Summary Session VI

HTS Applications Projects: Pitfalls and Potentials

“We will not be defeated!”
Commercialization Acceleration

• Cost! Show value-added benefits at system level
• System level reliability and cost are biggest issues!
• System integration of tape, cryogenic and dielectrics
  – Cryogenics system – not yet at commercial level
  – Dielectrics – uncertain of pathway to get required needs
• Successful reliable application of technology is necessary
  – Demo to customers that technology is reliable and the operating characteristics
  – Meeting utility expectations, requirements and specifications is critical
  – Utilities are “green” to HTS – outreach needed for educating on operating practices and procedures
• Policy can help advance the adoption of HTS
Lessons learned

• Formalize risk analysis – readiness reviews important
• Cable projects
  – Have demonstrated the successful operation during contingencies
  – System responded as it should have
  – Almost more important than continuous “normal” operations
  – Markets do exist – potentially in data centers, supercomputers
• HTS motors & FCLs
  – Supervar first to market for utility HTS applications
  – Strong market pull for these two technologies
  – 2G wire is needed for commercialization
• HTS transformer
  – Reduction in losses is important but overload capabilities is a strong driver
  – Many lessons learned from initial HTS transformer project
What are the needs for enabling technologies

• Cryogenics: Reliability of the vacuum jacket and potential leaks; maintenance issues
  – Flexible cryostat – Operating life time of system. Need to be able to operate for decades
  – Increased efficiency, reduced footprint (cables)
• Dielectrics – impulse ratio with insulating material is poor; restrictive and cost prohibitive;