PACKAGE ID - 001278IBMPC00 CALDAR

KWIC TITLE - Calorimeter Data Acquisition and Reporting Software

AUTHORS - Plummer, J.R.
Westinghouse Savannah River Co., Aiken, SC (United States)

Levi, G.
Westinghouse Savannah River Co., Aiken, SC (United States)

LIMITATION CODE -COPY **AUDIENCE CODE -** LIM

COMPLETION DATE - 10/30/1997 **PUBLICATION DATE -** 07/20/1998

DESCRIPTION - The calorimeter Data Acquisition and Reporting Program performs the calculations necessary to calculate the calorimetric sample results in grams and provide a printable report for up to twelve Mound Calorimeters. To determine a standard's wattage or sample gram fill, the reporting program retrieves the output voltage from the power supply at the calorimeter and a temperature resistant resistor via a voltmeter and digital input card in a Hewlett Packard Data Acquisition Unit (DAQ). From the retrieved voltage data, the reporting program can calculate a standard's wattage output and sample gram fill. The reporting program also determines equilibrium (stability) by performing a stability algorithm bassed on user defined slope an/or sigma values for the previous forty values. Once the stability is determined, the reporting program will notify the user that the calorimeter has reached equilibrium. The Calorimeter Data Acquisition and Reporting Program operates continuously as described to monitor for calorimeter equilibrium and to generate a printable report with sample results.

PACKAGE CONTENTS - Media Directory; Software Abstract; Program Documentation; Media Includes Source Code, Executable Module;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 CD Rom

METHOD OF SOLUTION - The software accepts a Voltage input data and converts it to a power reading. The power reading is statistically analyzed for stability. When stability is achieved and the user accepts the power reading, the software executes the algorithms necessary for converting the power reading to gram fill weight.

COMPUTER - IBM PC

OPERATING SYSTEMS - Win 95, WinNT

PACKAGE ID - 001278IBMPC00 CALDAR

PROGRAMMING LANGUAGES - Visual Basic 4.0 (95%) with Olectra Chart OCX (5%)

SOFTWARE LIMITATIONS - Monitors and reports for up to 12 calorimeters.

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - Main screen shows summary of all Calorimeter Data and stability. Provides Graphs depicting Calorimeter Power versus Time. User configurable unit types, heat standards, scan time, setpoints and hardware configuration. Calculates decay data. Collects standard data by calorimeter and unit type for QC use. Report data can be viewed and printed at any time during a run.

RELATED SOFTWARE - HP-IBI/O libraries for instrument control.

HARDWARE REQS - IBM PC, Windows 95 or NT, 17 inch monitor and minimum of 16 MB RAM. This software is designed to operate with an HP 3852A Data Acquisition Unit.

TIME REQUIREMENTS - Minimum scan time for polling and controlling of 12 Calorimeters and 5 waterbaths is approximately 2 seconds using a Pentium 100 machine with 16MB of RAM. Scan time is user configurable.

REFERENCES - J.R. Plummer, The Calorimeter Data Acquisition and Reporting Software (CALDAR) Version 1.1, jULY 20, 1998.

ABSTRACT STATUS - Released AS-IS 2/8/1999.

SUBJECT CLASS CODE - Z

KEYWORDS -
COMPUTER PROGRAM DOCUMENTATION
C CODES
DATA
DATA ACQUISITION
CALORIMETRY

EDB SUBJECT CATEGORIES -
990200

SPONSOR - DOE/DP

PACKAGE TYPE - AS - IS