

MEC Department Procedure

Document Approval (signature/date)

Name / Title	Signature	Date
Glass Laser Full Power Shutdown Procedure		

Table of Contents

1	Purpose.....	3
2	Scope.....	3
3	Responsibilities.....	3
4	Procedure.....	3
4.1	When Python Terminal is Available.....	3
4.2	When Python Terminal is NOT Available	5
5	Revision History	7

1 Purpose

The purpose of this document is to provide relevant information to cover the scope of work necessary to power off the Glass Laser in MEC.

2 Scope

To proceduralize the shutting down of equipment before a planned power outage and to proceduralize bringing the Glass Laser back up after a planned or unplanned power outage.

3 Responsibilities

Kayla Pflueger	Controls the content of this document.
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4 Procedure

Planned Power Outage:

In the event of a planned power outage the following procedure will provide guidance in shutting down the MEC Glass Laser.

4.1 The following steps are for when a Python terminal is available:

- 1) To start shut down tasks first start Python from a terminal on a hutch computer and type the following commands in order:
 - a. Ssh mec-laser
 - b. mecpython
 - c. from mecps import*

- 2) Once the Python terminal type YPEoff() to shut down the following:
 - a. eDrives (eDrives will have AC power, but drive current is ramped down to zero)
 - b. Vacuum Scroll Pump (AC power off)
 - c. Pockets Cell Driver YFE Out (AC power off)
 - d. Pockets Cell Driver YFE PS1 HV (AC power off)

- 3) Next pull up the MEC Home Main Page on EPICS
 - a. Select User Devices
 - b. Select AC PDU
 - c. Select MEC:64B:PWR

MEC AC POWER DISTRIBUTION

PDU NAME	ID	Temp	Humidity
MEC:R60:PWR		Not Found	Not Found
MEC:R61:PWR:1	A1	Temp_Humid_Rack Lower	30.5 C 27 %
	B1	Temp_Humid_Rack Upper	23.5 C 42 %
MEC:R62:PWR		Not Found	Not Found
MEC:R62:PWR:1	A1	Temp_Humid_Sensor_A1	27.0 C 32 %
	A2	Temp_Humid_Sensor_A2	26.0 C 34 %
MEC:R62:PWR:2	B1	Temp_Humid_Sensor_B1	22.0 C 47 %
	B2	Temp_Humid_Sensor_B2	21.5 C 48 %
MEC:64A:PWR:1	A1	Temp_Humid_Sensor_A1	Not Found
	A2	Temp_Humid_Sensor_A2	Not Found
MEC:64A:PWR:2	A1	Temp-Humidity Return	21.5 C 48 %
	A2	Temp-Humidity Supply	21.0 C 49 %
MEC:64B:PWR		Not Found	Not Found
MEC:M264A:PWR:1	A1	Temp_Humid_Sensor_A1	Not Found
	A2	Temp_Humid_Sensor_A2	Not Found
MEC:RS68:PWR:1	A1	Temp_Humid_Sensor_A1	Not Found
	A2	Temp_Humid_Sensor_A2	Not Found
MEC:PR60:PWR:1	A1	Temp_Humid_Sensor_A1	Not Found
	A2	Temp_Humid_Sensor_A2	Not Found

ServerTech Sentry3 PDU and Environment Monitor

MEC:64B:PWR Loc |mec r64b 10

Power Distribution Unit Status

Input Feeds: Tower 1, Tower 2, Load High Threshold, Input Feed Load, Input Feed Status

All Sensor Thresholds: Temperature, Humidity

Water Sensor: Water_Sensor_B

Environmental Sensor Status

ID	Name	Temp	Humidity	Temp Thresholds Low	Temp Thresholds High	Humidity Thresholds Low	Humidity Thresholds High
A1	Temp_Humid_Sensor_A1	Not Found	Not Found	5 C	45 C	10 %	90 %
A2	Temp_Humid_Sensor_A2	Not Found	Not Found	5 C	45 C	10 %	90 %
B1	Temp_Humid_Sensor_B1	30.5 C	32 %	5 C	45 C	10 %	90 %
B2	Temp_Humid_Sensor_B2	30.5 C	31 %	5 C	45 C	10 %	90 %

