



**2023 PINOPOLIS WEST DAM  
TABLE-TOP EXERCISE**

**June 21, 2023**

**PINOPOLIS WEST DAM  
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## **I. INTRODUCTION**

Santee Cooper is directed by the Federal Energy Regulatory Commission (FERC) to conduct annual exercises to test emergency preparedness and response in the event of a catastrophic dam breach. In compliance with the FERC directive, this year Santee Cooper will conduct a "Table-Top" Exercise of Santee Cooper's Emergency Action Plan for Dam Failure. The exercise will be held on July 20, 2023, from 1000 to 1400 hrs. at Santee Cooper's Main Office Auditorium in Moncks Comer, SC.

State and local governments should be prepared to test the emergency operations plans that have been developed to support Santee Cooper's Emergency Action Plan. The focus of this year's exercise will be the Pinopolis West Dam, adjacent lock, and powerhouse. The West Dam is 1.5 miles long and constructed of compacted earthen fill. The dam is in the southeast corner of Lake Moultrie (approx. 3 miles north of Moncks Corner, SC) and adjacent to the Pinopolis Lock and Powerhouse.

The postulated maximum dam breach for a "Sunny Day" failure would involve a trapezoidal area 73 feet deep with a 300-foot horizontal base and a 592-foot-wide opening at the top. The flood inundation areas along the Cooper River include portions of Berkeley, Charleston, and Dorchester Counties. Maps detailing this inundation are available in your copy of the Emergency Action Plan for Dam Failure (EAP). The conditions described in the exercise scenario are simulated to test the essential elements of emergency action planning.

## **II. PURPOSE AND SCOPE**

While the probability of a catastrophic failure of the Pinopolis West Dam is remote, emergency action plans must be developed, exercised, and updated periodically in a realistic manner. A failure or threatened breach of the dam would impact residents, industry, transients, and travelers in the potential inundation zones downstream of the dam. An actual break may cause severe damage or degradation to rail and highway bridges and other infrastructure in the flooded areas. Many state, county, and municipal government agencies would be immediately involved in both response and recovery efforts.

The focus of this exercise is to ensure the participants are familiar with individual roles, procedures, and responsibilities outlined in the EAP and Pinopolis Dam Site Specific Plan. The "Table-Top" exercise will be executed through discussion in a meeting format led by a facilitator from the SC Emergency Management Division. Effectiveness will be determined by comments from participants and the impact this feedback has on evaluating and revising policies, plans, and procedures. There will be no utilization of equipment or deployment of resources. Therefore, all activities will be simulated, and participants will interact through discussion. A scenario will set the scene for the simulated events. The scenario will describe what has happened and what is known up to the time of the exercise.

As the exercise progresses, the facilitator will advance to predefined times after the breach,

allowing all parties to accomplish their objectives, regardless of how soon after a breach they would be affected.

### **III. OBJECTIVES**

#### **A. Santee Cooper**

1. Demonstrate key personnel's knowledge of the EAP.
2. Discuss alert, warning and communication systems and procedures.
3. Discuss and verify accuracy of notification procedures and call-down lists.
4. Discuss methodology for accurate and timely distribution of information to the public.
5. Discuss Santee Cooper's ability to notify key personnel to respond in a timely manner.
6. Discuss Santee Cooper's ability to evacuate Old Santee Canal Park in a safe and timely manner.

#### **B. South Carolina and Counties (Berkeley, Charleston, and Dorchester)**

1. Demonstrate key personnel' s knowledge of the EAP.
2. Discuss key personnel' s knowledge of the Pinopolis Dam Site Specific Plan.
3. Discuss alert and warning notification procedures.
4. Discuss ability to evacuate the population and secure evacuated areas, including Wildlife Management Areas downstream of the dam.
5. Discuss direction and coordination of resources.
6. Discuss emergency welfare services for evacuees.
7. Demonstrate key personnel’s knowledge of related Santee Cooper EAP through collaboration with their own EOPs.
8. Demonstrate the ability to provide alerts, warning, and effective emergency information to the public.
9. Demonstrate the ability to provide protective action for the public including any mass care needs related to an evacuation of the affected area.

#### IV. SCENARIO

On July 13, 2023, a tropical system deposited large amounts of rainfall into the Santee Cooper Lake system drainage basin. Rainfall amounts were more than eighteen inches resulting in flood level inflows in both lakes. To manage lake levels, the Santee Spillway gates have been opened to pass the inflows. Even with the Santee Spillway operating, the lake levels are at all-time highs. On July 19, 2023, a second tropical system passed through the drainage basin with severe weather conditions and an additional twelve inches of rain resulting in additional stresses to the lake system.

