

# Joint ANL/FNAL SCPF and BCP System Update

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## UPW System

- System is operating and recirculating on itself
- Anion/cation and divalent metal concentration + dissolved silica tests were performed by installer. Results are within UPW quality specs.
- A second, more thorough test through Balazs Analytical Lab, verified that system produces UPW within specification.
- Official 'turn-on' occurred week of July 10, 2006.

# BCP System

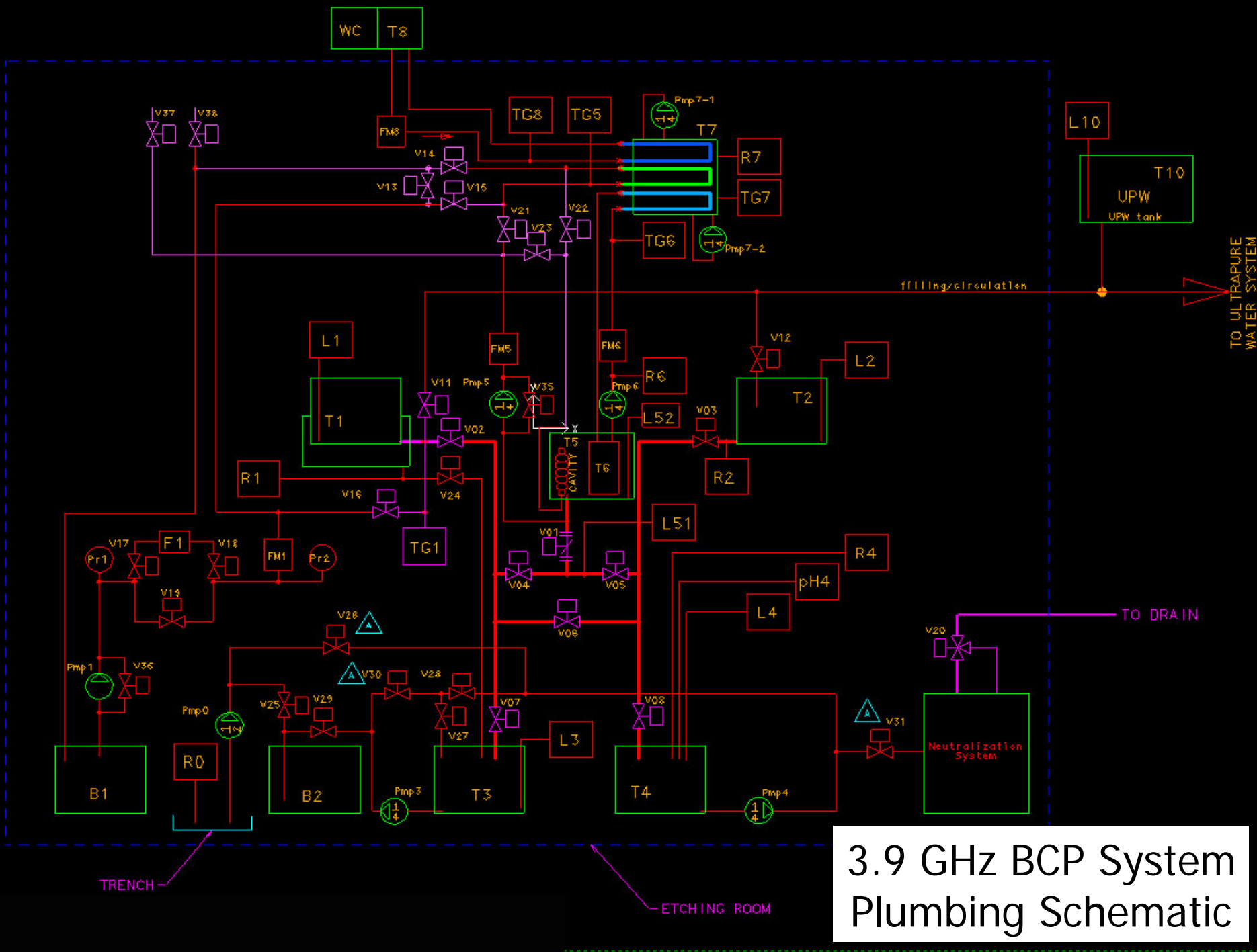
Where we were ~



3.9 GHz Processing  
Setup

## Full water commissioning revealed the following:

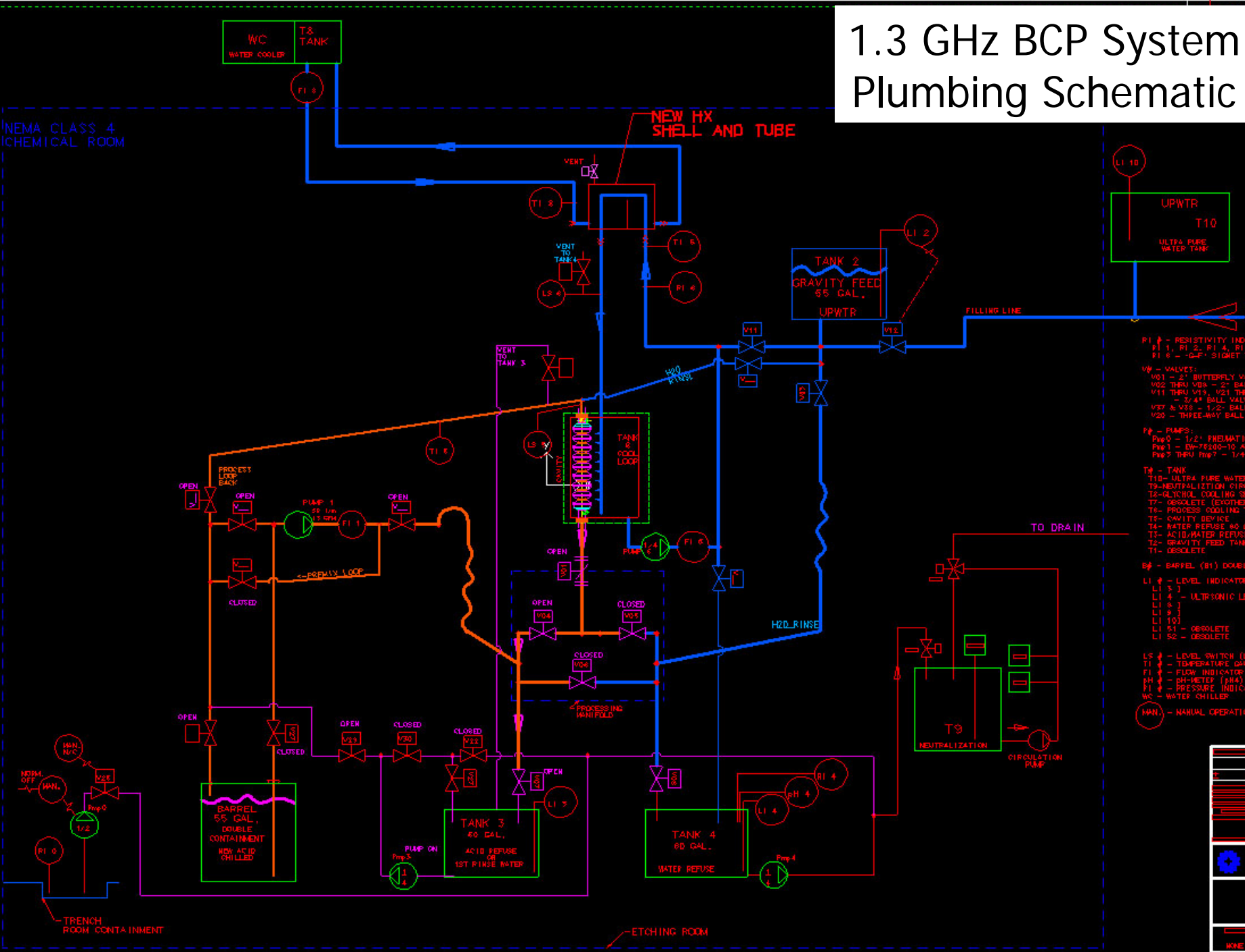
- Acid cooling scheme required modification
- Room egress was not within life-safety requirements
- Too many overhead lines
- Extra features in system could be eliminated to improve simplicity
- Large cavity handling required architectural change
- Controls simplifications required for operator 'comfort'



