R03023

Date of Request: August 22, 2003

1. **Submitting Entity & Address: PGAS Systems, A Division of Hanover Measurement Services Company, L.P., 12825 Capricorn Stafford, TX 77477**
2. **Contact Person, Phone, Fax, Electronic Mailing Address: Ardis Bartle Sales Representative (281) 340-3600 x222 (281) 340 3609 ardis@pgas.com**
3. **Description of Proposed Standard or Enhancement:**

Proposal for XML File Format as a New Industry Standard for Exchange of Natural Gas Custody Transfer Measurement Data

4. **Use of Proposed Standard or Enhancement (include how the standard will be used, documentation on the description of the proposed standard, any existing documentation of the proposed standard, and required communications protocols):**

The purpose of this standard file format is that it can be used for the exchange of gas measurement data from SCADA (or equivalent polling systems) to measurement systems AND from measurement systems to measurement systems. The formatting of the data file is based on the industry XML standards. XML (eXtensible Markup Language) is a richly featured universal format for structuring data so that it can be exchanged efficiently. Some of the reasons for choosing XML were that it is license-free, platform independent and well supported. A properly formatted XML data file is machine readable and human intelligible. The specific data to be included in the exchange format are custody transfer measurement data containing meter station hourly and daily volume information, meter configuration information, gas quality information, and, in the case of data direct from SCADA systems, alarm and event information.

5. **Description of Any Tangible or Intangible Benefits to the Use of the Proposed Standard or Enhancement:**
   a. **Standards in exchanging gas measurement data provides very easy exchange of data between all**

types of measurement software products including SCADA systems, measurement systems, and gas accounting systems. This ease of data interchange will significantly reduce the cost to the gas industry for interfacing these types of systems.

b. The exchange format is built on top of the very strong XML standard which is self documenting, hierarchical (allows the exchange format to express multiple levels of data easily), and very flexible to allow new data fields, all of which will reduce implementation costs dramatically.

c. The exchange format flexibly addresses data transfer from upstream system (i.e., SCADA to measurement), parallel transfers (i.e., measurement system to measurement system or other variations such as outsourced chart integration service company to measurement system), and downstream transfers (i.e., measurement system to gas accounting or nominations). This flexibility to cover multiple scenarios translates to reduced cost of implementation in general and a single standard to maintain instead of several (meaning less work for NAESB and the industry).

6. **Estimate of Incremental Specific Costs to Implement Proposed Standard or Enhancement:**

Relatively low cost of implementation since creation of XML data from databases such as Microsoft SQL Server and Oracle is a straightforward programming task today.

7. **Description of any Specific Legal or Other Considerations:**

None

8. **If this Proposed Standard or Enhancement is Not Tested Yet, List Trading Partners Willing to Test Standard or Enhancement (Corporations and Contacts):**

Sid Richardson Gas – Brenda McGough
Enron Corporation - Sandy Jones
AEP/Houston Pipeline – Greg Metoyer
Northern Natural Gas – Ellis Stern
Dean Northcutt – OXY
Dewayne Mosely – ONCOR
Enogex – Bruce Wallace

ONEOK – Chris Spriggs
Crosstex – Jay Averett
Enterprise Pipeline – Duane Toups
Shell Gas Transmission – David Wofford
Amerada Hess – Patrick Cummings
Duke Energy – Steve Harless

9. If this Proposed Standard or Enhancement is in Use, Who are the Trading Partners?

Not in use yet.

10. Attachments (such as: further detailed proposals, transaction data descriptions, information flows, implementation guides, business process descriptions, examples of ASC ANSI X12 mapped transactions:

See attached proposed specification.

Use of XML for Electronic Data Exchange

Gas measurement data can be collected from field flow computers, transmitted between internal company systems, or transmitted to external companies in many different electronic file formats. These different formats range from simple text files to proprietary binary formats and can differ from computer application to another and from one vendor to another. Some of the more common file formats used today are fixed formatted ASCII text, binary, EDI or comma separated ASCII text. GISB currently recommends the use of an EDI formatted file for volume information exchange between companies.

