduce the power demand by approximately 100 megawatts.

SMUD is an independent control area within the western electricity power grid. By controlling its own system, SMUD is not required to participate in rotating outages when other California utilities face energy shortages due to financial issues or failure to meet their obligation to provide reserve power. Prior to becoming a control area, SMUD was required to comply with California ISO orders to participate in rotating outages. SMUD will initiate rotating outages only in the event of a major equipment failure or transmission loss, caused by something such as a large fire. SMUD continues to support the statewide electricity grid in the event of a true electrical emergency.

SMUD News Release

Sacramento Municipal Utility District

News Media Services

916•732•5111

For Immediate Release: Insert, 2005

SMUD customers asked to continue conservation efforts; possible resource shortage exists

Despite efforts to reduce electric demand, the Sacramento Municipal Utility District (SMUD) is still facing a potential power shortage in the area today. Continued hot weather and the related heavy use of air conditioners is driving power usage to record levels. With help from customers, SMUD is expecting to be able to continue to avoid any power shortfalls. Though SMUD does not expect any planned outages, this of course does not preclude any outages due to equipment failure.

SMUD is asking all customers to further reduce electric usage between the hours of **1:00 p.m.** and **9:00 p.m.** Minimizing the use of lighting, air conditioning, appliances and limiting water use will aid in reducing the demand for electricity.

Commercial, industrial and agricultural customers also can reduce electric demand by minimizing air conditioning use, turning off outdoor signs and display lighting. Limiting water use and water pumping during peak hours will also minimize electric demand.

SMUD thanks customers for their cooperation in reducing electric usage and helping to lower the demand for power. Customers have already helped lower the demand for power today. At **INSERT** p.m. today SMUD began cycling air conditioners to reduce the power demand by about 100 megawatts. Another **INSERT** megawatts were shed when commercial customers shut down equipment and switched to emergency generators.

SMUD is an independent control area within the western electricity power grid. By controlling its own system, SMUD is not required to participate in rotating outages when other California utilities face energy shortages due to financial issues or failure to meet their obligation to provide reserve power. Prior to becoming a control area, SMUD was required to comply with California ISO orders to participate in rotating outages. SMUD will initiate rotating outages only in the event of a major equipment failure or transmission loss, caused by something such as a large fire. SMUD continues to support the statewide electricity grid in the event of a true electrical emergency.

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SMUD News Release

Sacramento Municipal Utility District

News Media Services

916•732•5111

For Immediate Release: Insert, 2005

Resource shortage exists

The Sacramento Municipal Utility District (SMUD) announced that customers' electric service will be interrupted for **INSERT** hour intervals due to power shortages caused by the extreme weather conditions (or equipment failure or loss of major loss of transmission in the west or California). The rotating outages began at **INSERT p.m.** today and are expected to continue until the temperatures fall and the heavy use of air conditioners declines.

Customers whose electric service has been interrupted are asked to turn manual and automatic equipment to the "off" position until after power has been restored. Those customers who are not affected by the service interruptions are asked to continue to reduce non-essential electric use between the hours of **1:00 p.m. and 9:00 p.m.**

Customers have already helped lower the demand for power today by **INSERT** megawatts. At **INSERT** p.m. today SMUD began cycling air conditioners to reduce the power demand by about 100 megawatts. Another **INSERT** megawatts were shed when commercial customers shut down equipment and switched to emergency generators.

SMUD is an independent control area within the western electricity power grid. By controlling its own system, SMUD is not required to participate in rotating outages when other California utilities face energy shortages due to financial issues or failure to meet their obligation to provide reserve power. Prior to becoming a control area, SMUD was required to comply with California ISO orders to participate in rotating outages. SMUD will initiate rotating outages only in the event of a major equipment failure or transmission loss, caused by something such as a large fire. SMUD continues to support the statewide electricity grid in the event of a true electrical emergency.

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VI. Contact List

Use SMUD's Pager Notification System whenever applicable. The following list serves as a back up/reference.

Program	Contact	Phone or SMUD Ext
	Art Dias Consolar	(916) 353-4073
	Art Diaz-Gonzaiez	Cell (916) 806-7990
WASN Communications Team		(916) 353-4559
	Bob Miller	Cell (916) 769-8140
	Fred LeBlanc	(916) 353-4455
		Cell (916) 769-4766
City of Roseville		774-5620
	PSO	5964
SMUD System Operations &	James Fee	6157 or 798-8014
Kenability	Eddy Lim	5362 or 803-5362
SMUD ACLM Support	Bud Mentzer	7377 or 826-6257
	Steve Rutter	6766
SMUD VECP – Voluntary Emergency	Diana Parker	6540
	Clifton Lewis	6619
SMUD Demand Bid (Power Net)	Steve Rutter	6766
SMUD Temperature Dependent Rate &	Dennis Holcomb	5102
Customers on Curtailable Contracts	Energy Trading	
SMUD Facilities Department	Bob Little	6040
	Don LaDue	(415) 973-1802
PG&E Transmission Operations,		(415) 973-5455, or
Emergency Event Logistics Room	Glen Rounds	(559) 263-5038
	Bill Miller	(415) 973-4608
SMUD Communication & Advertising	On-call Pager, and	(916) 552-3505
Services	Monica Siewert	X5136
SMUD Commencial Contorner	Call Huhtamaki Operations Hotline, and follow up with a fax	Hotline (916) 525-1249
contracted to curtail (Huhtamaki)		Fax (916) 689-1013
	Notify Huhtamaki Key Acct. Rep. Karl Fleischbein	Pgr (916) 535-4839