3.9 GHz BCP System Plumbing Schematic

# 1.3 GHz BCP System Plumbing Schematic

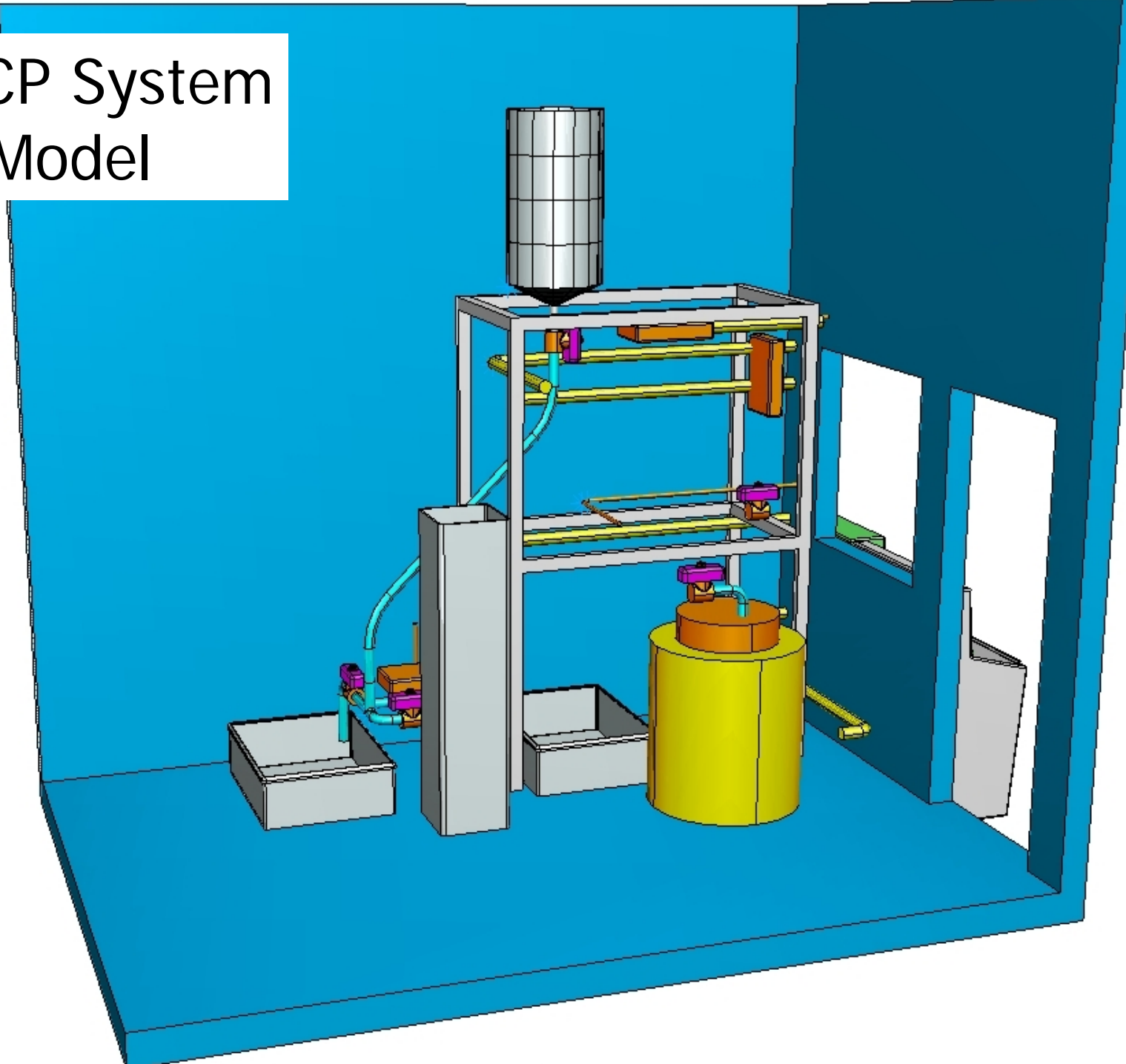
NEMA CLASS 4  
CHEMICAL ROOM



- FI 1 - RESISTIVITY INDICATOR
- FI 2 - RI 4, RI 3
- FI 6 - C-FI SIGMET TANK
- WV - VALVES:
  - WV1 - 2" BUTTERFLY VALVE
  - WV2 THRU WV3 - 2" BALL VALVE
  - V11 THRU V19, V21 THRU V23 - 3/4" BALL VALVE
  - VET 1, VET 2 - 1/2" BALL VALVE
  - V20 - THREE-WAY BALL VALVE
- PA - PUMPS:
  - Pmp0 - 1/2" PNEUMATIC
  - Pmp1 - DW-7500-10 AST
  - Pmp2 THRU Pmp7 - 1/4"
- T# - TANK
  - T10 - ULTRA PURE WATER TANK
  - T9 - NEUTRALIZATION CIRCUIT
  - T2 - PLUNGING COOLING TANK
  - T1 - OBSOLETE (EXPOSED)
  - T8 - PROCESS COOLING TANK
  - T6 - CAVITY DEVICE
  - T4 - WATER REFUSE 60 GAL
  - T3 - ACID/WATER REFUSE
  - T2 - GRAVITY FEED TANK
  - T1 - OBSOLETE
- B# - BARREL (B1) DOUBLE
- LI # - LEVEL INDICATOR:
  - LI 3 -
  - LI 4 - ULTRASONIC LEVEL
  - LI 8 -
  - LI 9 -
  - LI 10 -
  - LI 51 - OBSOLETE
  - LI 52 - OBSOLETE
- LS # - LEVEL SWITCH (LS)
- TI # - TEMPERATURE GAUGE
- FI # - FLOW INDICATOR
- pH # - pH-METER (pH)
- PI # - PRESSURE INDICATOR
- WS - WATER CHILLER
- (MAN) - MANUAL OPERATION



# Partial BCP System 3D Model



## BCP System---Major Improvements

- Eliminated residual acid storage in system
- Pre-cool and pre-meter acid
- Direct acid feed from supply drum
- Reduced acid/water plumbing
- Follows life-safety rules
- Simplified process heat exchange\*
- Reduced overall system complexity
- Modified layout to accept 1.3 GHz cavities



## BCP System---Costs & Manpower

- Estimated M&S remaining in FY06 = \$50k\*
- Estimated SWF remaining in FY06 = 1.25 FTE

\* At least 1 FTE and \$100k for cavity hardware and cleanroom gear will be required in FY'07