Clean and Sanitize Ice-O-Matic Ice Machines

Tank Farm Maintenance Procedure

CHANGE HISTORY (≤ LAST 5 REV-MODS)

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<td>New Procedure</td>
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This is a new revision. The **First Time Use process** as defined in **TFC-OPS-OPER-C-13** can be used during the initial performance of this revision.

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Clean and Sanitize Ice-O-Matic Ice Machines

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1.0 PURPOSE AND SCOPE

1.1 Purpose

This procedure provides instructions for to Clean and Sanitize Ice-O-Matic Ice Machines.

1.2 Scope

This procedure applies to Cleaning and Sanitizing Ice-O-Matic Ice Machines Series ICE0250 through ICE2100, including Undercounter and 22 Inch Series.

2.0 INFORMATION

2.1 General Information

Cleaning should be performed a minimum of every 6 months. Sanitizing should be performed after each cleaning. Cleaning or de-limiting, dissolves the mineral deposits on the evaporator and removes scale, calcium, and other mineral buildup. Sanitizing disinfects the machine and removes microbial growth including mold and slime.
3.0 PRECAUTIONS AND LIMITATIONS

3.1 Personnel Safety

WARNING - Nu-Calgon IMS III is an irritant to eyes and skin.

WARNING - Ice cubes produced from cleaning and sanitizing are not for consumption and should not remain in the bin.

3.2 Environmental Compliance

The Central Shift Office must be notified in the event of a leak or a spill in accordance with TFC-ESHQ-ENV_FS-C-01, Environmental Notification.
4.0 PREREQUISITES

4.1 Special Tools, Equipment and Supplies

The following supplies may be needed to perform this procedure:

- Cleaning Solution (Mild dish soap or mild detergent water)
- Nu-Calgon IMS III
- GHS-SDS and/or MSDS
- Clean Rags
- Long Extension Brush
- Ice-O-Matic Ice Machine Manual
- PPE requirements
  - Chemical resistant gloves: Gauntlet-type (rubber, Nitrile, Neoprene)
  - Splash proof, chemical resistant safety goggle or face shield

4.2 Performance Documents

The following documents may be needed to perform this procedure:

- DOE-0336, Hanford Site Lockout/Tagout Program
- DOE-0359, Hanford Site Electrical Safety Program
5.0 PROCEDURE

NOTE - See Figure 1 and Figure 2 for reference.

5.1 Preparation

5.1.1 ENSURE Electrical power will be ON when performing these instructions.

5.1.2 TURN OFF potable water supply to ice machine.

5.1.3 REMOVE the ice machine front panel.

5.1.4 IF ice is being made, WAIT for cycle completion.

5.1.5 PLACE the ICE/OFF/Wash selector switch to the OFF position.

5.1.6 ENSURE all ice is off the evaporator.

5.1.7 REMOVE or MELT all ice in the storage bin.
5.2 Cleaning Instructions

5.2.1 **PLACE** the ICE/OFF/WASH switch in WASH position to initiate the wash cycle.

5.2.2 **DEPRESS AND HOLD** the Purge Switch to flush the remaining water from the water trough.

5.2.3 **RELEASE** the Purge Switch when the water trough is empty.

5.2.4 **PLACE** the ICE/OFF/WASH switch in OFF position to terminate the wash cycle.

5.2.5 **ADD** Cleaning Solution to water trough.

5.2.6 **PLACE** the ICE/OFF/WASH switch in the WASH position to initiate the wash cycle.

5.2.7 **ALLOW** the cleaner to circulate for 15 minutes to remove mineral deposits.

5.2.8 **DEPRESS AND HOLD** the Purge Switch until the ice machine cleaner has been flushed down the drain.

5.2.9 **PLACE** the ICE/OFF/WASH switch in OFF position to terminate the wash cycle.

5.2.10 **REMOVE** the splash curtain

5.2.11 **INSPECT** the evaporator and water spillway to **ENSURE** all mineral residue has been removed.
5.2 Cleaning Instructions (Cont.)

