

IAC Lead Student Meeting 2010 Washington, DC



Greg Bettencourt – Energy Engineer

Friday, February 4th, 2011

Who is NORES CO?

- **We are an Energy Service Company (ESCO)**
 - Founded in 1984
 - 15 offices nationwide
 - Over 600 Energy Service Professionals (And Growing!)
 - Financially Strong
 - Acquired by Carrier Corp in 2009 – Member of Carrier’s Building Systems and Services Business
 - Carrier is owned by United Technologies (NYSE: UTX) - \$60 Billion in annual revenue

What does NO RESCO do?

- **Engineering and Construction Company**
 - Performance Contractor – Design, Develop, and Implement Energy Service Performance Contracts (ESPC)
 - Energy savings and infrastructure solutions are NO RESCO'S only business
 - Markets/Customers:
 - Any large energy user (Energy use greater than \$1 Million/Year)
 - Federal, State, and Municipal customers
 - Universities, Schools (K-12), Hospitals, Corrections, Military, Laboratories, and Municipal Aggregations
 - Vendor Neutral: Independent in recommending solutions and equipment to meet the long term needs of our customers
 - Over \$2.5 billion implemented in 20,000+ facilities in past 25 years

What does NORESKO do?

- **Full Service In-House Capabilities:**
 - Sales
 - Project Development
 - Design Engineering (Central Plant, HVAC, Etc.)
 - Construction
 - Commissioning
 - Measurement & Verification
 - Operations

What Is Performance Contracting?

ESPC is.....

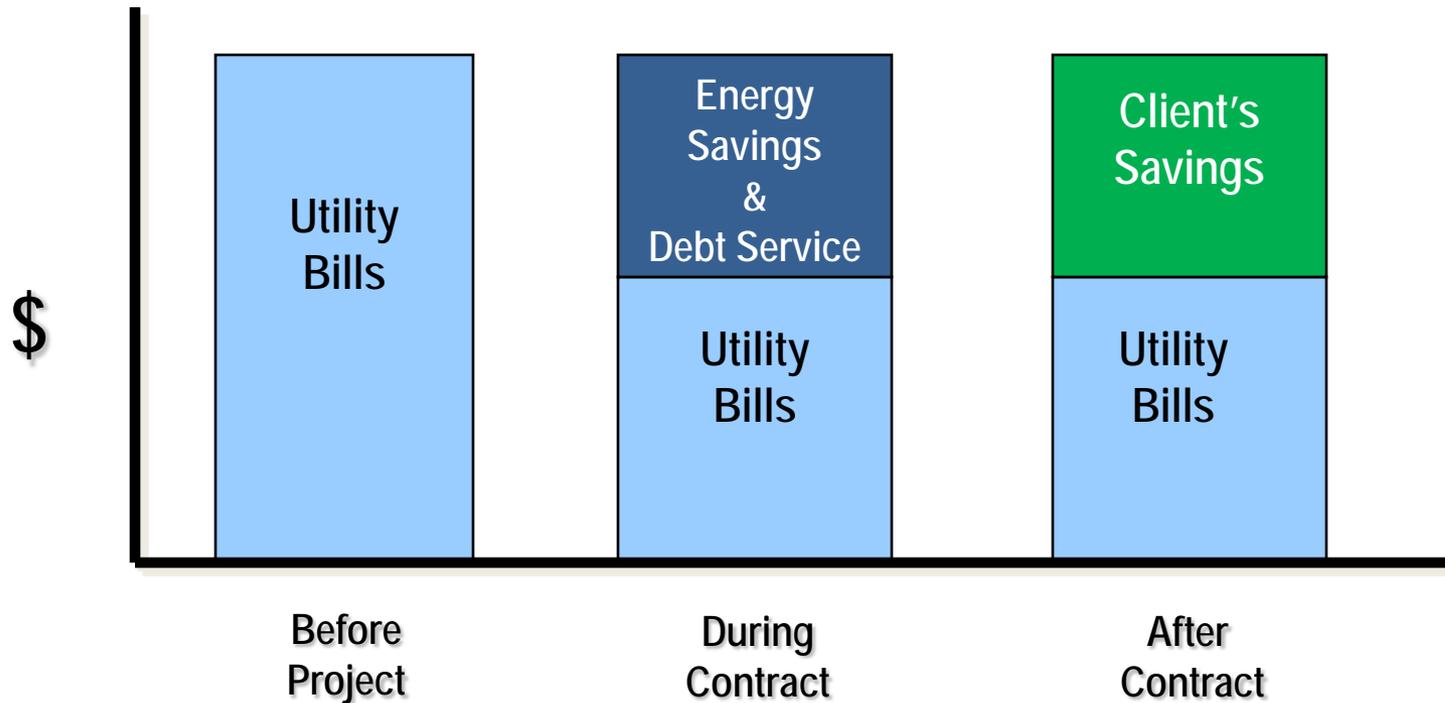
A mechanism for procuring and implementing infrastructure improvements that are self-funded over time through guaranteed energy savings.

Promotes:

- Sustained focus on operating and energy efficiency
- Smart and economically responsible project selection
- Efficient design and installation

What Is Performance Contracting?

