

LAWRENCE BERKELEY NATIONAL LABORATORY COMMUNITY ADVISORY GROUP

PUBLIC SAFETY POWER SHUTDOWNS

MICHAEL BRANDT

NOVEMBER 5, 2019



1

PG&E Public Safety Power Shutdowns

- **Event 1: October 9 - 14**
- **Event 2: October 26 - 30**

2

Power Shutdown Impacts at LBNL

- **Video**
- **Timeline**
- **Impacts at the Lab**
- **What is an EOC?**
- **Brainstorming: Continuity of Operations**
- **Regional Events Affect Us All**

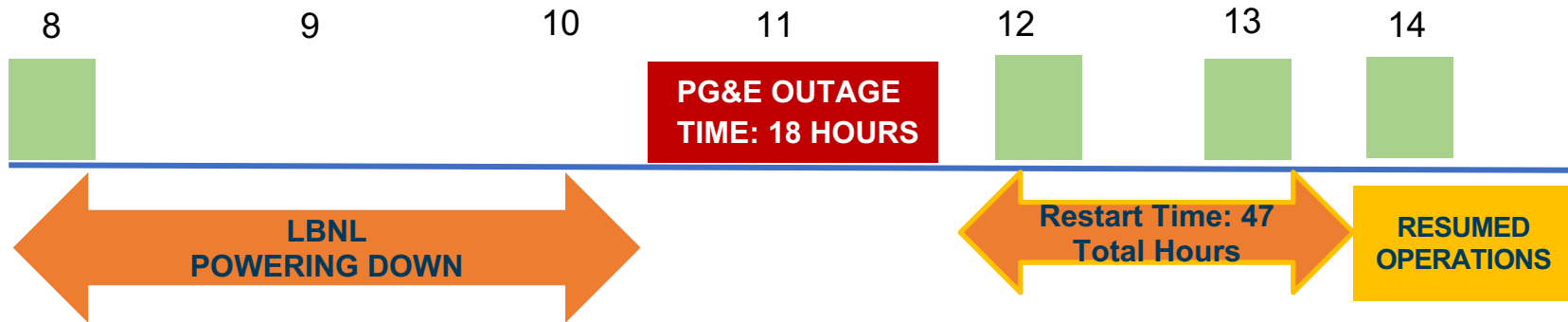
PG&E POWER SHUTDOWN: PSPS 1



PUBLIC SAFETY POWER SHUTDOWNS



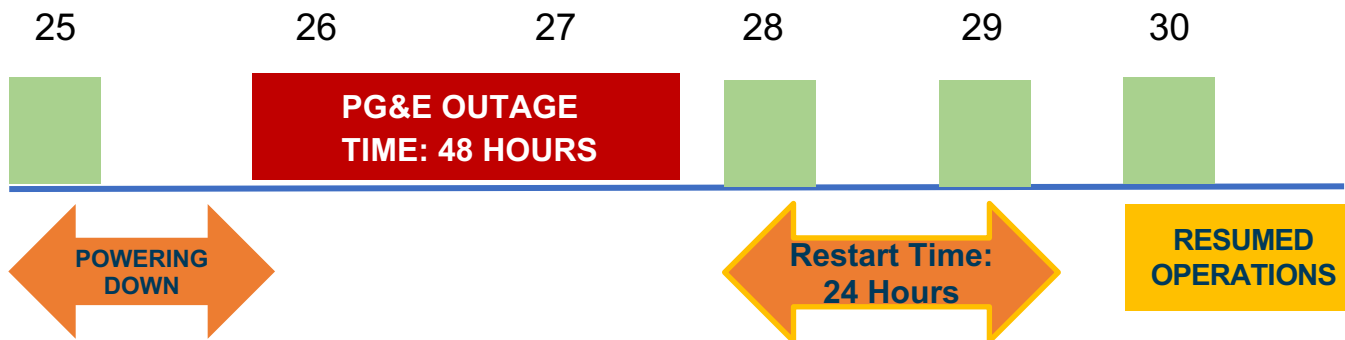
EVENT 1: October 8 - 14 EOC & Power Timeline



