

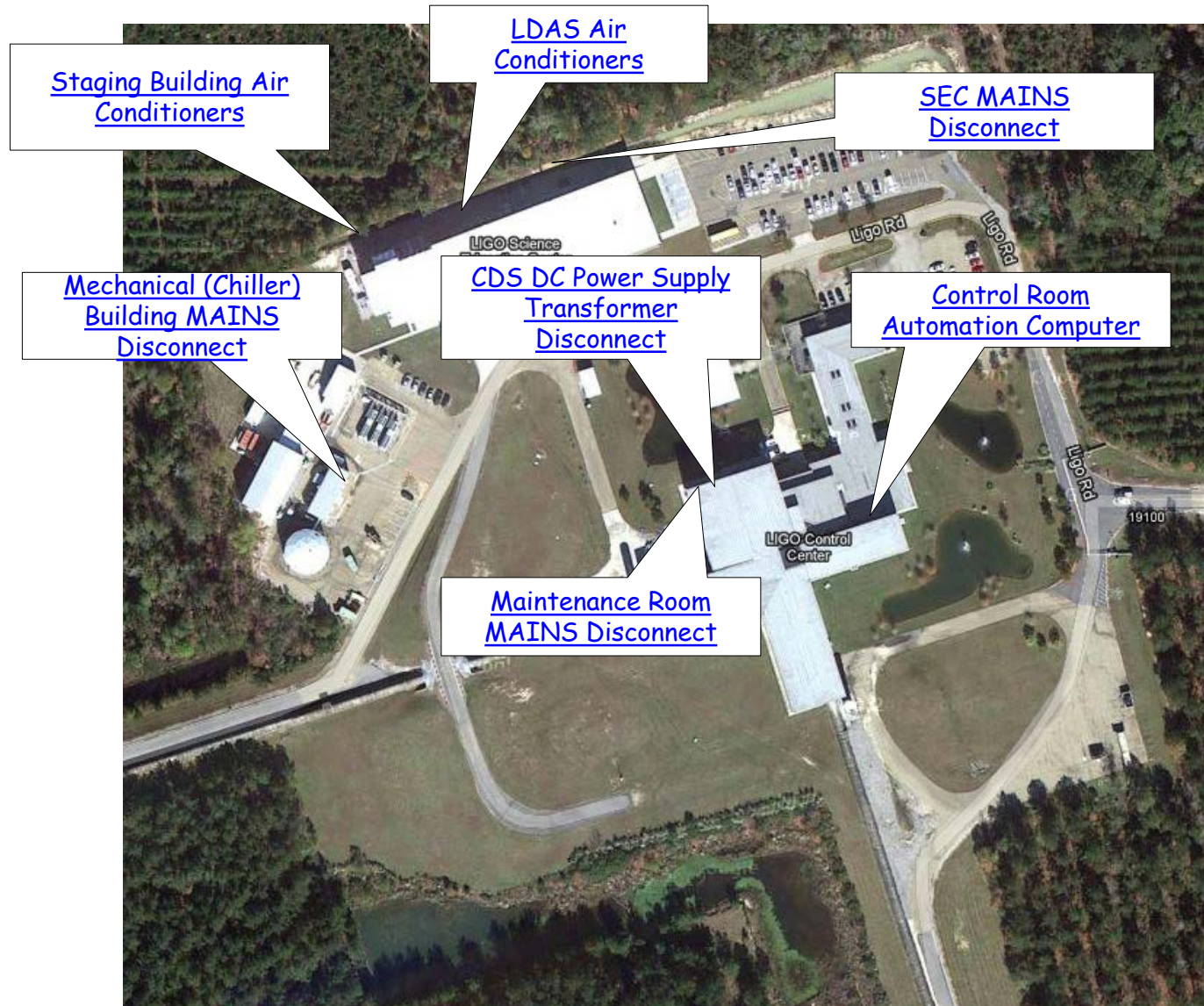


# LIGO Friendly Power Shutdown for LLO Corner Buildings

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There are two kinds of power shutdowns: Friendly, meaning we planned it, and Unfriendly, meaning the universe burped. This procedure is intended to identify Friendly power shutdown procedures. Initially, it is incomplete because eventually each subsystem using DC power must provide a procedure for that specific subsystem.

# Power Shutdown Locations



1. Shut down the bake ovens in the VPW.
2. Shut down the LDAS computers.
3. Shut down the three air conditioners for the Staging Building.
4. Shut down the three air conditioners for the LDAS room.
5. Turn off the Chillers using the Automation Computer in the Control Room.
6. De-energize the MAINS in the Mechanical Building.

