



UC and the Energy Crisis

Overall Planning

In anticipation of impending shortages in both electricity and gas supplies this summer, UC has established an Energy Emergency Plan at each campus, medical center, laboratory and Division of Agriculture and Natural Resources location.

University of California campuses and other facilities have widely varying vulnerabilities to possible electricity shortages during the summer months of 2001.

Currently Exempt From Rolling Blackouts

UC's major medical centers are exempt from rolling blackouts, qualifying as essential service providers. Overall, UC locales now exempt include:

1. UC San Francisco Medical Center (Parnassus Campus).
2. UC Davis Medical Center.
3. UC San Diego Medical Center.
4. UC Irvine Medical Center.
5. UCLA and the UCLA Medical Center are located in Los Angeles Department of Water and Power (LADWP) service territory and are not subject to rolling outages. LADWP has stated that they will have adequate supplies to meet their customer's needs throughout the summer.
6. UC Davis
7. UC Santa Barbara
8. UC Office of the President

UC Riverside has signed an agreement with Riverside Public Utilities that exempts the campus academic core from rolling blackouts in exchange for the campus' willingness to reduce its load by two megawatts upon request. The campus will make use of its thermal energy storage facility to reduce load as well as send out a campus-wide request for all departments to reduce non-essential electrical use to meet this load reduction target.

UC San Diego is currently exempt due to notice from San Diego Gas & Electric that the company presently does not have the technical capability to include them in rotating outages.

Lawrence Livermore National Laboratory receives its power directly through Western Area Power Authority lines that are not subject to rolling outages.

Non-Exempt Campuses and Facilities

- UC Santa Cruz
- UC Irvine
- UC Santa Barbara
- UC Berkeley
- Lawrence Berkeley National Laboratory
- UC Merced
- UC San Francisco properties outside of Parnassus campus
- Many campus field stations and outlying facilities
- All Department of Agriculture and Natural Resources Research and Extension facilities.

Campuses with Large Cogeneration Facilities

Campuses in this category will be able to continue operations with the majority of campus functions unaffected.

- UC San Diego plans to operate their cogeneration plant throughout the summer months. This combined with a 3 MW of diesel generator capacity will cover the majority of campus needs. Individual building diesel generators will supply power for critical facilities in the event of cogeneration plant failure during an outage.
- UC Berkeley's cogeneration plant is available to supply the majority of campus needs during a rotating outage. Diesel generators are available for critical load support.

Campuses/Facilities with Small or No Cogeneration Facilities

The majority of campuses with small or no cogeneration capacity can protect their most critical functions with emergency generators, but the majority of campus functions will suffer adverse impacts from a rotating outage.

- Campuses with small or no cogeneration facilities have diesel or battery backup for critical campus facilities such as animal facilities, laboratory building ventilation, communications and health/life safety loads.
- UC Davis will run its cogeneration plant to supply approximately 3 megawatts, or about 1/10th of the total campus load.

Challenges

The biggest challenge facing campuses with little or no cogeneration capability is lack of advance notification of rotating outages. With adequate advance notice, critical facilities such as computer centers that are not on emergency power would have time to shut down safely. The UC Office of the President is working with utility companies with the California Public Utilities Commission to improve the notification process in order to get campuses and facilities notified with enough time to prepare their facilities for an outage.

Complete Grid Failures or Other Extended Outages

UC medical centers have sufficient emergency generation capability to allow basic functions to continue throughout the outage period. Depending on the length of the outage, there could be a disruption to non-critical hospital services.

- Medical centers at UCLA, UC San Francisco and UC Davis are backed up with large cogeneration plants that would allow the majority of hospital functions to continue.
- The UC Irvine Medical Center has sufficient diesel generator capacity to run the majority of the hospital's loads throughout a grid outage.

Campuses and Other UC Facilities

Campuses with large cogeneration will continue to run them at maximum levels to attempt to keep the majority of campus services running. Campuses with small or no cogeneration capacity will utilize their individual building emergency generators to support critical activities.

- Campus housing offices have back-up generation for basic life and health safety functions, but that food service functions may be disrupted if an extended grid outage is experienced.
- To supplement its building emergency generators, UC Riverside has leased 6 megawatts of gas-fired emergency generation capacity to provide central campus backup. This will supply the campus with the capacity required to protect mission critical areas on the campus.
- UCLA will keep its cogeneration plant on-line and available for supplying up to 80% of the campus/medical center's needs during a grid outage.

- Campuses have made arrangements for diesel fuel deliveries in the event of a long-term grid outage.

Natural Gas Curtailments

Campuses with central heating and cooling plants typically have backup fuel (oil or propane) to ensure that central heating will remain operational throughout a gas curtailment. Smaller outlying facilities typically are not in as much danger of gas curtailment as large central gas services.

Campus cogeneration plants can also run on oil backup. It is less likely that natural gas would be curtailed to a power generation plant during times of critical electric grid shortages. If natural gas and electricity are curtailed simultaneously, campuses will fall back on diesel emergency generation to support critical functions.