The proposal to use XML as a standardized format can help eliminate many of these different formats. XML is a universal data format for integrated electronic business solutions. Unlike traditional electronic data file formats, XML data does not require relational schemata, file description tables, external data type definitions, etc., because the data itself contains this information.

Why Use XML?

Simplicity - Information coded in XML is easy to read and understand by a user, plus computers can process it easily. XML provides for the storage of data as simple text.

Openness - XML is a World Wide Web Consortium (W3C) standard, endorsed by software industry market leaders. XML is license-free, platform-independent, and well supported. The platform-independent nature of XML makes it ideal for use on and over the Web. New e-business models are driving the need for transparent exchange of transaction-based data over the Internet.

Extensibility - There is no fixed set of tags. New tags can be created, as they are needed.

Self-description - In traditional electronic file formats the user receiving the data would require schemas or a data dictionary that defined the record layout. XML documents can be stored without such definitions, because they contain metadata in the form of tags and attributes.

Machine-readable - Tags, attributes and element structure provide context information that can be used to interpret the meaning of content. This is a major advantage other type of electronic file formats, where context information is difficult or impossible to evaluate.

Internationalization - XML supports multilingual documents and the Unicode standard. This is important for the internationalization of applications.

Facilitates the comparison and aggregation of data - The tree structure of XML documents allows documents to be compared and aggregated efficiently element-by-element.

Can embed existing data - Mapping existing data structures like file systems or relational databases to XML is simple. XML supports multiple data formats and can cover all existing data structures.

Accepted by the industry - Software AG, IBM, Sun, Microsoft, Netscape, DataChannel, SAP and many others have already announced support for XML. Microsoft will use XML as the exchange format for its Office product line, while both Microsoft's and Netscape's Web browsers support XML. SAP has announced support of XML through the SAP Business Connector with R/3. Software AG supports XML in its Bolero and Natural product lines and provides Tamino, a native XML database.

Future-Oriented Technology - XML is the endorsed industry standard of the World Wide Web Consortium (W3C) and is supported by all leading software providers. Furthermore, XML is also the standard today in an increasing number of other industries, for example health care.

Supports Digital Signature - Digital signatures are important because they provide end-to-end message integrity guarantees, and can also provide authentication information about the originator of a message. The signature is generated at the time the file is created, and it can be verified at the time the file is processed. An XML signature would define a series of XML elements that could be embedded in, or otherwise affiliated with, any XML document. It would allow the receiver to verify that the file has not been modified from what the sender intended.

Use of XML for Electronic Data Exchange

Gas measurement data can be collected from field flow computers, transmitted between internal company systems, or transmitted to external companies in many different electronic file formats. These different formats range from simple text files to proprietary binary formats and can differ from computer application to another and from one vendor to another. Some of the more common file formats used today are fixed formatted ASCII text, binary, EDI or comma separated ASCII text. GISB currently recommends the use of an EDI formatted file for volume information exchange between companies.

The proposal to use XML as a standardized format can help eliminate many of these different formats. XML is a universal data format for integrated electronic business solutions. Unlike traditional electronic data file formats, XML data does not require relational schemata, file description tables, external data type definitions, etc., because the data itself contains this information.

Why Use XML?

Simplicity - Information coded in XML is easy to read and understand by a user, plus computers can process it easily. XML provides for the storage of data as simple text.

Openness - XML is a World Wide Web Consortium (W3C) standard, endorsed by software industry market leaders. XML is license-free, platform-independent, and well supported. The platform-independent nature of XML makes it ideal for use on and over the Web. New e-business models are driving the need for transparent exchange of transaction-based data over the Internet.

Extensibility - There is no fixed set of tags. New tags can be created, as they are needed.