At 10:00 AM July 20, 2023, a pool of discolored and bubbling water being discharged downstream of the West Dam is noticed by a Security Guard during a routine patrol of the area. The situation is immediately identified as a serious condition and a major threat to the integrity of the dam. The guard observes that the situation is progressively worsening, and notices depressions in the downstream toe area, along with an increasing flow downstream of the area. The guard notifies Security Headquarters who in turn, contacts the Santee Cooper's Energy Control Center to report the incident.

Following the EAP verification procedure, the System Controller contacts Mr. Michael DuPre. Upon arrival to the site, it became apparent to Mr. DuPre that a piping failure of the dam was in progress. Since a significant portion of the dam had already deteriorated, and conditions were steadily declining, Mr. DuPre concludes that attempts to repair the dam would be ineffective. Mr. DuPre then contacts the Energy Control Center (ECC) and informs the Operator that a **"Imminent Failure Condition"** should be activated immediately. At 10:20 AM the System Controller initiates the **"Imminent Failure Condition"** flow chart, announcing that failure is imminent or has occurred.

Within the next half hour, the deteriorated section of the West Dam widens to approximately 300 ft. at the base of the earthen dam, releasing an uncontrollable flow of water downstream into the Cooper River.

**V. EXERCISE TIMELINE**

July 20, 2023	10:20 AM	“Imminent Failure Condition
	10:50 AM	Declared Dam fully breached
	2:20 PM	T+4 hours
	6:20 PM	T+8 hours
	10:20 PM	T+12 hours
July 21, 2023	10:00 AM	T+24 hours [Flood waters begin to reach Charleston County]
July 26, 2023		T+6 days [Flood water begins to recede in Berkeley County]
August 01, 2023		T+12 days [Flood waters begin to recede in Charleston County]

**VI. DAY’S AGENDA**

9:45 – 10:00 AM	Registration and Sign-in
10:00 – 10:05 AM	Welcome / Introduction
10:05 – 10:20 AM	Threat Briefing
10:20 – Noon	Exercise
Noon – 1:00 PM	Lunch
1:00 – 2:00 PM	Critique

**VII. EXERCISE PARTICIPANTS**

A. Santee Cooper

1. General Construction Services
2. Corporate Incident Management Team (CIMT)
3. Energy Control Center (ECC)
4. Corporate Communication
5. Jefferies Generating Station
6. Law Enforcement and Security
7. Power Delivery
8. Renewable Generation
9. Legal
10. Cyber Security
11. Property Management
12. Environmental Services

B. Counties/Cities

1. Berkeley County

2. Charleston County
  3. City of Charleston
  4. Dorchester County
  5. North Charleston
- C. South Carolina State Agencies
1. Emergency Management Division (EMD)
  2. Department of Public Safety (Highway Patrol)
  3. Department of Social Services (DSS)
  4. Department of Natural Resources (DNR)
  5. Department of Transportation (DOT)
  6. Department of Health and Environmental Control (DHEC)
  7. State Law Enforcement Division (SLED)
  8. Military Department of South Carolina
  9. National Guard
  10. Office of State Engineer
  11. Division of State Information Technology (DSIT)
  12. Department of Labor, Licensing, & Regulation, Division of Fire and Life Safety
  13. Forestry Commission
  14. Office of Regulatory Staff
  15. Energy Office
  16. Department of Commerce
  17. Office of Public Health Preparedness
  18. State Guard
  19. Clemson University- Livestock-Poultry Health Programs
  20. State Ports Authority
- D. Volunteer Agencies
1. Red Cross
  2. Salvation Army
- E. Federal Agencies
1. Federal Energy Regulatory Commission (FERC)
  2. National Weather Service (NWS)
  3. United States Navy
  4. United States Army Corps of Engineers (USACE)
  5. United States Coast Guard (USCG)
  6. United States Department of Administration
  7. United State Department of Justice (USDOJ)
- F. Private Agencies
1. South Carolina Dominion Energy
  2. Duke Energy

3. C. R. Bard, Inc.
4. Gannett Fleming
5. Grand River Dam Authority (GRDA)

**VIII. ATTACHMENTS**

1. Map of Santee Cooper Moncks Corner Main Complex