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## *Update on SRF at ANL for ILC*

*August 2, 2007*

*Speaker: Mike Kelly*

## *SRF Activities at ANL for ILC*

### 1. Electropolishing

ANL: Mike Kelly, Scott Gerbick, Bill Boettinger (left July 07)

FNAL Collaborators: Cristian Boffo (left Feb 07), Kerry Ewald

### 2. Buffered Chemical Polishing

FNAL: Allan Rowe, Dan Assell, Luciano Elementi, Todd Thode, Dirk Hurd, Scott Reeves

### 3. High-pressure Rinsing

ANL: Mike Kelly, Scott Gerbick

FNAL: Dan Olis, Frank McConologue, Dan Assell

### 4. Clean Room Activities

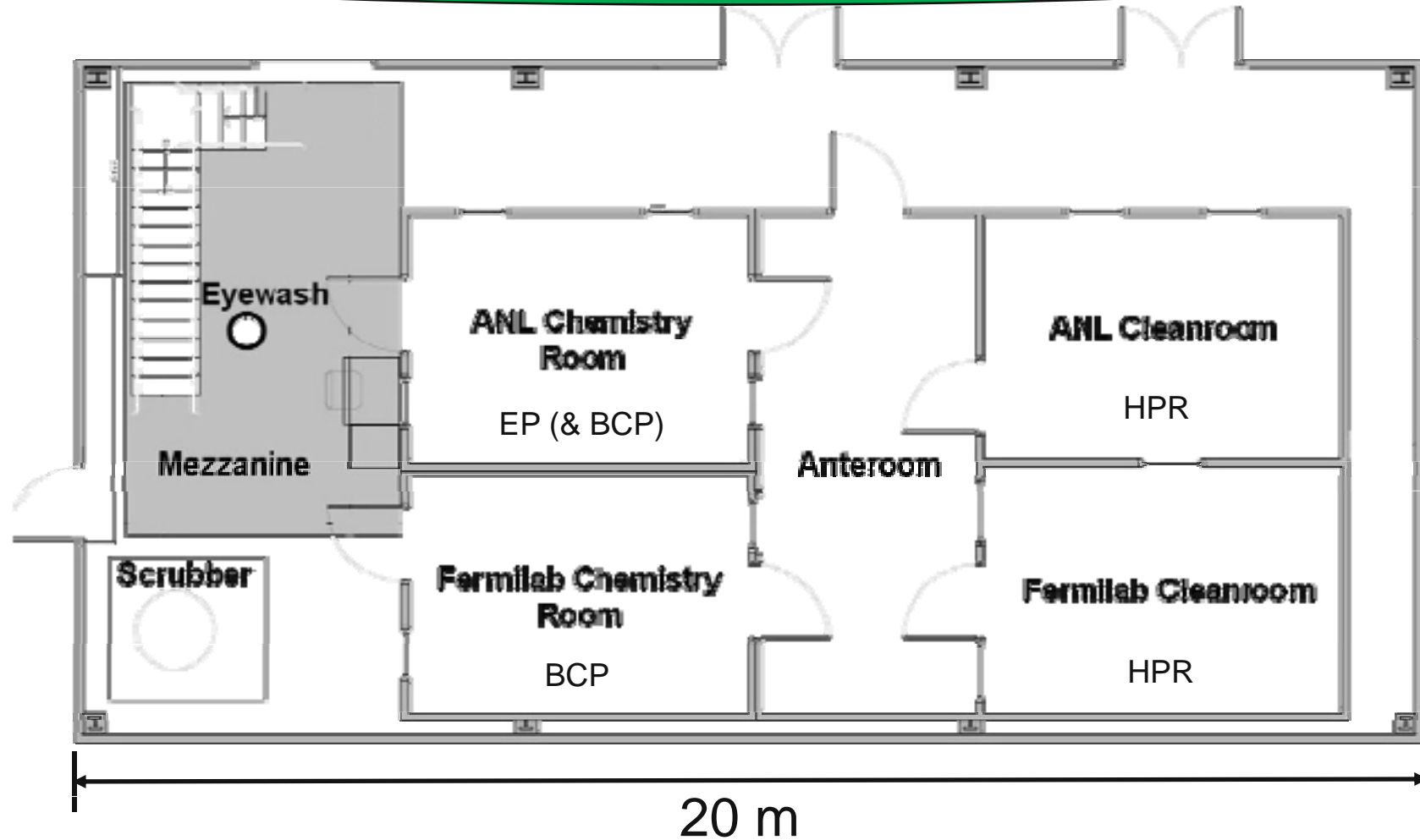
FNAL: Allan Rowe, Dan Olis

ANL: Mike Kelly

# SCSPF: Superconducting Cavity Surface Processing Facility

- Facility Cost ~\$2M (~50/50 ANL/FNAL)
- Safety Review for EP and EP Operations started in 2006

