

Albany HTS Cable Project Update

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HTS Solutions for a New Dimension in Power

2007 Annual DOE Wire Development Workshop – January 17, 2007 – Panama City, FL



On-Grid Operations Began July 20, 2006

- **3-Hour Voltage Soak** –
 - Phase check conducted
- **Connect to the Grid at ~ 21:00**
 - Confirm stability of T and P
 - Shield/Conductor Ratio >95%
- **Commissioning Ceremony Held on August 2nd**
 - NYS set Peak Load record at 1:00pm (33,939 MW)

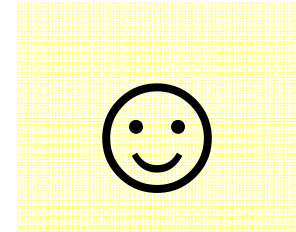


Results of On-Grid Operations

- **Ran without interruption from July 20th thru November 11th**
 - 114 Days or > 2,700 hours of continuous operation
- **Experienced 1st Fault Current Event on November 12th @ 9:32AM**
 - Breaker in nearby substation had an external flashover
 - ~ 7.3 kA peak current on HTS cable, fault cleared in ~ 6 cycles
 - Cable & all support equipment survived without damage
- **Total accumulated run time ~ 6 months (> 4,000 hours)**
 - Maintenance work performed on cryocooler, chillers, other equipment without interruption to cable operations

Phase 2 Schedule

- ✓ Deliver 2G by the end of December
- ✓ 9.7 km shipped to SEI on 12/22/06



- 30m YBCO cable to ship from Japan in March
- ~ 6-8 weeks to arrive in Albany
- Shut down BSCCO cable in May
- Begin 2G cable installation in June
- Energize the world's first 2G device in Fall 2007



A few of the lessons learned along the way...

- **Technical Risks**

- Formalize risk analysis and mitigation
- Watch out for the so called “easy” stuff?

- **Budgetary Risks**

- Currency fluctuations
- Are there enough tests, samples, models and mock-ups budgeted to allow for those inevitable “educational” moments. “Hmmm...that’s interesting!”

- **Deliverables Risks**

- Where do stakeholders’ desired outcomes not align? What are the implications?
- Standardized (or pre-determined) test methods so the outcome provides the data that is desired. Especially across similar programs.
- ‘Early to bed, and early to rise. Work like heck and ADVERTISE!’

Promotional Activities

- **Initiated HTS Cable Project Task Force**
 - ***Ultimate objective:*** to move HTS cable technology from demonstration projects to commercial installations
 - ***Goals of Group:*** To use a series of jointly developed messages to promote awareness of and educate a series of target audiences on what HTS is all about and how it is a solution to a problem, with focus on these three cable projects
 - ***Target audiences:*** Utilities (all kinds from investor owned, municipals, co-ops, public etc.), Utility commissions, public policy makers (regional, state, local), state energy officials, state legislators, federal legislators, RTOs and ISOs, media, the environmental community and others
 - ***Organizational structure:*** TBD (i.e. trade sub-group of CCAS, EPRI/DOE sub-committee)
 - ***Possible group activities:*** events, operations reports/project updates, Business Case Study, speaking opportunities, trade publications, outreach workshops



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Questions?