



IM HE LOADING OF 155MM PROJECTILES

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Outline

- Background
 - IM Loading Equipment
 - Model Based Controls (MBC)
 - Cooling Profiles
 - Developed IM Processes
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Background

- ARDEC's Pilot Plant Loading Facility utilizes state of the art melt pour equipment to develop loading processes for IM replacements of TNT and Composition B.
- Tight controls over equipment and processes are necessary to meet stringent cast quality specification requirements for artillery projectiles. These tight controls yield quality projectiles that can be used for IM testing.

IM Loading Equipment

Safe Line Explosive Screener



50 Gallon Melt Kettle



Metal Parts Preheat Oven



IM Loading Equipment Cont.

4-Nozzle Pouring Machine



Controlled Cooling Oven

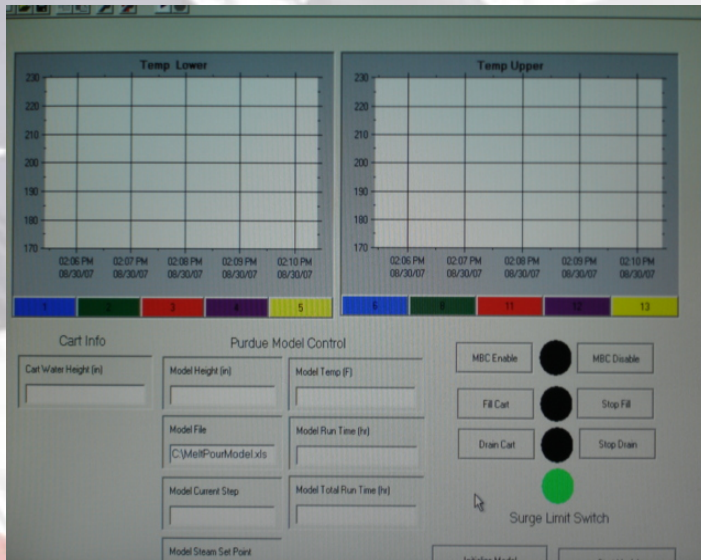


★ Model Base Controls (MBC)

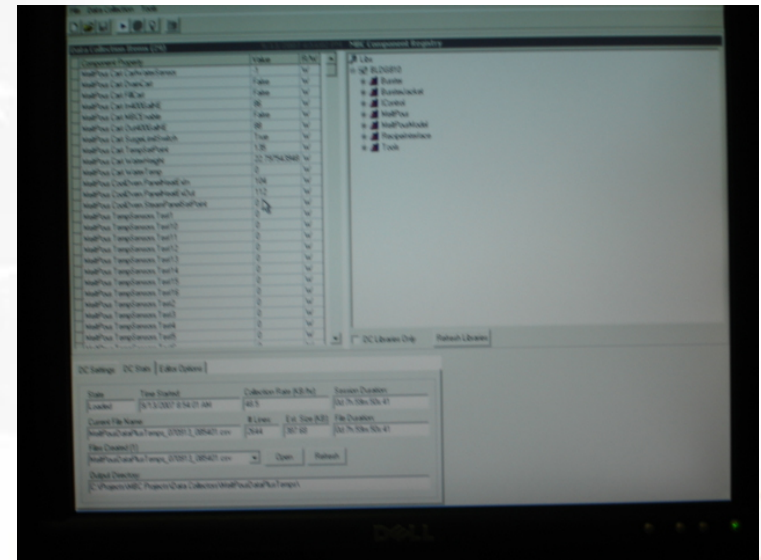
- The MBC System utilizes cart water level sensors, thermocouples, data collectors, and real time control screens to develop loading processes.
- The MBC system allows for changes to be made to cooling parameters in real time or by analyzing the results of previous test runs.