5.2.12 IF there is remaining residue, PERFORM the following steps.

5.2.12.1 WIPE the evaporator, spillway and other water transport surfaces with a clean soft cloth to remove any remaining residue.

5.2.12.2 REMOVE AND CLEAN the water trough thoroughly to remove all scale or slime buildup.

5.2.12.3 REMOVE, DISASSEMBLE AND CLEAN the water distribution tube.

NOTE - For proper water flow over the evaporator, the water distribution tube’s inner holes must face up.

5.2.12.4 REASSEMBLE all removed components.

5.2.12.5 IF residue remains REPEAT twice steps 5.2.5 through 5.2.12.4.
5.3 Sanitizing Ice Machine

**WARNING**

Nu-Calgon IMS III is an irritant to eyes and skin.

5.3.1 **DON** goggles or face shield and approved gloves.

5.3.2 **ADD** sanitizing solution to fill the water trough to overflowing.

5.3.2.1 **MIX** Nu-Calgon IMS III with water to dilute.

5.3.2.2 **ADD** diluted solution of Nu-Calgon IMS III with 1.6 fl oz of sanitizing concentrate to 1 gallon of water.

5.3.3 **PLACE** the ICE/OFF/WASH switch to WASH position.

5.3.4 **ALLOW** circulation to occur for 10 minutes **AND PERFORM** the following.

5.3.4.1 **CHECK** water transport for water leaks.

5.3.4.2 **WIPE** down all other ice machine splash areas.

5.3.4.3 **ENSURE** water transport system components are in the correct position.

5.3.5 **DEPRESS AND HOLD** the Purge Switch until sanitizer solution has been flushed down the drain.

5.3.6 **TURN ON** the ice machine potable water supply.

5.3.7 **ALLOW** circulation to occur for 2 minutes to flush the remaining diluted sanitizing solution out of the water trough.

5.3.8 **REPLACE** the front panel.
5.4 Cleaning Storage Bin/Dispenser

5.4.1 OPEN bin door.

5.4.2 ADD cleaning solution to storage bin.

5.4.3 THOROUGHLY WASH AND RINSE all surface within the bin with soap and water.

5.4.4 ALLOW the mineral deposits within the bin and bin drain to absorb the cleaner for 15 minutes to remove and loosen the mineral deposits.

5.4.5 REPEAT twice steps 5.4.1 through 5.4.5 until storage bin/dispenser is clean.
5.5 Sanitizing Bin/Dispenser

5.5.1 ADD sanitizing solution through the bin/dispenser.

5.5.2 WIPE DOWN surfaces with clean cloth and sanitizing solution.

5.5.3 HANG sign on bin stating “Maintenance in Progress Do Not Use Ice”.

5.5.4 PLACE ICE/OFF/WASH switch to the ICE position.

**WARNING**

Ice cubes produced from cleaning and sanitizing are not for consumption and should not remain in the bin.

5.5.5 DISCARD the first two ice harvests.

5.5.6 REMOVE the “Maintenance in Progress Do Not Use Ice” sign.
5.6 Acceptance Criteria

Acceptance Criteria has been met when Steps in this procedure have been satisfactorily completed.

5.7 Review

5.7.1 INFORM FWS cleaning and sanitizing process is complete.

5.7.2 FWS REVIEW AND CONFIRM the following:
   - Ice Maker is generating ice satisfactorily
   - Work requests needed as a result of this procedure are identified and generated
   - Work request number(s) of any work documents generated as a result of this procedure, are recorded in the Work/Record/Remarks section of Work Package.

5.8 Records

This procedure is performed within a work package, as such, the procedure in its entirety will be maintained as a record per the Work Control process.

The record custodian identified in the Company Level Record Inventory and Disposition Schedule (RIDS), is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.
Figure 1 – Water Distribution System

Water Purge Valve
Evaporator
Water Distribution Tube
Water Pump
Float Valve
Water Trough
Water Splash Curtain
Figure 2 – Water Distribution Tube

Important! For proper water flow over the evaporator, the inner tube holes must face up.

Turn counterclockwise to remove