Goal: Establish a new and complete single cavity processing & assembly facility



## 1. Electropolishing

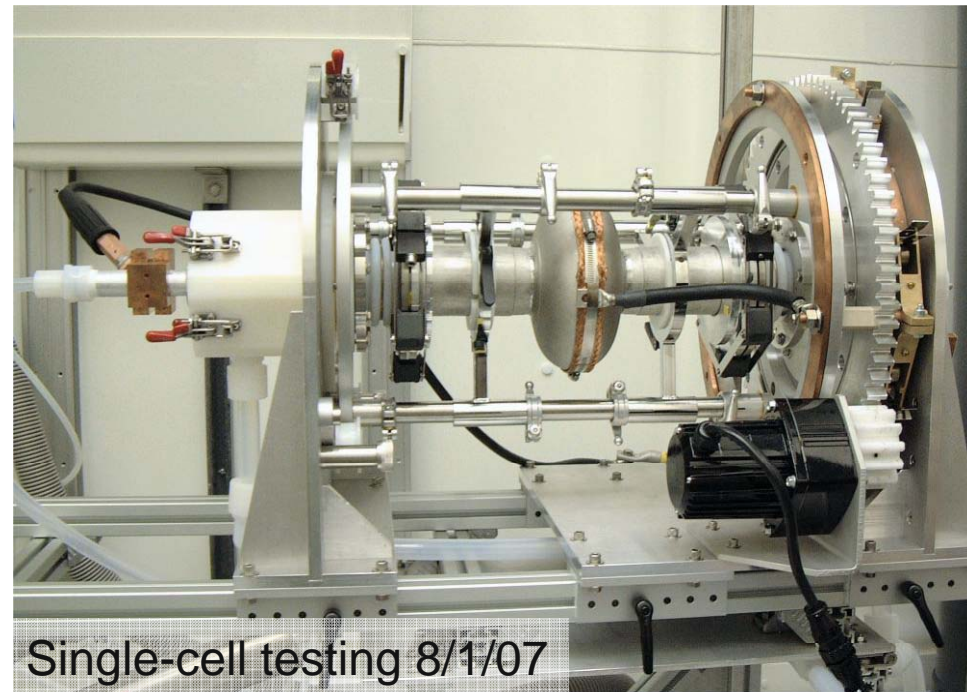
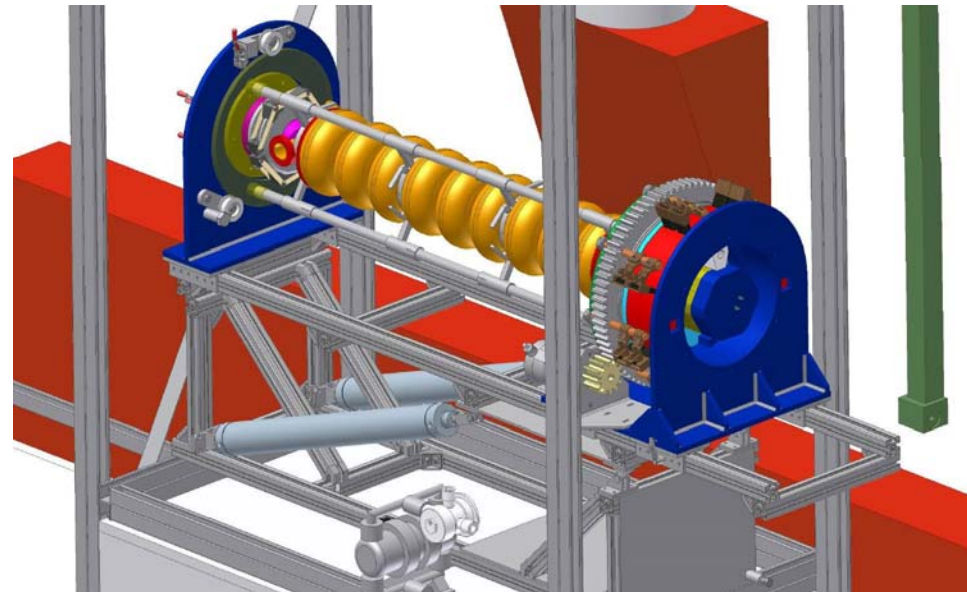
- EP Design Specification - Done
- EP Engineering Design - Done
- EP System/component procurement - Done
- EP Design Review - Done
- EP system assembly - 95% complete

To do:

- Install H<sub>2</sub> ventilation line
- Install three additional valve controls
- Finish cathode loader (K. Ewald?)
- Update electropolishing procedure checklist

First Procedure:

- August 13





## 2. Buffered Chemical Polishing – Start water testing in 2 wks



BCP System



Dilute Waste Neutralization System

Reconfigured Ventilation

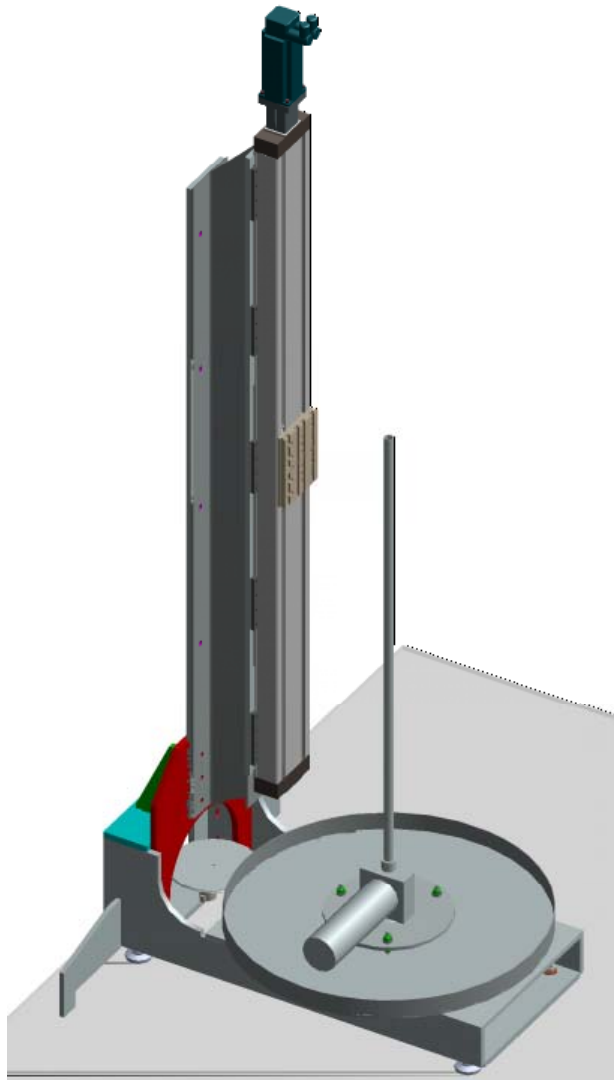


## 2. Buffered Chemical Polishing

To do-

- Finish complete mechanical and electrical installation 2nd-3rd week of August.
- Start and complete water commissioning phase 3rd week of August.
- Schedule Safety Review! After edited drafts of all documents are completed, safety review will be scheduled. Target date to schedule first review meeting is mid September.
- Finalize complete safety documentation and operational documentation set. End of Safety Review.
- Receive ORC. December 2007.

### 3. High-pressure rinsing



#### HPR Tool

- Design Specification – Done
- Design 90% complete
- Detail drawings 75% complete
- 20% released for fabrication.  
Expect 95% released by August 10.

#### HPR Water System

- Components 75% specified
- Process diagram, control and interlock scheme 75% done

### 3. High-pressure rinsing



#### HPR Tool

- Design Specification – Done
- Design 75% complete

#### To Do:

- Detail drawings
- Fabrication and assembly

Will have in common with FNAL:

LEWA pump, process plumbing,  
interlock scheme, HPR linear rail  
and control system)



## 4. Clean Room Activities

- Modify an area in ANL & FNAL class 100 areas for class 10 HPR and drying and assembly to be installed in both ANL and FNAL Class 100 cleanrooms by Midwest Cleanroom
- Install platforms to change HEPA prefilters. Work to be done by ANL FMS-ENG.
- Leak Detector (Alcatel ASM182TD+) purchased for common use by ANL/FNAL
- Dry pumping station to be installed on common vacuum manifold shared by ANL/FNAL
- Two large ultrasonic tanks (60" x 20" x 20" H x L x W) to be purchased.
- Vacuum hardware cleaning areas to be set up in both clean rooms.
- Two BackTech cleanroom carts to be purchased.
- Common cleanroom/chemroom cart tooling nearly designed. First set to be manufactured by FNAL machine shops in August.
- Preliminary cavity/vacuum hardware orders underway.

# Summary

- Electropolishing:
  - To be performed with 1-cell on Aug. 13 (this cavity not worth cold testing)
  - Need a 2<sup>nd</sup> “testable” single-cell cavity before proceeding to nine-cell
  
- Buffered Chemical Polishing:
  - Facility hardware largely complete
  - Process of safety review not yet begun (timescale 4 months minimum)
  
- High pressure rinsing
  - Proceeding on hardware design and procurement
  - FNAL operational Jan. 08; ANL shortly thereafter
  - Pace of this effort is manpower limited
  
- Clean room assembly
  - Design and procuring some hardware (ultrasonic tanks, leak checker, particle counter); other hardware receiving no effort (cold test coupler, pickup, assembly tools etc)
  - This effort severely undermanned