MBC Equipment

HMI Control Screen



Data Collector



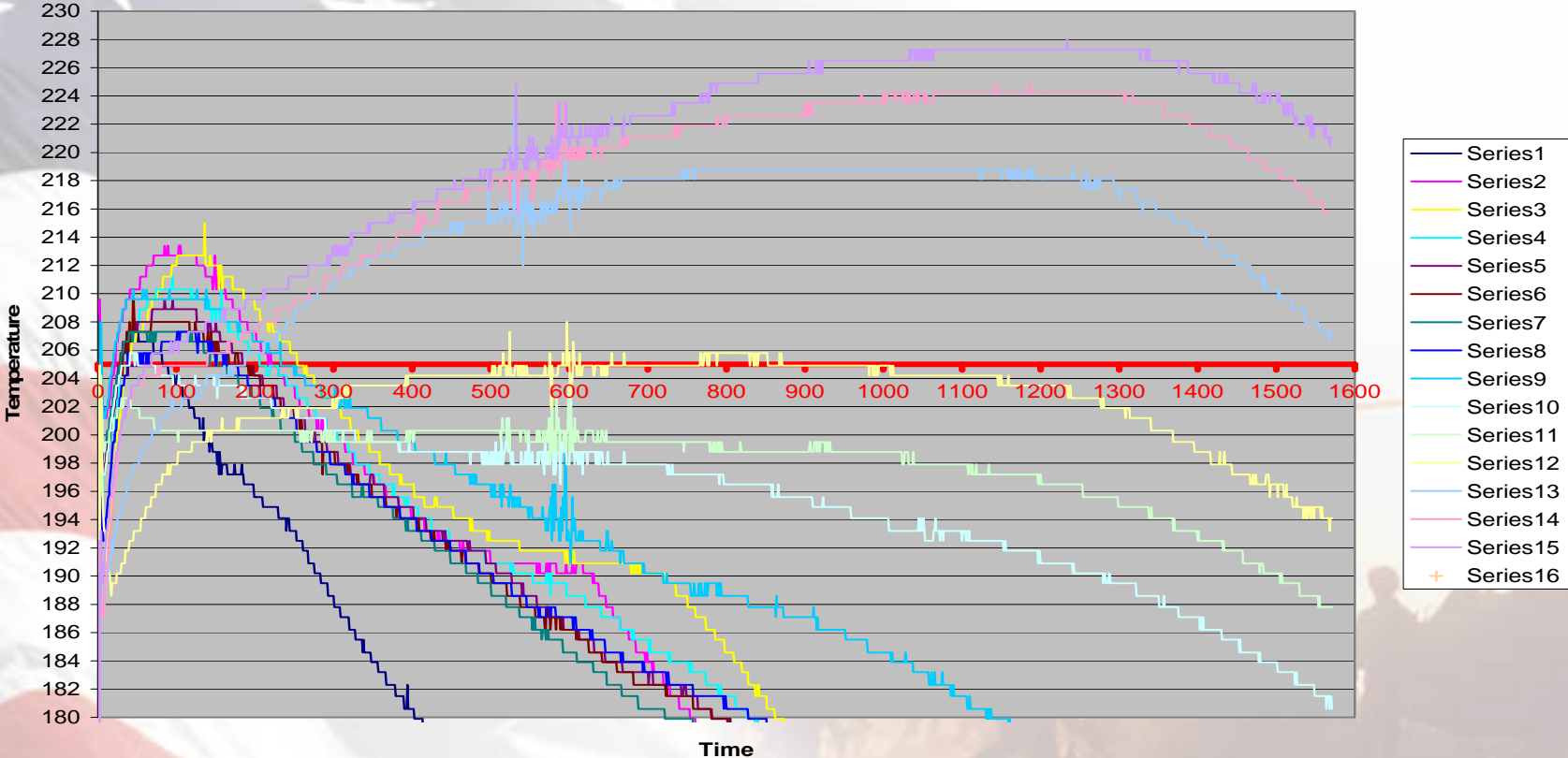
Cart Water Level Sensor



Cooling Profiles

IMX-101

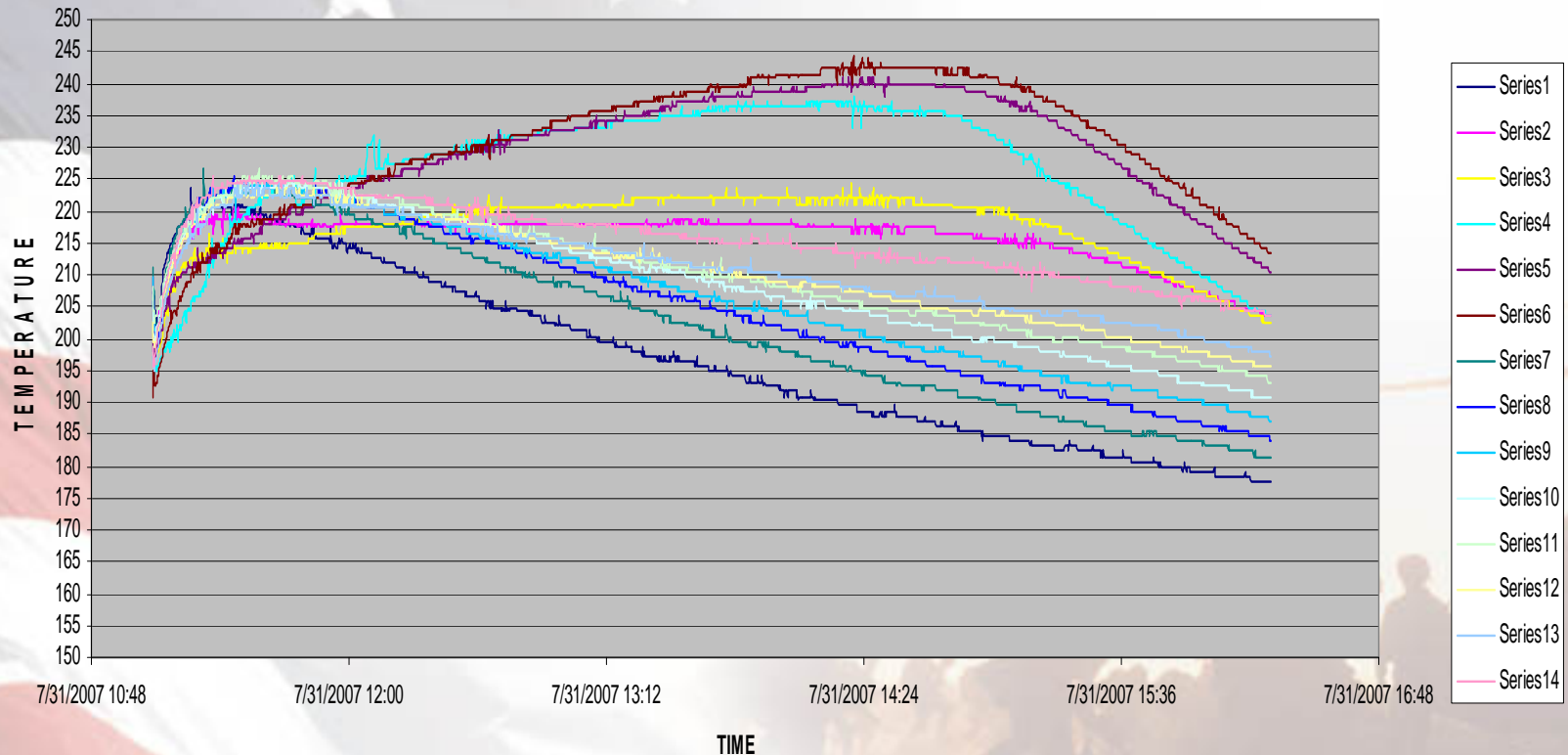
IMX-101 Cooling Profile



Cooling Profiles

- DEMN-3J

M795s Loaded with DEMN



Developed IM Processes

- Processes for several IM candidates have been developed utilizing ARDEC's melt pour equipment.
 - PAX-44
 - IMX-101 (OSX-CAN)
 - IMX-102 (MCX-8)
 - IMX-103 (DEMN 3J)