TOTAL EVENT DAYS: 5.5

LAB CLOSURE: 3 BUSINESS DAYS

EVENT 2: October 26 - 30 EOC & Power Timeline



TOTAL EVENT DAYS: 4.5

LAB CLOSURE: 2 BUSINESS DAYS



POWER OUTAGE IMPACTS: PSPS 1



INJURIES OR ACCIDENTS: **ZERO**

LOST OR DAMAGED RESEARCH MATERIALS: **ZERO**

EOC, FACILITIES, EH&S PERSONNEL:
120

EXTENDED STAFF, INCLUDING SCIENCE
ORGANIZATIONS:
240

OUTAGE EFFECT ON USER FACILITIES:

EsNET: **UNAFFECTED**

JGI: **UNAFFECTED**

NERSC: **DOWN 5.5 DAYS**

ALS: **DOWN 5.5 DAYS**

MOLECULAR FOUNDRY: **DOWN 5.5 DAYS**



SCIENCE IMPACT: PSPS 1



ALS : Some ALS technology is not available anywhere else in the country. Users must schedule beam time in 6 month cycles. For some users, the first available re-scheduling dates after the PSPS events is February 2020 or beyond.

Between the two PSPS events, roughly 250 users lost pre-scheduled beam time.

Timing of planned upgrades to the ALS facility will be Impacted by the power outages.



WHAT IS AN EOC?



EMERGENCY OPERATIONS CENTER

An Emergency Operations Center, or EOC is a vital component of any organization that plans to operate on a 24/7, 365 days a year cycle.

The EOC consists of a variety of essential decision-making roles, appropriate to the organization.

Transit centers, laboratories and universities for example, all have an EOC that can be activated in the event of an internal or external emergency.

INCIDENT ACTION PLAN



LBL EMERGENCY OPERATIONS CENTER **SIX** INCIDENT OBJECTIVES

1. Ensure the safety of on-site personnel
2. Ensure the safety and stability of the facility
3. Proactive communications with stakeholders
4. Planning for the resumption of operations
5. Establish an internal and external communications plan and cadence
6. Develop an EOC staffing and relief plan

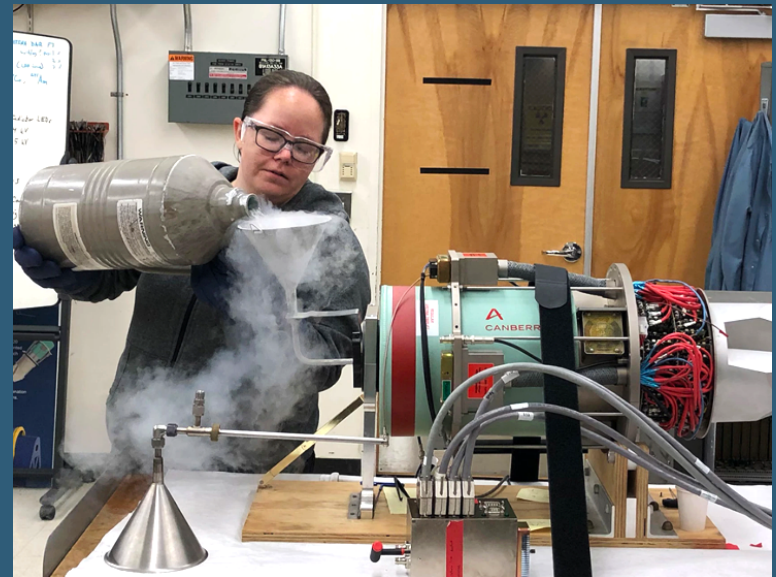


LESSONS LEARNED



ADVANCE PLANNING THE KEY TO SUCCESS

Our Power Outage Working Group spent months planning for this possibility, to identify obstacles and create plans to disconnect the Lab from the power grid. PG&E had warned that the power could stay off for several days, until their crews could inspect power lines and repair any damage.