These MAINS in the Mechanical Building control power to:

1. The Mechanical Building
2. The Vacuum Processing Warehouse (VPW)
3. The Staging Building including:
  - a) The High Bay
  - b) The Offices
  - c) The LDAS Room
  - d) HPLF
  - e) The Banquet Room
4. The House Trailer

1. Energize the MAINS in the Mechanical (Chiller) Building.
2. Turn on the Chillers using the Automation Computer in the Control Room.
3. Start up the air conditioners for the LDAS room.
4. Start up the air conditioners for the Staging Building.
5. Start up the LDAS computers.
6. Start up the bake ovens in the VPW.



MAIN BREAKER

SWBD L-CC-192-SB-01  
480Y/277V 3Ø-4W  
2000 AMPERES

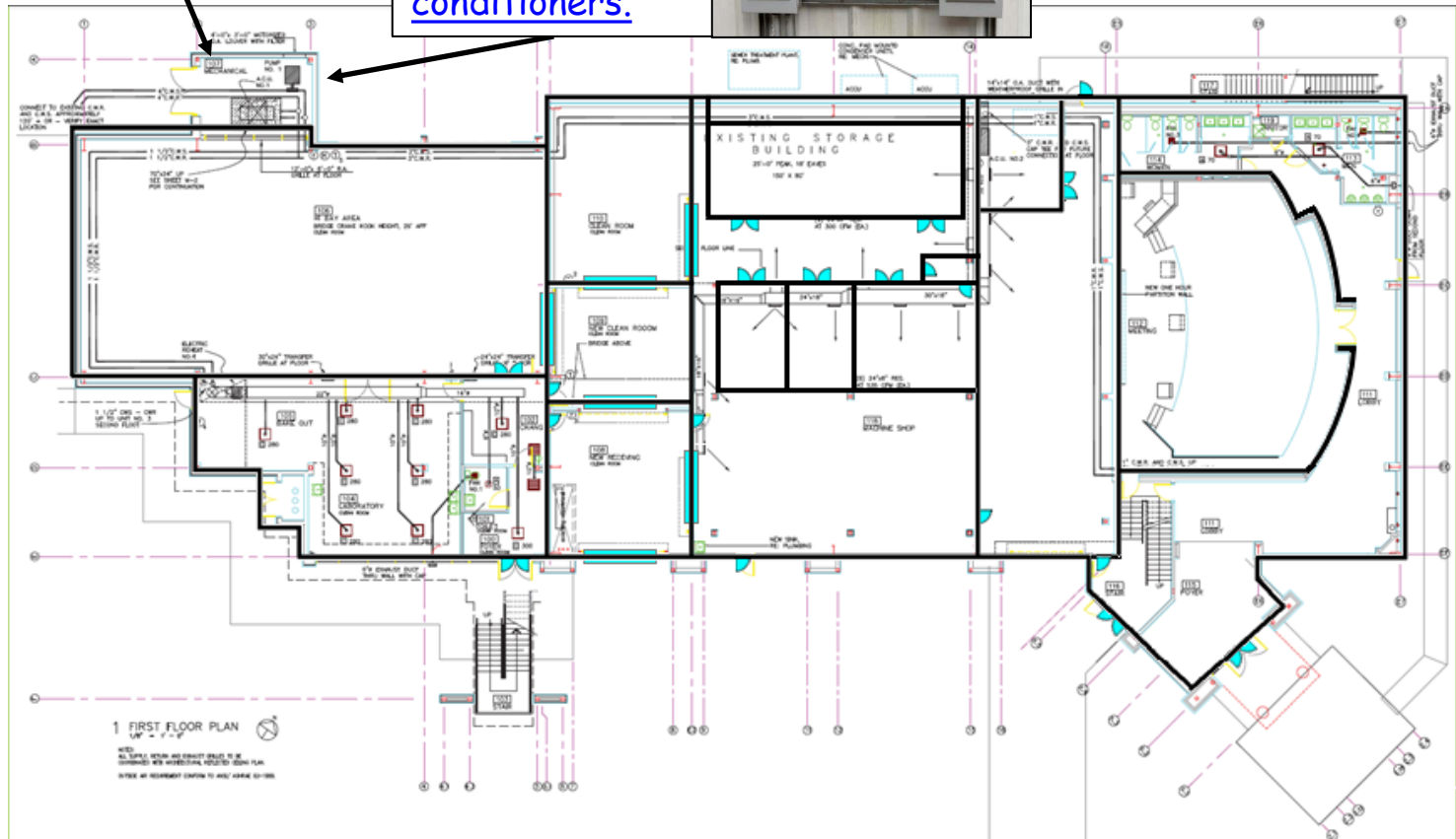


- << Locations
- << Shutdown Instructions
- << Startup Instructions



Air Conditioner #1 is inside, in Panel PNL MDP, Circuit ACU #1

Air Conditioners #2 and #3 is outside, near the air conditioners.



