

## POWER DISRUPTIONS & OUTAGES AT PUBLIC SWIMMING POOLS

During a power outage, pool filtration and water quality can be disrupted, causing unsafe conditions with insufficient disinfectant levels and water characteristics ripe for disease causing organisms. Power outages can also cause system failures prompting loss of pool lighting necessary for nighttime use. System failures can also trigger uncontrolled feeding of chemicals; raising the possibility for exposure at highly toxic levels. Proper reinstatement of all equipment function is a necessary safeguard against possible injury or death. The California Code of Regulations, Title 22, Chapter 20, Article 3, Section 65525 requires the recirculation system be in operation when the pool is available for use.



Initiate your **emergency action plan**. Take the following steps in the event of a power outage:

1. Distribute flashlights for staff to direct evacuation (indoor pools and pools open at night)
2. Immediately evacuate then CLOSE the pool.
3. Install closure signs at every entrance.

The pool must remain closed and can only be reopened once POWER IS RESTORED TO ALL EQUIPMENT and the following conditions are met:

- Recirculation, filtration, and lighting are fully functioning.
- Disinfectant, pH, and all other water characteristics are reestablished.
- Regulating components and timers (if used) are reset.
- Automated control systems, if available, are restored to full operation with functioning flow switch or sensors. Chemical controllers should at all times operate continuously and in accordance with manufacturer specifications. However power outages may cause disruption and possible malfunction of systems and components. Following a power outage, consult with a service professional with chemical control system expertise for further evaluation of the chemical controller. Malfunctions must be prevented from allowing incompatible chemicals to mix. To safeguard against exposure to high levels of

chemicals from any type of system or component failure, low flow, or interrupted operation; fail-proof features for chemical feed systems are necessary.

*Refer to the Contra Costa Environmental Health Guidelines for Chlorine Off-Gassing At Swimming Pools for further information.*

Repairs or alterations to electrical devices, associated components, and equipment must sustain compliance with the National Electrical Code (NEC) or with applicable local codes. The installation of such items or fail-proof features falling outside the scope of Environmental Health may require consultation and approval from the local Building Authority.

- Finally, record all calendar dates and timeframes associated with the incident and include written assessments with corrective measures following consultation with your service professional.

## Reporting Requirements

Any drowning, chemical injury, waterborne illness, and rescue requiring resuscitation or medical facility attention will require reporting to Contra Costa Environmental Health as quickly as possible but **within 24 hours**.

### **EMERGENCY ACTION PLAN (recommended for commercial facilities and venues)**

An effective emergency response plan begins and ends with good management and supervision. Planning will include procedures for emergency situations, reporting requirements, restoration of facility operations, implementing practice drills, and performing self-inspections; all of which should be incorporated into a written emergency action plan, as required by SARA Title 3. The written plan should be specifically developed and tailored to characteristics unique to each facility. If your swimming pool has a permit from your local Hazardous Materials Programs due to the quantities of hazardous material(s) stored at your facility, you likely have already prepared an Emergency Action Plan.

Consult with service professionals with expertise in developing emergency action plans specific to public pools. Local hazardous material and fire personnel should be consulted for issues pertaining to chemical storage. Once complete, put the plan into action. Emergency drills should be practiced routinely.

## Emergency Response

Dangerous situations can vary. Irrespective of risk level, any situation with imminent hazards jeopardizing health and safety can be considered an emergency. Applying the following countermeasures in response to emergencies is recommended:

- 1) Manage the emergency
  - Coordinate with staff and confirm your mode of communication. Effective communication is essential.
  - Develop a chain of command as part of your emergency response plan. Phones must be available and conveniently located. Emergency phone numbers must be prominently posted. A method of communication between staff using whistles and hand signals should also be established.
  - Develop a contact list prescribing assignments and responsibilities.
- 2) Assign Responsible Staffers

Designate staff members for emergency situations. Assignments should be relegated according to skill. For instance, lifeguards are better qualified to perform emergency rescue than the facility manager. Likewise, the facility manager may be better equipped to report incidents and supervise exercise drills. Assign staffers for each of the following actions:

- Emergency rescue and first aid to injured parties (typically performed by lifeguards).
- Immediate contact of emergency personnel (local fire and rescue).
- Initiate closure of the facility. Begin evacuation and clearing procedures and install closure signs at all entrances.
- Direct traffic.
  - Crowd control: Usually a large number of people congregate at the scene of an emergency. The emergency plan must include clearing the incident area and crowd control with on-going supervision of the facility.
  - Meeting and guiding emergency personnel to the site and/or injured party. During an emergency it's extremely important to provide rescue personnel with facility layout information. Access for emergency personnel should be evaluated with routes determined in advance.

### **Reporting Requirements**

Any drowning, chemical injury, waterborne illness, and rescue requiring resuscitation or medical facility attention will require reporting to Contra Costa Environmental Health as quickly as possible but **within 24 hours**.

- 1) Produce records indicating the number of pool users, all lifeguards on duty, water characteristics, equipment maintenance including failures and malfunctions.
- 2) These records must be available for review by the Permit Issuing Official for at least 2 years.

### **Restoration of Facility Operations**

Depending on the state and complexity of the operations, consultation from service professionals may be necessary to evaluate all system operations prior to resuming reopening. Equipment function and water characteristics must be restored. Regulation components and automation systems must be assessed and adjusted accordingly. Keep inventory record and data of all incident situations including written assessments with corrective measures taken by you and consultant or service professional.

### **Practice Drills**

Practice makes perfect and training is essential for emergency response situations. Staff members assigned to emergency response must be trained. Provide training with frequent practice to reinforce the principles and routinely rehearse the plan.

- 1) Practice emergency response drills including passage routes for directing emergency personnel.
- 2) Practice lifesaving skills to sustain proficiency in performing rescues.
- 3) Practice search procedures for lost bathers.
- 4) Practice flashlight distribution for staff, applicable to indoor pools or pools open at night, without the presence of natural night.
- 5) Practice all other response protocols; site specific and tailored for your facility.

## **Self-Inspections**

Ensuring good facility maintenance will minimize equipment failures, disruptions, and reduce delays during emergencies. To help ease your response to emergency situations, perform compliance checks of your own accord. Develop an inspection checklist or adapt the inspection report issued by Contra Costa Environmental Health to identify the wide range of health hazards including unsafe water conditions, broken equipment, inadequate safety signs, missing rescue devices, electrical equipment malfunctions, broken/loose suction outlet covers, missing first aid kits, broken gates and fences, etc. Take action to correct any deficiencies. Close the pool, restrict public access, and post closure signs when encountering imminent health hazards that can't be corrected.

## **After the emergency**

Preparing for an emergency is extensive and includes many responsibilities. Proficiency in record keeping, retaining reports, reassessing and replacing equipment are few of the multiple issues to deal with. Staff debriefing should be implemented following the emergency. For further information on developing an emergency response plan, consult with industry professionals and refer to the following online resources:

<https://emergency.cdc.gov/>

<https://nspf.org/>

<https://apsp.org/>