



# Superconductivity Program (P38C)

## Program Update

### Task Force Meeting

July 31, 2008  
Arlington, VA

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# Agenda

3:30	Welcome by Task Force Chairman	Pat Duggan, Con Edison
3:35	EPRI Superconductivity Program Overview	Steve Eckroad, EPRI
4:00	HTS Technology Watch Project Update	Marcus Young, EPRI
4:20	Planning for 2009 – 2010: Overview	Steve Eckroad
4:30	Utility Needs Roundtable	All
5:30	Adjourn	

# Program Objectives & 2008 Research Focus

## Objectives

- Accelerate the introduction of superconducting technologies into the power delivery grid
- Validate the design, cost, performance, and reliability of these technologies as they are deployed

## 2008 Research Focus

- Technology update on superconducting cables
- Follow up to Stakeholders Workshop to explore specification, procurement and O&M issues of SPE
- Annual Superconductivity Conference

# Superconductivity Task Force

**Task Force Chairman: Pat Duggan, Con Edison**

**PDU Council Chairman: Open**

**EPRI Project Set Manager: Steve Eckroad**

## 2008-09 Meetings

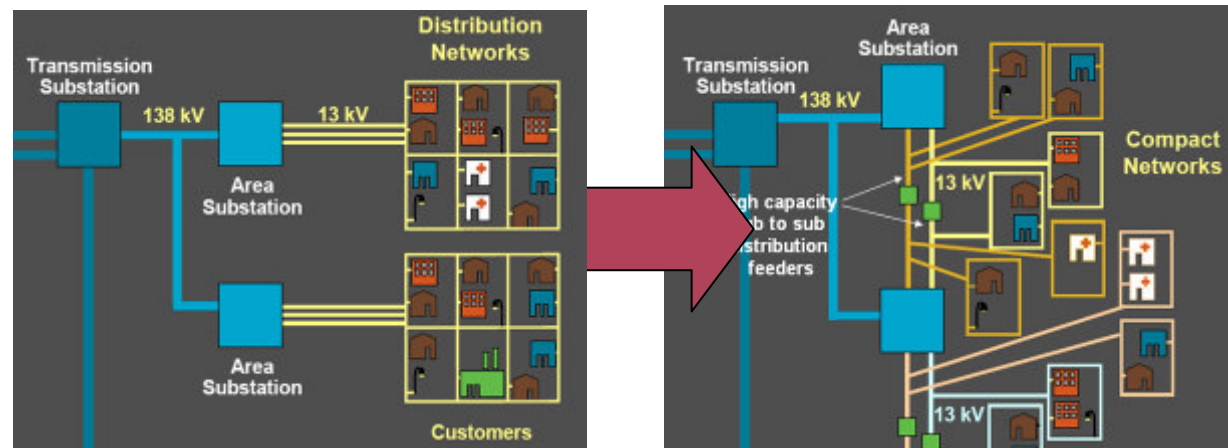
- **Task Force: July 31 in Arlington, VA**
  - Held in conjunction with US Dept. of Energy Superconductivity Program Peer Review
- **Task Force: Jan-Feb, 2009 in Orlando, FL**
  - In conjunction with all Transmission & Increased Power Flow (TIP) Program Task Force meetings
- **Annual Conference: November 12-13 in Oak Ridge, TN**
  - Hosted by DOE and ORNL
  - Announcement and Call for Papers out this week

# 2008 Research Program

- Base-funded projects:
  - Develop and deploy superconducting technologies (38.010)
- Supplemental projects
  - Demonstration of a Superconducting Fault Current Limiter (Project Opportunity #1009035)
  - Technology Transfer for Entergy Labarre HTS Cable Project (Under development)
- TI-funded projects:
  - SuperGrid: Superconducting DC Cable Design

# Develop & Deploy Superconducting Technologies, P38.010 - Background

- Hardware demonstrations of superconducting substation and power equipment are underway
- Demonstrations must result in validation of equipment performance and costs
- Commercial success is contingent upon products and processes that meet utility design requirements and operational needs



