




Dam Safety Program
2600 Bull Street
Columbia, SC 29201

Dam Owner Education Opportunities

The Dam Safety Program will be offering a series of 1-day workshops for dam owners starting with the first workshop to be held at DHEC's Columbia headquarters in November 2018 (exact date still to be determined). This workshop is titled "Dam Ownership 101" and will be led by an instructor provided by the Association of State Dam Safety Officials, a well-regarded national organization whose mission is the promotion of dam safety and of which SC DHEC is a member. The Dam Ownership 101 workshop covers the following topics: State Dam Safety Laws and Regulations, Dam

Failure Modes and Case Histories, Operation/Maintenance/Safety Inspections of Dams, Emergency Action Plans, Public Safety, Dam Security, Dam Owner Liability, Dam Repair Projects – Hiring an Engineering Consultant, Dam Repair Costs, and Funding Options. Please respond to the Dam Safety Program at response@dhec.sc.gov to express your interest in attending this and future workshops. Your response will be extremely helpful in helping us make appropriate preparations for a pleasant and successful workshop!



We're On Call
Dam Safety Program
Staff are available
24-7 in the event of an
emergency situation at
803-898-1939

www.scdhec.gov/dams



South Carolina Dam Safety News

ISSUE 2

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A Message from Myra Reece, Director of Environmental Affairs

Dams play a critical role in sustaining our infrastructure, protecting our citizens from the impact of flooding, and creating recreational opportunities for our citizens. The South Carolina Department of Health and Environmental Control (DHEC) recognizes the challenges that come with aging dams, determining dam ownership, and the cost to owners for repairing and maintaining the dams.

Since the historic rainfall in October 2015 and Hurricane Matthew in 2016, DHEC has continued to grow its Dam Safety Program; it has added an additional 12-15 full-time employees. Our staff are also supplemented with interns as well as contract engineers. By doing this, we are building capacity within the program and developing a workforce for the future.

Through our CodeRed program, owners are now advised of pending storms and actions they should consider taking both before and after the storms. Staff have worked diligently to revise all Emergency

Action Plans (EAPs) for High and Significant Hazard dams. We continue to improve our modeling tools and are constantly evaluating downstream impacts to ensure hazard classifications are accurate and owners have the most up-to-date EAPs should an emergency arise.

There is still much work to do in regards to the recovery of South Carolina, including independent inspection follow-up, development of tools for dam owners and ongoing program maintenance. However, DHEC continues to work with the S.C. Legislature as well as our dam owners through our Dams Advisory Group to improve laws and regulations for our local dams. We will continue to put an emphasis on our High and Significant Hazard Dams in order to protect the citizens of South Carolina.

Inside this newsletter, you will see the tremendous amount work our staff as well as our dam owners have done to continue the work of recovering and moving forward with dam safety.

Transferring Ownership

Changes in ownership of a dam must be reported to DHEC. The South Carolina Dam Safety Regulation 72-6 states "The owner of any high hazard dam or significant hazard dam shall inform the Department in writing within 30 days after title to the dam or reservoir has been transferred from his ownership."

In the event of an emergency, it is important that DHEC has the correct contact information of the current owner.

If you have any questions, please call Meagan O'Leary at 803-898-4050 or email us at response@dhec.sc.gov.

Emergency Action Plans

An Emergency Action Plan (EAP) is a tool used to assist dam owners with emergency preparedness. Many different incidents can lead to dam failure including, but not limited to: high water level, clogged spillways, seepage, erosion, and fallen trees. EAPs guide dam owners and operators through an emergency situation and provide guidance on what to look for, who to call, and

what actions to take. Every High and Significant Hazard dam is required to have an updated EAP.

A recent review revealed that many of the EAPs on file are out of date, so the department developed a new template to help High and Significant Hazard dam owners be prepared to address concerns and/or issues with their dam. The department has

currently provided over 650 EAPs for dam owners. If you are an owner or operator, you should have received or will be receiving in the near future, an EAP template in the mail. If you have questions or need assistance filling out the template please call Sam Johnson at 803-898-1767 or email us at response@dhec.sc.gov.

Preparing for Summer Storms

June 1 signals the start of hurricane season in the Atlantic. As witnessed in recent years, tropical weather systems can severely impact dams. When intense rainfall or heavy winds are in the forecast, dam owners should begin making preparations. Likewise, a summer thunderstorm that sits over a drainage basin for an extended period of time can drop 6-8" of rain in a matter of hours.

