OBJECTIVE/SOLUTION:
Determine the cast parameters for new insensitive 500lb bomb fills that make handling of bombs more safe and less susceptible to unexpected ignition.

Achievements:
- Program has established a multi-step process for casting IM bombs. (1) A fore booster is cast and allowed to cool, (2) the main fill is poured and cooled, (3) aft-booster is placed, (4) space lost due to contraction is filled, and (5) the aft of the bomb is sealed
- Determined the melt-cast temperature profile and overall solidification time of a new fore-end booster feature
- Determined the required wait time between booster casting and main-fill casting
- Determined the casting parameters for ALIMX-101 in such a large item, and final capping procedure
- Determined the overall time before a bomb may be removed from the assembly line
- Repeated the process at a load plant in a production-representative environment
- Determined the ALIMX-101 cast parameters for the BLU-111. This is the largest item ever cast with IMX explosive.
- Determined the cooling profile for PAX-21 Boosters in a 500 pound bomb.

Benefits:
- This program will expose any problems with the loading procedure long before time and money are wasted during low-rate production.
- Economies of Scale: The U.S. Army will save $2.8M per year due to lower-cost HE production of all IMX-101-based items.
- By using a melt-cast explosive, bombs can be cooled, and moved off the line quickly.
- Multi-day cast-cure wait times have been eliminated.

Transition and Weapon Systems/Secondary Items Impacted:
- BLU-111 500 pound bombs
- Transition to McAlester Army Ammunition Plant