

True Craftsmanship Endures.®

ZAMPELL

Insulation = Energy Savings!

3E Plus[®] INSULATION ENERGY APPRAISALS

IDENTIFY



90' Steam Piping (6")

"In US refineries alone, the crude oil equivalent heat loss resulting from damaged or missing insulation approaches the future crude oil production of the Arctic National Wildlife Refuge (ANWR)."

Gordon H. Hart, P.E.
3/1/06

ANALYZE

NIA 3E Plus[®] National Insulation — Association — Program

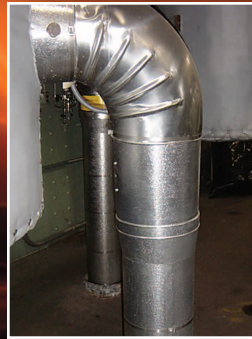
(see back for details)

Fuel.....Oil
Pipe.....Steel
Hours of Operation per Year....8,320
Temp (°F).....560
Cost of Fuel (\$/gal).....1.31

Bare Surface

Energy Cost (\$/ft/yr)\$366.00
Heat Loss (Btu/ft/yr).....29,060,000
Energy Cost (\$/yr) \$32,940.00

INSULATE



"We all know insulation is important, but the Program does a great job quantifying the energy savings, relating the savings to current energy costs and presenting a payback period that makes sense to an operator."

Plant Manager

3" Mineral Fiber (Jacketed)

Insulated

Energy Cost (\$/ft/yr).....\$15.26
Heat Loss (Btu/ft/yr).....1,210,000
Energy Cost (\$/yr).....\$1,373.40

SAVE

Energy Savings

- **3 Month Payback**
- **Cost Savings (\$/yr):**
\$31,567.00

• Greenhouse Gas Savings

CO₂ (lbs).....534,132
NO_x (lbs)1,031
Carbon Equivalents (lbs).....145,588

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CERTIFIED INSULATION ENERGY APPRAISER*

WHAT IS IT?



3E Plus[®] Program

Insulation Energy Appraisal

- Evaluates the Thermal Performance of insulated vs. uninsulated piping and equipment.
- Translates Btu losses into dollars.
- Calculates greenhouse gas emissions.

HOW DOES IT WORK?



Appraiser meets with facility manager to determine scope of the appraisal.



Appraiser measures applicable pipes, ducts and equipment, gathering the appropriate process data.



Appraiser enters data in the 3E Plus[®] computer program to quantify potential improvements in energy savings, greenhouse gas emissions and overall cost savings.



Appraiser presents a report that documents:

- Energy costs and Btu losses with current system.
- Potential fuel cost savings and Btu savings with an insulation upgrade.
- Potential environmental impact of reduced greenhouse gas emissions from increased energy savings and reduced fuel consumption.

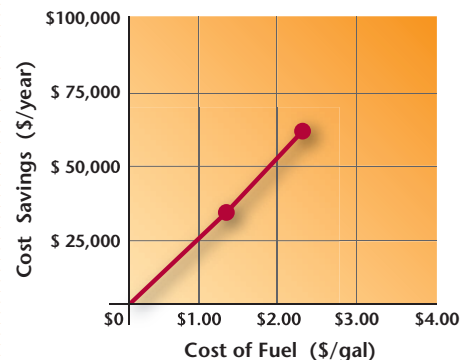


Appraiser and facility manager review the insulation option and various payback scenarios.



Energy Appraisals can be supported by Infrared Thermography when requested.

HOW ARE SAVINGS AFFECTED BY ENERGY PRICES?



In our 90' example, as energy costs fluctuate, the above chart approximates the savings.



* "At the Department of Energy (DOE) our goal is to work closely with U.S. manufacturing plants and facilities on energy efficiency programs that can help them operate more efficiently. We at DOE have reviewed and embraced the National Insulation Association's Insulation Energy Appraisal Certification Program as an example of one of these programs. We have jointly agreed to an Allied Partnership relationship to promote its use. An insulation energy appraisal performed by an NIA certified appraiser can provide an energy user with a comprehensive assessment of the piping and equipment in a facility and provide recommendations that will help save energy, reduce fuel costs and greenhouse gas emissions."

Denise Swink
Deputy Assistant Secretary
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U.S. Department of Energy

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