# Develop & Deploy Superconducting Technologies, P38.010 – Objectives

- Leverage extensive third-party investments in demonstration projects to transfer knowledge and build support
- Promote stakeholder dialogues to increase understanding
- Develop guidelines and best practices for investment, procurement, testing ,and operation



## P38.010 – Project Plan (2008)

- Continue “technology watch” for HTS cable development and demonstration around the globe, with focus on U.S.
- Follow up 2<sup>nd</sup> “Stakeholders Workshop” on testing superconducting systems
  - Publish Proceedings
  - Work with DOE for follow up activities (Roundtable)
- Support for annual EPRI Superconductivity Conference

## P38.010 – Status & Deliverables

- Status
  - HTS Cable “Tech Watch” under development
  - ✓ 2007 Workshop Proceedings published
  - ✓ DOE-EPRI Roundtable set for July 31
- Deliverables
  - *Technology Watch Superconducting Cables*. December 2008. 1015988.
  - ✓ *Specifying and Testing Superconducting Power Equipment: EPRI/DOE Workshop*. July 2008. 1016928.  
(Available free)
  - *Survey of Fault Current Limiter Technology*. August 2008. 1016389.

# 2008 Supplemental Projects

- Demonstration of a Superconducting Fault Current Limiter (1009035)
- Technology Transfer for Entergy HTS Cable Project (Proposed)

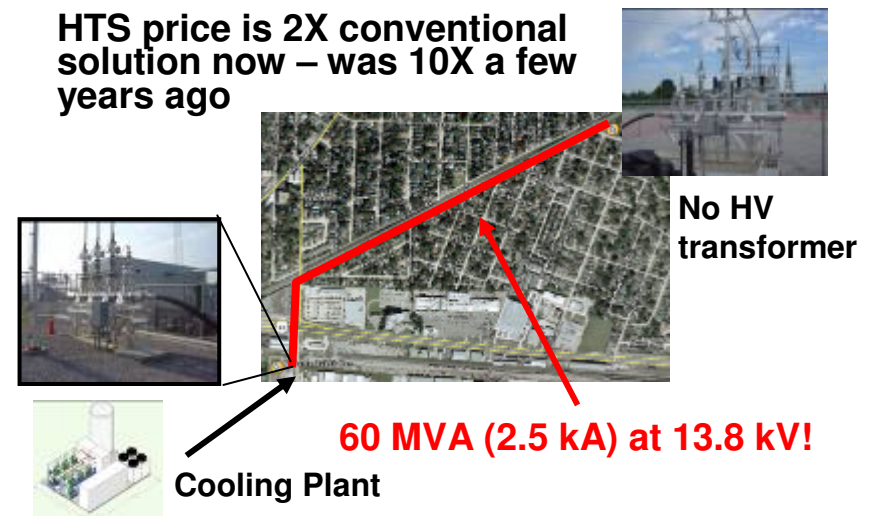
# Demonstration of a Superconducting Fault Current Limiter (SFCL) - 1009035

- Objective:
  - Demonstration of a transmission voltage class (138 kV) superconducting FCL
- Benefits of participation:
  - Obtain AEP “utility perspective” in planning for and operating a FCL
  - Obtain first-hand, timely project information during test
- Funders
  - Con Edison and Southern
  - Need 1 or 2 more
  - Price: \$50K



# Entergy HTS Project Technology Transfer - TBD

- Objective:
  - Demonstration of a “virtual substation” HTS cable in constrained urban location
- Benefits of participation:
  - Member of utility advisory team during design and testing
  - Obtain first-hand, timely project information
  - Workshops to educate staff on HTS technology
- Funders
  - None as yet (new)
  - Price: \$TBD



# Entergy HTS Project Technology Transfer

- Technology transfer activities
  - Annual workshop during project
  - Periodic updates to funding utilities
  - Annual reports
  - Site visits
- Information exchange and networking vital to move technology into mainstream





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