Energy Audit + Retrofit Implementation = Guaranteed Energy Savings



The Benefits of ESPC

- Facility Renewal
- Energy and Cost Savings
- Emissions Reductions (Carbon Footprint)
- Reduced Maintenance and Service Costs
- Avoided Expenditure of Capital Funds
- Improved Comfort Conditions for Occupants

The Role of the Energy Engineer

- Energy Auditing
 - Document existing system design and operation
 - Identify customer's needs & wants
 - Identify building and infrastructure problems
 - Consider multiple technical solutions to optimize retrofit success and cost efficiency
 - Proposal vs. Investment Grade Audit

The Role of the Energy Engineer

- Energy Analysis
 - Baseline Development
 - End-Use Analysis
 - Energy Savings Calculations
 - Bin Models (Spreadsheet Calculations)
 - Energy Simulation (eQUEST)

The Role of the Energy Engineer

- Project Development
 - Technical Communication from Start to Finish
 - Assemble Self-Funding Package of ECM's
 - ECM Cost Development

Recent Projects

University of Massachusetts Dartmouth Campus

College Campus in Need of Comprehensive Improvements:

- Extensive differed maintenance
- 2.4 Million SF in dire need of infrastructure improvements
- \$2.9 million annual energy savings
- Funded \$32 million in improvements

19 ECM's, Including:

- Lighting & Water Upgrades
- 1.7 MW Gas Turbine Generator with HRSG
- Energy Management System Upgrades
- Comprehensive HVAC improvements
- Kitchen Hood Controls
- Weatherization
- Groundwater Leakage Reduction



John O. Pastore Center

Cranston, RI

Home of Rhode Island Dept of Admin, Corrections, and Hospital:

- Steam distribution system in need of replacement
- Dire need for infrastructure improvements
- \$4.8 million annual savings from steam system replacement alone
- Savings funded \$45 million in improvements financed over 15 years

15 ECM's, Including:

- Replacement of **13 miles** of pipe
- Central Plant improvements
- Energy Management System Upgrades
- Ozone laundry treatment
- Lighting & Water Upgrades



University of Rhode Island

Twenty Five Year Ongoing Long Term Partnership

16,000 Student Flagship Campus:

- 4 Campuses, 145 Buildings
- Over 3,700,000 SF
- 1985-2010: \$40 million over 7 phases

ECM's Included:

- Energy Management System Upgrades
- Steam Trap Replacement
- Chiller/Boiler Replacements
- PE Motor Upgrades
- Variable Frequency Drives
- PC Power Controls
- Window Replacements
- Recirculating Aquaculture



Testimonial:

““Our contract with NORESO will generate immediate energy savings without costing us any up-front capital expenditures. It’s a win-win solution for URI and the state’s taxpayers,” said J. Vernon Wyman, URI assistant vice president for business services. “In addition, it will reduce the University’s carbon footprint substantially.””

University of Rhode Island

ECM Highlight: Aquaculture Recirculation System

Existing Conditions

- Utility bill analysis revealed \$260,000 annual water bill for one facility
- Over 93 million gallons of water were being used annually for once through aquaculture system at East Farm campus
- Water use was affecting the local aquifer and further investigation revealed that the University was pending fines from the EPA



University of Rhode Island

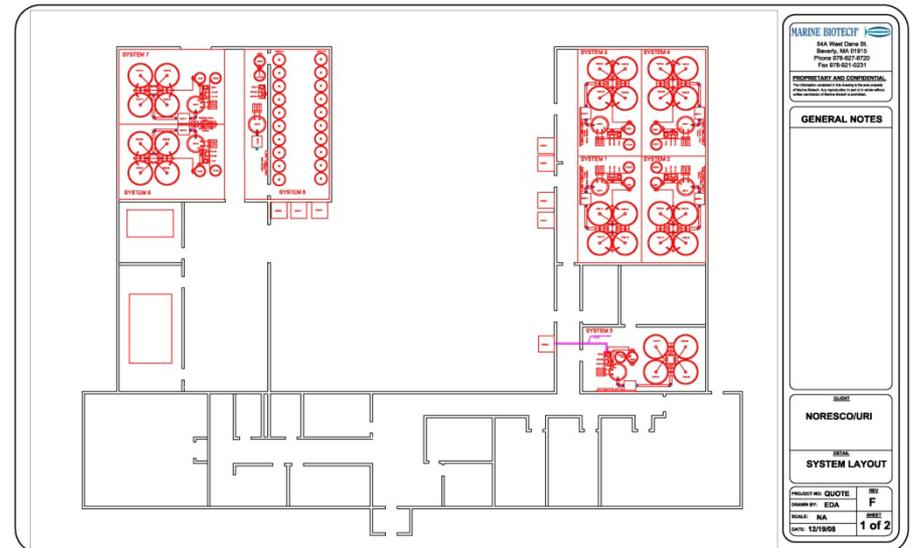
ECM Highlight: Aquaculture Recirculation System

Implemented Solution

- NORESKO researched potential solutions – worked extensively with University Professors, sought industry expertise
- Designed/Developed recirculation system

Benefits

- 80% water savings
- 50% cost savings
- Environmentally Responsible
- Learning tool for students



Contact Information

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