Outlet Status

ID	Name	Status	Crit State	Load	Load Status	Control Action
A1	RESERVED	On	Wake On	0.0 A		Turn Off Reboot
A2	XES_laser_shutter_ctrir bo	On	Wake On	0.0 A		Turn Off Reboot
A3	XES_laser_shutter_ctrir top	On	Wake On	0.0 A		Turn Off Reboot
A4	PSM-05 (16ch motor power)	On	Wake On	0.0 A		Turn Off Reboot
A5	LSS_screen+RFID	On	Wake On	0.0 A		Turn Off Reboot
A6	SER-19	On	Wake On	0.0 A		Turn Off Reboot
A7	loc-mec-lplmb01	On	Wake On	0.0 A		Turn Off Reboot
B1	Highland_AWG	On	Wake On	0.0 A		Turn Off Reboot
B2	loc-mec-wave8	On	Wake On	0.0 A		Turn Off Reboot
B3	loc-mec-lpl01	On	Wake On	0.0 A		Turn Off Reboot
B5	wim-ics-mec-phsics01	On	Wake On	0.0 A		Turn Off Reboot
B6	wim-ics-mec-phsics02	On	Wake On	0.0 A		Turn Off Reboot
B7	LeCroyA	On	Wake On	0.0 A		Turn Off Reboot
B8	MBC_bias_controller	On	Wake On	0.0 A		Turn Off Reboot

MEC AC Power Distribution Screen

MEC:64B:PWR Pop Out Page

- 4) At MEC:64B:PWR Pop Out Page
 - a) Turn off "B1" Highland
 - b) Turn off "B7" LeCroy A
 - c) Turn off "B8" MBC Bias Controller

The following steps are for when a Python terminal is NOT available:

- 1) At each of the 6 eDrives:
 - a. Press the “Emission” button of each eDrive (Once pressed the button should not be illuminated)
 - b. Turn the keyswitch to the off position



eDrive example

- 2) At each of the 4 TDK Power Supplies:
 - a. Press the “Out” button so it is not illuminated
 - b. Toggle the power switch (on the top left corner) to the off position



TDK Power Supplies



TDK Power Supplies



TDK Power Supplies “Out” Button

- 3) At each of the 4 PolyScience water chillers:
 - a. Press the Power Button on the front panel on the right side to power off



PolyScience Water Chillers

- 4) At Rack B999-S60 unplug the following PDU components:
 - a. “Vacuum Scroll Pump” Outlet 7
 - b. YFE Pockels Driver Outlet 1
 - c. Pockels Cell YFE Out Outlet 6
- 5) At Rack B999-64B:
 - a. Toggle the back panel power switch of “Highland”
 - b. Toggle front panel power switch of “Lecroy A”
 - c. Toggle front panel power switch of “Lecroy B”
 - d. Unplug MBC bias controller at PDU outlet #8
 - e. Toggle front panel “pump” switch of NP Photonics “Rock” seed laser and turn the key switch to off position



“Highland” Back Panel Power Switch



“Lecroy A” Fron Panel Power Switch



“Lecroy B” Front Panel Power Switch

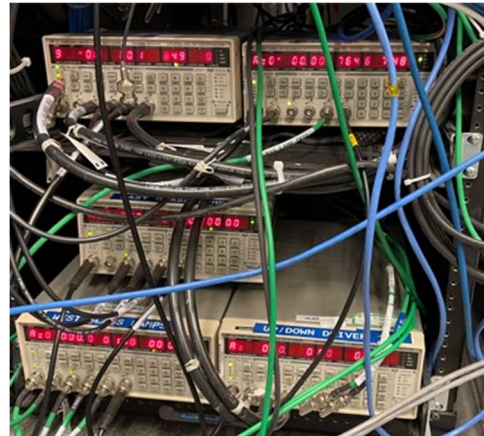


NP Photonics Front Panel Switch

- 6) Miscellaneous Items:
 - a. Under the Optical table turn off “Mobile LeCroy Scope” (toggle switch bottom left)
 - b. Under the Optical table turn off BK Precision DC Power Supply (toggle green power switch)
 - c. Power of all 5 DG654 units at the S60 rack
 - d. Power off the 2 DG645 uits at the eDrive rack
 - e. Power off the MFroce Chassiss and Newport controller at Rack B999-PR62
 - f. Power off Newport controller MCN-MEC-LAS3 (under optical table Northwest aisle)



BK Precision Power Supply



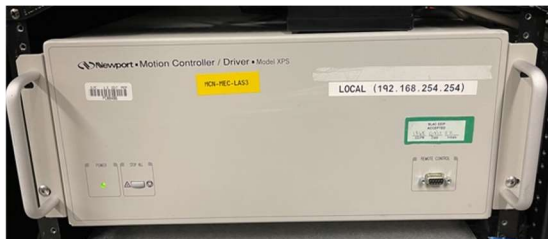
DG645 at Rack S60



DG645 at eDrive Rack



B999-PR62 Rack



Newport Controller (Northwest Isle)

5 Revision History

Revision	Date Released	Description of Change
R002		
R001		
R000	09/25/2021	Original Release.