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From: Meredith Brown racer@lanl.gov
Subject: Green Alert: Closing Steam Plants

Project Hanford Lessons Learned

Title: **Closing Steam Plants to Save More than \$108 Million**

Date: August 11, 1998
Identifier: 1998-RL-FDH-0024

Lessons Learned Statement:

Replacing old inappropriately sized facilities can result in significant cost savings.

Discussion of Activities:

In March 1997, Department of Energy (DOE) Richland Operations Office awarded an energy savings performance contract to Johnson Controls, Inc. (JCI) to modernize the energy systems in the 200 and 300 Areas of the Hanford Site. The contract required JCI to finance, construct, license, and operate package boilers to replace the old steam plants. JCI receives payments based on a fixed monthly rate consistent with its agreement with DOE to achieve guaranteed energy savings.

Analysis:

Package boilers are portable, state-of-the-art steam production units. Each boiler is housed in a pre-engineered building that is approximately 650 square feet. The boilers are modular and can be expanded if energy needs grow.

The new closed loop cycle package boilers eliminate steam and condensate discharges to the ground. The thermal efficiency of the new boilers is superior because they use modern technology and they are located adjacent to the facilities that they serve, eliminating the need for extensive steam piping systems. The long piping systems from the former centralized steam plants resulted in significant energy loss between the point of generation and the using facility. The boilers in the 200 Areas run on high-quality diesel and the boilers in the 300 Area run on natural gas. Both fuels burn cleaner than heavy oil and coal and thus have helped reduce air emission.

Recommended Actions:

DOE sites with old steam distribution systems sized for production operations should consider replacing them with modern appropriately sized units.

Estimated Savings/Cost Avoidance: Saving more than \$108 million over 25 years

Priority Descriptor: GREEN/Good Work Practice

Functional Categories (DOE): Environmental Restoration & Waste Management, Other (Privatization)

Functional Categories (Hanford specific): None

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References: Hanford Reach, March 30, 1998