When such an event is forecast or has occurred, dam owners should:

- Evaluate the water level in the pond/lake and determine if water levels can be safely lowered to make room for incoming flows.
- Coordinate with dam owners and/or property owners downstream.
- Routinely clear debris from spillways.

- Review your Emergency Action Plan.
- Keep alert. As the storm passes, watch for rising waters.
- Report any immediate safety concerns to the DHEC Dam Safety Program's 24/7 line at 803-898-1939.

Damside Chat with Kaitlin Mahoney, Area 3 Regional Engineer

Did you know trees are detrimental to the structural integrity of a dam? During significant or even moderate wind events, trees can topple over and leave holes and voids in the dam that can lead to an uncontrolled release of impounded water. Roots can extend significant distances into the dam, allowing water to travel along their path; this situation is called piping, and it can occur without inclement weather events whether the roots are healthy or not. Diseased or dead roots become a larger problem as they decompose. Toppling of trees can create a catastrophic failure. Piping generally starts slow and increases with time, but the voids left by fallen trees increase the rate at which water

is able to escape. These situations can potentially cause the dam to fail and impact homes, roads, and other property downstream.

Trees can also create shade on a dam, which hinders the ability to have sustained grass cover. Bare areas are vulnerable to erosion during rain events and are especially dangerous if the dam over tops. It is recommended that trees and brush be removed from the entire dam, including both slopes, the crest, 15 feet or half the height of the dam (whichever is greater) past the toe, and the emergency/auxiliary spillway. Spillways should be kept clear at all times to prevent restrictions on the flow of water.

DHEC recommends removing tree saplings as soon as they appear; a permit is not required to remove trees less than 4 inches in diameter. Generally, trees larger than 4 inches in diameter also require removal of the stump and roots. Because stump removal can affect the structural integrity of the dam, a permit to remove the trees and stumps through a tree management plan created by a South Carolina licensed professional engineer is needed. If you have any questions regarding the need for a permit, please call John McCain at 803-898-8178 or email us at response@dhec.sc.gov.



Meet Your Area 5 Regional Engineer

The committed engineers and staff who work with dam owners and engineers to make dams safe make up the heart of South Carolina's Dam Safety Program. Each newsletter will highlight a staff member.

Dani Felkel is a 2014 graduate of the University of South Carolina's Mechanical Engineering Program. She began her career with DHEC Midlands Bureau of Environmental Health Services, Environmental Affairs in January of 2015 as the first of six full-time regional dam safety

engineers, as well as a member of the Orangeburg office's Emergency Response Team.

In her time with the Dam Safety Program, Dani has had the opportunity to meet and work with many dam owners across the state. Her favorite thing about working with the program is the time spent out of the office visiting new places, while meeting and helping the dam owners. In her free time, she enjoys traveling with her husband and working with her horses.

CodeRED

DHEC has contracted with OnSolve to utilize their CodeRED emergency notification tool. This new tool allows the Dam Safety Program to send pre-programmed voice calls, text messages, and emails to owners and operators of regulated dams. CodeRED messages are able to be targeted to only those dams in counties that may be affected by a given condition, to specific dams identified by the program, or comprehensively to all dams across the state.

DHEC Dam Safety Alerts notify owners and operators of potential hazards or emergent situations so that they can take any necessary actions to protect or maintain their dam. The program may also utilize this system to request that owners check on the condition of their dam if severe weather has recently affected an area of the state.

In preparation for the upcoming hurricane season and for inclement seasonal weather, DHEC conducted

a test of the CodeRED emergency notification system on May 2. If you did not receive a notification via call, text, or email and believe that you have already subscribed, if you wish to update your methods of contact for alerts, or if you have not yet registered your contact information with DHEC for CodeRED, please call Meagan O'Leary at 803-898-4050 or email us at response@dhec.sc.gov.

DHEC Regional Staff Listing

Area	Regional Office	Dam Safety Staff	Office Phone	Mobile Phone
1	Anderson	Hannah Vinson	864-260-5585	864-276-1907
2	Greenville	Chuck Owens	864-372-3273	864-561-1395
3	Columbia	Kaitlin Mahoney	803-896-0620	803-804-0477
4	Florence	Ryan Sullivan	843-661-4825	843-992-0238
5	Orangeburg	Dani Felkel	803-533-5490	803-614-5222
6	Aiken	Scott Simons	803-898-0073	803-508-9116

