

PACKAGE ID - 001162MLTPL00 GNOCIS

KWIC TITLE - Generic NOx Control Intelligent System

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

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DESCRIPTION - GNOCIS is a system of programs designed to perform on-line closed-loop optimization of utility boilers. The major components of the system include: GNREAD A program which resides on the host digital control system (DCS) that retrieves data from the DCS and then transmits the collected data to the GNOCIS host system. GNWRITE A program which resides on the host DCS that receives data from the GNOCIS host platform and then sends this information to the DCS. GNARCH A program which resides on the GNOCIS host platform that receives data from GNREAD or GNCTL and then archives this data on a periodic basis. GNCTL A program which resides on the GNOCIS host platform that receives data from GNREAD and then executes the optimizer/combustion model. GNDCS Configuration changes to the DCS which allows automatic implementation of the GNOCIS recommendations and closed-loop operation. Substantial safeguards and constraints are imbedded in this component to prevent adverse impact on unit operation.

PACKAGE CONTENTS - Media Directory; Software Abstract; Operator's Manual; Software Configuration Manual; Media Includes Source Code;

SOURCE CODE INCLUDED? - Yes

MEDIA QUANTITY - 1 3.5 Diskette

METHOD OF SOLUTION - On a periodic basis, GNREAD retrieves process data and various flags from the DCS, performs time averaging of the

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METHOD OF SOLUTION - (CONT) data, and then sends this data to GNARCH and GNCTL. GNARCH stores this data to disk. GNCTL uses the process data to ascertain the current state of the plant, make predictions concerning the plant state based on projected moves, generate recommendations for plant operation, and transmits the recommendations to other processes. GNWRITE retrieves recommendations and various flags from GNCTL and sends this information to the DCS. GNDCS uses the information originating in GNCTL to control the unit to the recommended set points.

COMPUTER - MLT-PLTFM

OPERATING SYSTEMS - Machine Dependent

PROGRAMMING LANGUAGES - C

SOFTWARE LIMITATIONS - Depending on the complexity of the optimization to be performed, more powerful platforms may be required.

SOURCE CODE AVAILABLE (Y/N) - Y

UNIQUE FEATURES - GNOCIS is designed to be an on-line, closed loop optimization system for utility boilers.

RELATED SOFTWARE - GNREAD and GNWRITE require Foxboro's Application Interface Software (AIS) for Foxboro installations. The current version of GNOCIS interfaces with Pavilion Technologies Process Insights.

OTHER PROG/OPER SYS INFO - Current version requires some third party software licenses.

HARDWARE REQS - GNOCIS host: PC running windows NT; 32 MB memory; 0.5 GB disk Sun Sparc running Solaris 2.3 or greater; 32 MB memory; 1 GB disk DCS host: Supported DCS.

TIME REQUIREMENTS - The current version of the GNOCIS system currently has a one minute cycle time. This could be shortened or lengthened based on the complexity of the optimization to be performed or the host platform available.

REFERENCES - Southern Company Services, Generic NOx Control Intelligent System (GNOCIS), GNOCIS Software Configuration Manual for Gaston Unit 4, February 1997; Southern Company Services, Generic NOx Control Intelligent System (GNOCIS), GNOCIS Operators Manual for Gaston Unit 4, February 1997.

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DIGITAL SYSTEMS
MANUALS
BOILERS
POLLUTION CONTROL
POLLUTION CONTROL EQUIPMENT

EDB SUBJECT CATEGORIES -

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SPONSOR - DOE/ER

PACKAGE TYPE - SCREENED