## Staging Building Air Conditioner 1 Disconnect

- [<< Staging Building Locations](#)
- [<< Shutdown Instructions](#)
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AC #1 - Use BREAKER to shut off.

[<< Staging Building Locations](#)

[<< Shutdown Instructions](#)

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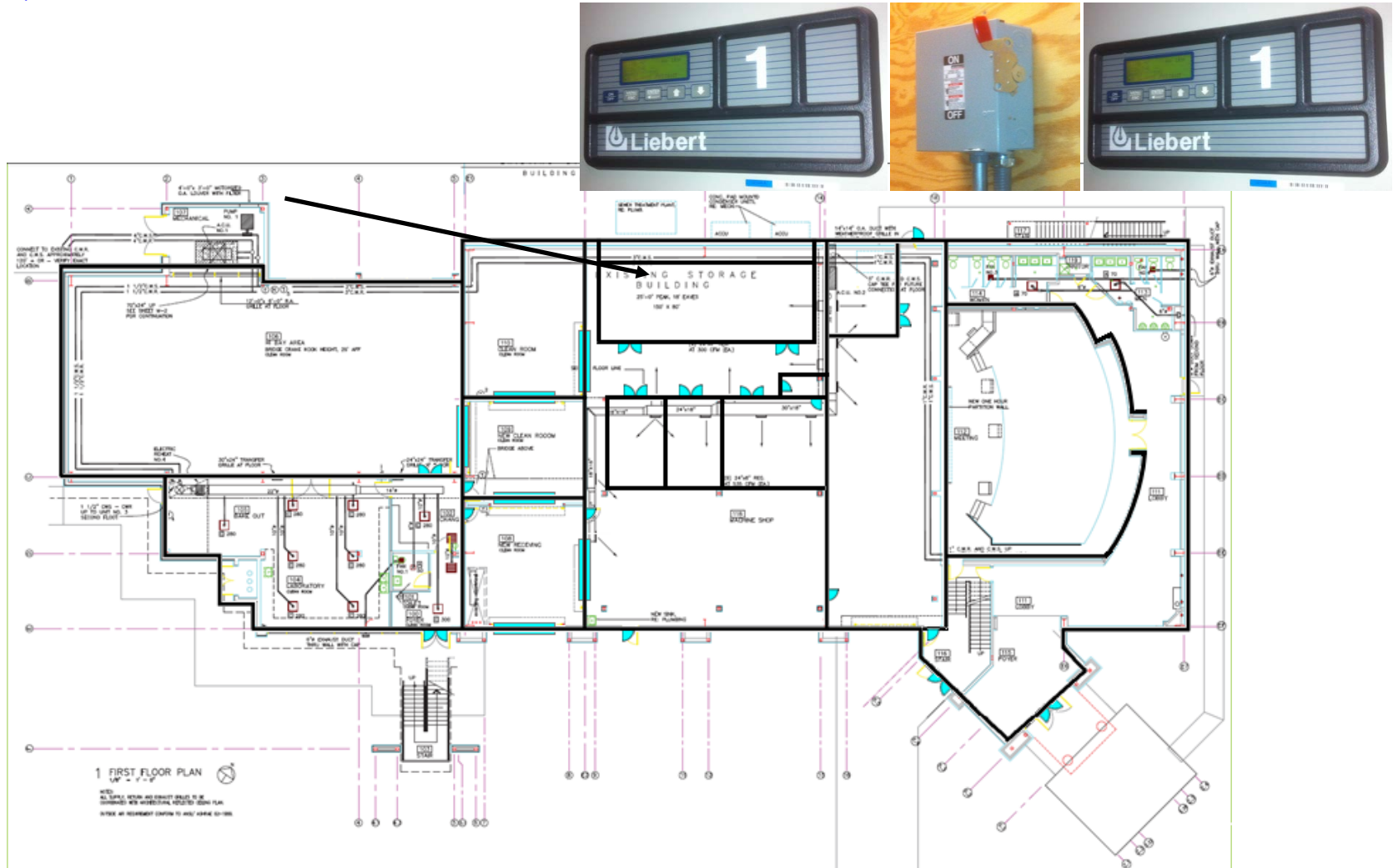
AC #2 - Use DISCONNECT to shut off.

