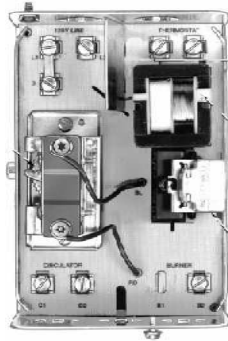




AUTOMATIC OUTDOOR RESET CONTROLS

"By adding Automated Outdoor Reset Control that works alongside the Boiler manual controls, fuel oil savings Of up to 30% or more may be seen"



MANUAL CONTROLLER



OLD MARKAIR – BETHEL, ALASKA 2001



MORAVIAN CHURCH – BETHEL, AK 2001



MARKAIR – KING SALMON 1991



CHEVAK SCHOOL DISTRICT - 1992

Note: Good practice is to install Outdoor Reset Controls only on boilers

that first follow mandatory maintenance procedures.

Standard conventional manual temperature controls supplied with boilers are just "MANUAL CONTROLLERS". When you manually set the control to shut the boiler off at 180F degrees it stays that way 24/7 365 days of the year unless the operator manually decides to turn it down. This consumes a tremendous amount of fuel oil and in some cases 40% excessively too much fuel oil!

Adding automatic outdoor reset controls to recover that lost fuel oil is not a new concept. Throughout the United States, Europe and Alaska, automatic controls are installed in commercial applications such as office buildings, apartment buildings, hospitals, and churches by major HVAC Corporations such as Landis Gyr, Siemens, Honeywell, and Johnson Controls.

Automatic temperature outdoor reset controls are at affordable prices to commercial and residential building owners, a typical payback can be less than a year on capital investment to an owner due to high cost of oil.

As delineated throughout this documentation percentage of fuel oil payback savings varies based on many factors, e.g. building type, etc. Since 1990, Nushagak Consultants has been installing automatic outdoor reset controls and has documented some installations showing the variations in savings:

1990 - Chevak School District- \$10,000. saved annually; 12% in Heating Fuel Oil Savings

2001 - Bethel Moravian Church: \$3,000 saved annually- 21% in Heating Oil Savings

1991 - Markair Terminal King Salmon - 15,000 gallons past year usage - 9000 gallons used 1992 - 40% savings in Heating fuel oil costs

In 1993 based on the substantial savings in King Salmon Markair elected to install automatic outdoor reset controls in their facilities locations at Deadhorse, Barrow, Fairbanks and Kodiak.

Other installations of Automatic Outdoor Reset Controls installed by Nushagak Consultants are located in the Pilot Station Native Store (2004) and Old Markair Terminal Bethel (2001). No historical data is available for these current installations.