LESSONS LEARNED

FOCUS ON SAFETY:

We started each day with a strong safety message and team-developed objectives. Objectives included safety as a priority for all response personnel. Safety was continually stressed in all meetings and event messaging. **Event concluded with zero injuries and no lost research materials.**



LESSONS LEARNED



RESEARCH AREA REPRESENTATIVES IN EOC:

Critical to have strong representation for each science and research area in the EOC. These pre-qualified Mission Support Officers enabled us to reach back, ask questions, validate actions, and ensure the correct leaders and SMEs were involved in decisions.



LESSONS LEARNED



STRATEGIC COMMUNICATIONS

Communicated status updates to UCOP and DOE Office of Science. Employees were notified through Level-1 emails, LabAlert messages and our status.lbl.gov website. Daily conference calls with ALD's and DD's and daily leadership summaries went out directly from the COO.



LESSONS LEARNED

FUTURE PLANNING:

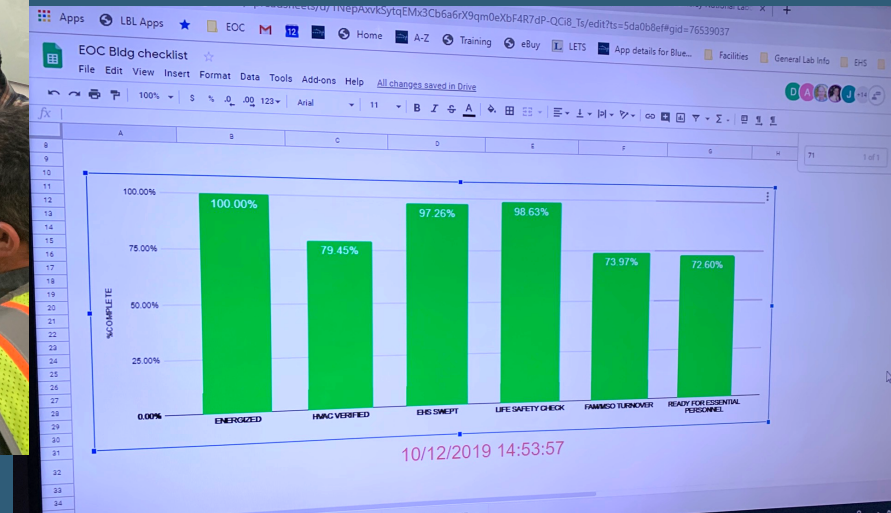
Identify “Essential Emergency Personnel” for Pre-Event, Throughout-Event and Post-Event assignments, including their specific functions and contact information. We found we will need a means of tracking our people while they are working on-site.



LESSONS LEARNED

METHODICAL RE-ENERGIZATION PLAN:

We deployed a methodical and meticulously managed multi-step plan to re-energize buildings and make them safe for re-occupancy. Second shifts operated to relieve fatigued work crews.



BRAINSTORM: CONTINUITY OF OPERATIONS



A) PLAN FOR EXTENDED OPERATIONS WITHOUT POWER

**B) HARDEN LABORATORY INFRASTRUCTURE
AGAINST DAMAGE FROM POWER LOSS**

C) MAINTAIN POWER CONTINUITY

- 1. Create a diverse power system including localized power alternatives**
- 2. Improve the reliability and safety of PG&E transmission lines**

REGIONAL EMERGENCY



REGIONAL EMERGENCIES IMPACT US ALL



A San Luis Obispo firefighter fights a blaze at a winery in Sonoma, Oct. 27, 2019. /San Luis Obispo Fire Department-Twitter

QUESTIONS?

THANK YOU

