

# SGI<sup>®</sup> ICE<sup>™</sup> X in the Deep Fryer *aka* Immersion Cooling Demonstration

NO Water Cooling

Bill Mannel

GM, Compute

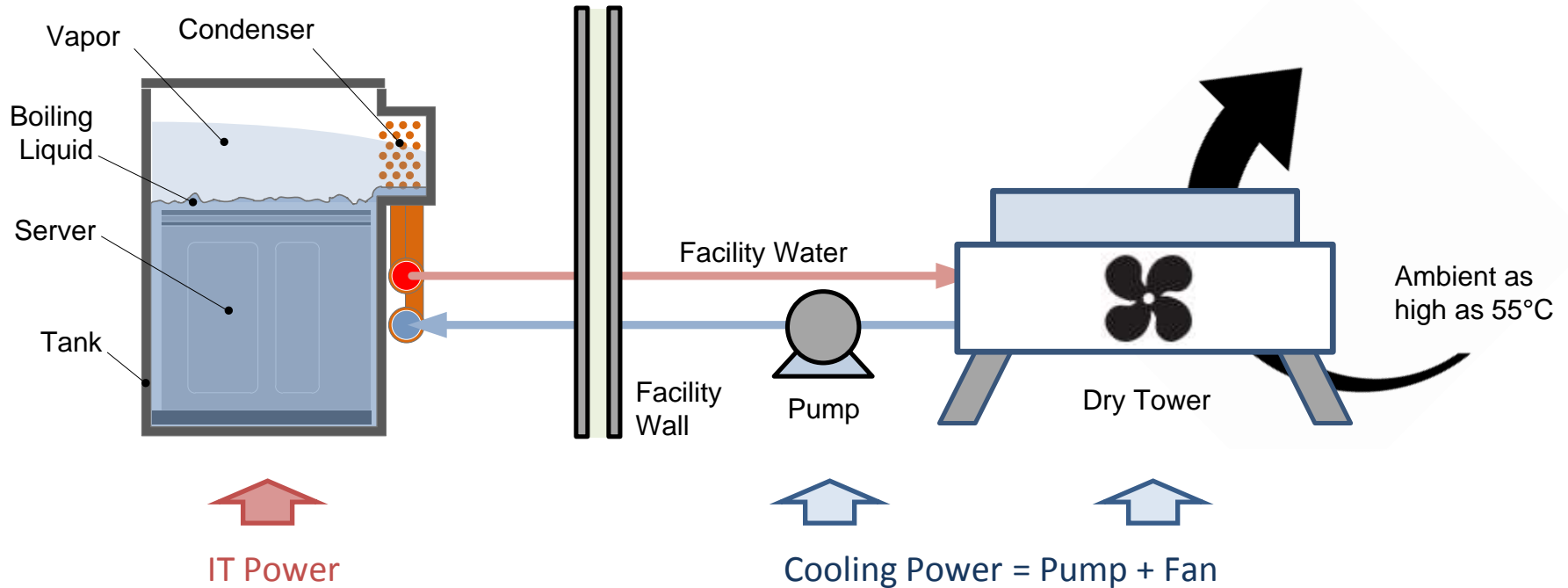
# 3M Immersion Cooling Overview

- Environmental Security Technology Certification Program (ESTCP) is funding body
  - DoD's environmental technology demo and validation program
  - ESTCP approved Year-2 funding (the project can continue)
- Lawrence Berkeley National Laboratory led team
  - LBNL: Bill Tschudi and Henry Coles (program management)
  - 3M: Phil Tuma (cooling technology)
  - Intel: Dr. Michael K. Patterson (processors)
  - Schneider Electric: Ozan Tutunoglu (dry-cooler)
  - SGI: Tim McCann (SGI® ICE X™ system)
  - NRL: Dr. Jeanie Osburn (demonstration site)
- Immersion Cooled ICE X Power-Up April in CF
  - Install at The NRL ~ May-2014

# What's NOT Needed

- Any specific changes to the standard air-cooled product
- Cold plates, closed-loop cooling systems, etc.
- Special cleaning after equipment removal (Novec completely evaporates)
- Cooling tower, CRAC, ear plugs, raised floors, cool/warm water...

# 3M's Open Bath Immersion Overview

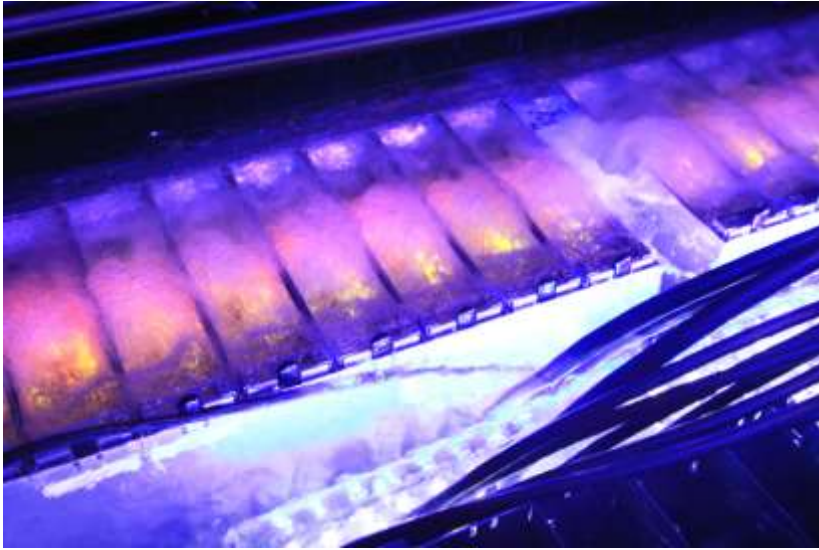


OBI does not require: chillers, cooling towers, water use, raised floors, computer room air conditioners or earplugs!

# 3M ICE-X Immersion System



# 3M SGI® ICE™ X Immersion System



Doing “live” HPC work for 3M in St. Paul, MN!  
Press release at <http://www.sgi.com>

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