AC #3 - Use DISCONNECT to shut off.





- << [Locations](#)
- << [Shutdown Instructions](#)
- << [Startup Instructions](#)



# LDAS Air Conditioning Shutdown

## LDAS Air Conditioners

AC #1 - Use  
CONTROLS to  
shut down.



AC #2 - De-energize  
with disconnect switch.



AC #3 - Use  
CONTROLS to shut  
down.



## LDAS Air Conditioning Startup

### LDAS Air Conditioners

AC #1 - Use  
CONTROLS to  
start up.



AC #2 - Energize with  
disconnect switch.

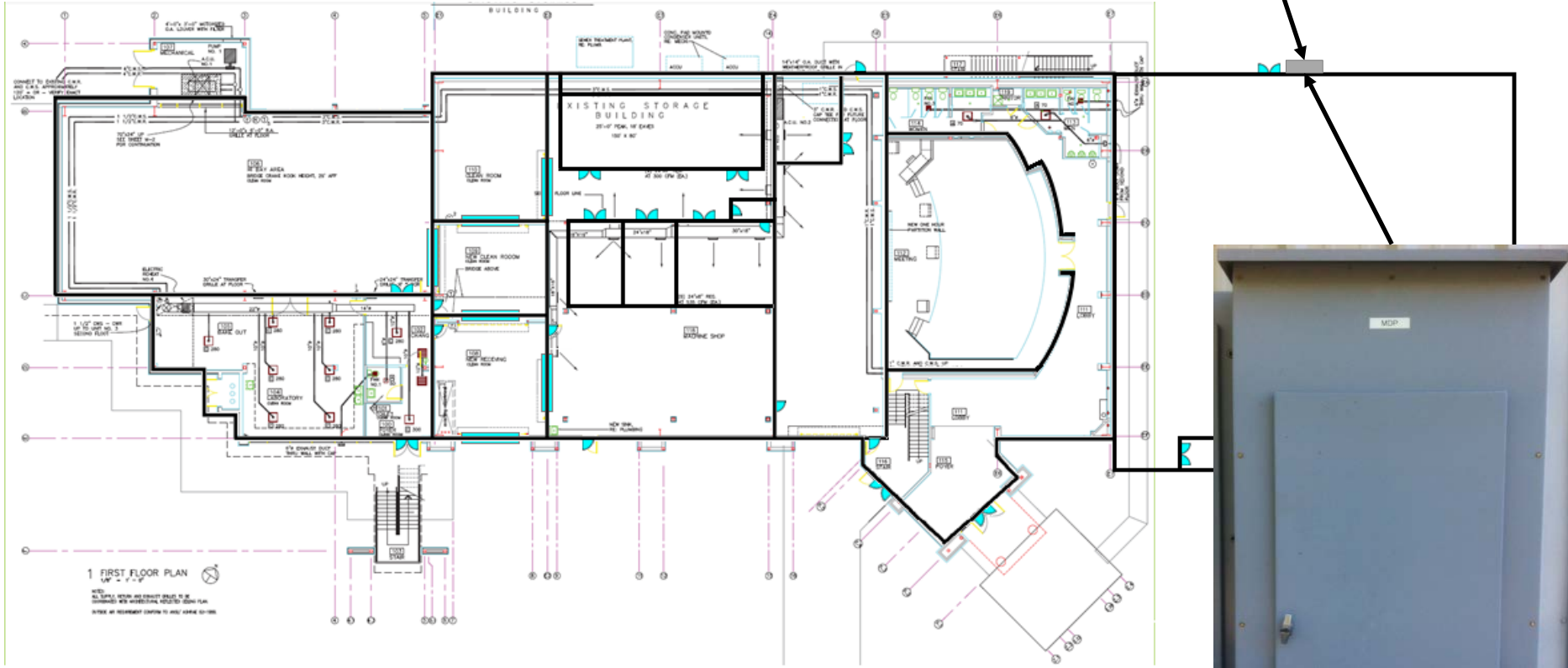


AC #3 - Use  
CONTROLS to  
start up.



