CRUISE SHIP
SHORE POWER PROJECTS

Lessons Learned

AAPA, Mazatlan 2009

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History

- 2005 - First Shore Power installation in Seattle for Princess Cruise Lines
- Project was completed in 6 months
- Included Design, Coordination, Engineering, Procurement, Installation, Testing & Commissioning
- $1.6 Million Budget
- 2006 - Second Shore Power Installation in Seattle for Holland America

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Main Metering Equipment, Transformer & Secondary Equipment

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Ground Switch

Jib / Cable Management

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Ship Side Equipment

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Today

- Vancouver BC
  - Currently in construction on two separate shore power systems
- San Francisco & San Diego
  - Final contract negotiations
- Long Beach & New York
  - Early discussion

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Lessons Learned

- Developed a more compact design of the main equipment
- Introduced an Auto-Tap selector switch for the main transformer
- Developed the “Jib & Socket” cable management system
- Designed testing equipment to test and commission the system without a ship
- Understanding the importance of the system standards.

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Automation

- Ability for internal shore power components to communicate more efficiently
- Monitor shore power system remotely
- Consumption log for all connected ships
- Substantiation for emissions reductions
- Provides shore status directly to the ship

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Future Opportunities

- Educate Port staff and officials on shore power fundamentals
  - Basic components and their function
  - Construction and equipment lead times
  - Required equipment and options per site specifics
  - Understand Port requirements and concerns
- Begin early coordination with the local utility

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Future Opportunities (cont.)

- Identify contracting vehicle
- Confirm contract requirements
- Develop solid budgets
  - Equipment pricing is consistent with standard design
  - Site specifics drive the pricing
  - Revise throughout design process
- System operations and support after construction
- Education and Communication!
- Identify and outline the overall process

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Annual Support

- Servicing and maintaining the shore power equipment
- Provide local labor to support actual connections to insure a safe operation by a Licensed High Voltage Electrician
- Cochran can monitor the system remotely

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