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DEPARTMENT OF THE ARMY
Little Rock District, Corps of Engineers
P.O. Box 867
Little Rock, Arkansas 72203-0867

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Civil Regulatory Functions
McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM
STANDING OPERATING PROCEDURE NO. 5
SPECIAL PROCEDURES DURING COLD WEATHER AT LOCKS AND DAMS

1. Purpose. The purpose of this memorandum is to establish procedures for:

a. Manning and operating the locks and dams when ice or snow creates hazardous walking conditions.

b. Operating the locks and dams when ice may inhibit the operation of the miter gates or mooring bits.

2. Applicability. The provisions herein are applicable to all locks and dams on the McClellan-Kerr Arkansas River Navigation System in the Little Rock District.

3. Reference. EM 1110-2-1612, Ice Engineering, 1982.

4. Ice or Snow Working Conditions. When walking conditions become hazardous at a lock and dam, the Lockmaster will be responsible for notifying and consulting with the Resident Engineer of the need for having two people on each shift for safety. If the Resident Engineer decides there is a need to furnish the additional personnel, he will make them available as he deems necessary by using personnel from other occupations and/or work locations to work their shifts at the locks, rescheduling work hours, and/or using overtime. A trained and qualified lock operator will be responsible for the operation of each lock and will be accompanied for reasons of personal safety by other lock personnel or other employees as may be available.

5. Ice in the Lock Chamber or Approaches.

a. When ice is forming on the water in the lock area, the upstream and downstream miter gates should be checked hourly and opened and closed as needed to maintain the operation of the lock.

This memorandum supersedes LRDOM 1145-2-22, dated 10 July 1984.

b. The air bubbling system should be used to prevent formation of ice in the miter gate recesses and to move floating ice from the recesses.

c. Ice in the lock or upstream of the upstream miter gates should be locked through when practical to prevent ice accumulation in the lock area.

d. When the floating mooring bitts begin freezing to the rails, the water level in the lock chamber should be varied to keep the bitts free if possible.

e. If ice prevents the complete recessing of the miter gates, the lock operator should advise the pilots accordingly. The miter gates shall not be forced into the recessed position by towboats or barges.

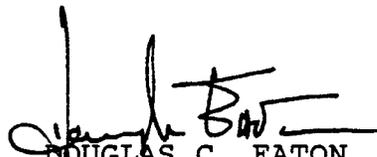
f. If the above methods fail to keep the miter gates operational, lock personnel should investigate the possibility of manipulating the navigation pool in order to break up the ice. Pool manipulation should be coordinated with the Resident Office, District Office, and local interests (docks, etc.).

g. If ice stops the operation of the lock, lock personnel shall immediately notify the Resident Engineer, who will notify the Chief, Construction-Operations Division.

6. Prediction of Icing Conditions. The U.S. Army Cold Regions Research and Engineering Laboratory has documented some relationships between air temperatures and ice formation. The main factor is the number of "freezing degree-days" which involves the difference between 32 degrees F and the average daily temperature. For example, if the air temperature averages 22 degrees F each day for 10 days, then the total freezing degree-days is 100. Experience on the navigation system has revealed that icing problems begin when the freezing degree-days exceed 130.

7. Advertisement of Requirements. No advertisement to industry required.

FOR THE DISTRICT ENGINEER:


DOUGLAS C. EATON
LTC, Corps of Engineers
Deputy District Engineer

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