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[SEC MAINS Disconnects](#)



- [<< SEC MAINS Location](#)
- [<< Shutdown Instructions](#)
- [<< Startup Instructions](#)



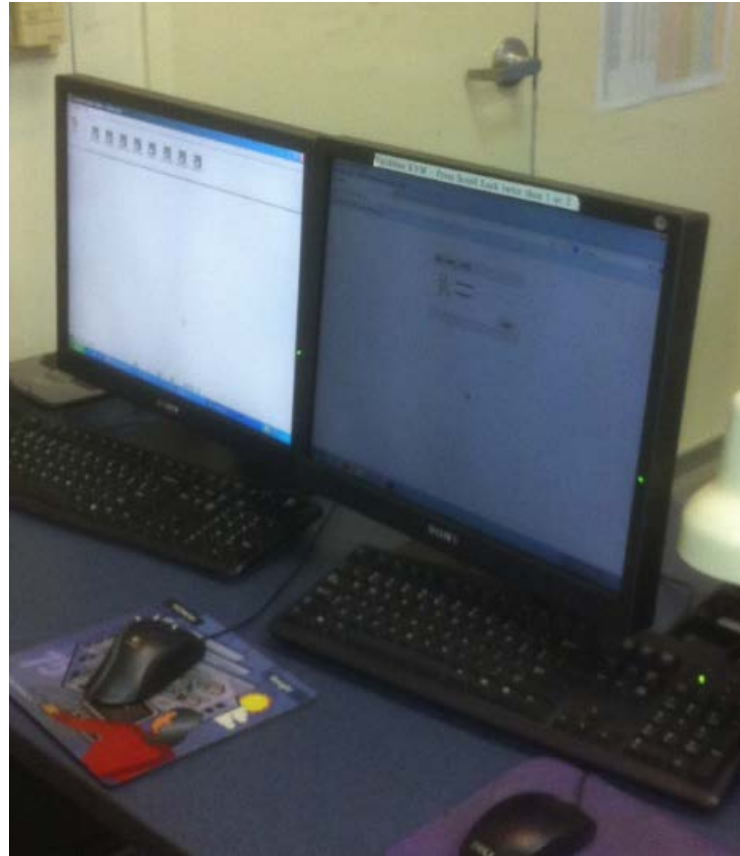
1. Turn off power to the LP Panel .
2. Turn off power to the RP Panel .
3. Turn off power to the MP Panel .



[<< SEC MAINS Disconnects](#)

1. Turn on power to the LP Panel .
2. Turn on power to the RP Panel .
3. Turn on power to the MP Panel .

# Automation System Computer in the Control Room



1. Ramp down and turn off the LVEA fans using the Automation Computer in the Control Room.
2. Turn off air handler 4 using the Automation Computer in the Control Room.
3. De-energize the DC Transformer breaker switch.
4. De-energize the MAINS in the Maintenance Room.
5. Turn off all subsystem DC supplies. (Optional)

These MAINS in the Maintenance Room control power to:

1. The Office Support Building (OSB)
2. The Laser and Vacuum Equipment Area (LVEA)
3. All computers that are NOT on their own UPS systems, but note that the times for power backup vary considerably.
4. The Guard Shack

The DC Supplies fall into roughly three categories:

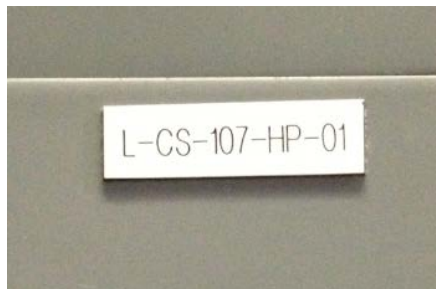
1. The +12VDC Supplies used for Timing Chassis
2. The +24VDC Supplies that power IO Extender Chassis
3. All the rest, which are subsystem dependent

1. Energize the MAINS in the Maintenance Room.
2. Energize the DC Transformer breaker switch.
3. Turn on air handler 4 using the Automation Computer in the Control Room.
4. Turn on and ramp up the LVEA fans using the Automation Computer in the Control Room.
5. Turn on DC Power Supplies for each subsystem according to specific procedures for that subsystem. (Optional)

# Maintenance Room MAINS Disconnect



# CDS DC Transformer Breaker Switch





# CPR - DC Power Supplies

ISC  
PSL  
SEI  
SUS  
TCS  
DAC