Self-description - In traditional electronic file formats the user receiving the data would require schemas or a data dictionary that defined the record layout. XML documents can be stored without such definitions, because they contain metadata in the form of tags and attributes.

Machine-readable - Tags, attributes and element structure provide context information that can be used to interpret the meaning of content. This is a major advantage other type of electronic file formats, where context information is difficult or impossible to evaluate.

Internationalization - XML supports multilingual documents and the Unicode standard. This is important for the internationalization of applications.

Facilitates the comparison and aggregation of data - The tree structure of XML documents allows documents to be compared and aggregated efficiently element-by-element.

Can embed existing data - Mapping existing data structures like file systems or relational databases to XML is simple. XML supports multiple data formats and can cover all existing data structures.

Accepted by the industry - Software AG, IBM, Sun, Microsoft, Netscape, DataChannel, SAP and many others have already announced support for XML. Microsoft will use XML as the exchange format for its Office product line, while both Microsoft's and Netscape's Web browsers support XML. SAP has announced support of XML through the SAP Business Connector with R/3. Software AG supports XML in its Bolero and Natural product lines and provides Tamino, a native XML database.

Future-Oriented Technology - XML is the endorsed industry standard of the World Wide Web Consortium (W3C) and is supported by all leading software providers. Furthermore, XML is also the standard today in an increasing number of other industries, for example health care.

Supports Digital Signature - Digital signatures are important because they provide end-to-end message integrity guarantees, and can also provide authentication information about the originator of a message. The signature is generated at the time the file is created, and it can be verified at the time the file is processed. An XML signature would define a series of XML elements that could be embedded in, or otherwise affiliated with, any XML document. It would allow the receiver to verify that the file has not been modified from what the sender intended.

PGAS Systems - Hanover Measurement Services Company, L.P.

PGASXM

XML Import File Format
Requirements and Specifications

Version 1.1

Revision History

Date	Version	Description	Author
04/01/2003	1.0	Develop Specifications	Kenneth Cessac
07/30/2003	1.1	Revised	Kenneth Cessac

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this document is to define a standard file format that can be used for the exchange of gas measurement data between internal and external customers and systems. The formatting of the data file is based on the industry XML standards. XML (eXtensible Markup Language) is a richly featured universal format for structuring data so that it can be exchanged efficiently. Some of the reasons for choosing XML were that it is license-free, platform independent and well supported. A properly formatted XML data file is machine readable and human intelligible.

This document provides a basic description on the use of XML as a method for measurement data exchange. For additional detail concerning the use of XML refer to the World Wide Web Consortium at (http://www/w3.org).

1.2 Definitions, Acronyms and Abbreviations

XML – eXtensible Markup Language

1.3 References

The World Wide Web Consortium (W3C) is the official standards organization for XML. The W3C web site is (http://www.w3.org).

2. Overall Description

The PGAS^{XM} import application is designed to process and store measurement related setup and volume data into the PGAS database. The standard data file that the PGAS import application will process is based on the industry standard XML format. Listed below are the PGAS main elements and their associated child element names:

- TRANSACTION
  - STATION
    - STN_CONFIG
      - STN _CONFIG_REC
    - STN _VOLUME_HOURLY
      - STN _VOLUME_HOURLY_REC
    - STN _VOLUME_DAILY
      - STN _VOLUME_DAILY_REC
    - STN _VOLUME_MONTHLY
      - STN _VOLUME_MONTHLY_REC
    - STN _QUALITY
      - STN _QUALITY_REC
    - STN _EVENT
      - STN _EVENT_REC
    - STN _ALARM
      - STN _ALARM_REC
  - METER
    - MTR_CONFIG
      - MTR_CONFIG_REC
    - MTR_VOLUME
      - MTR_VOLUME_REC

- MTR_VOLUME_HOURLY
  - MTR_VOLUME_HOURLY_REC
- MTR_DAILY_VOLUME
  - MTR_DAILY_VOLUME_REC
- MTR_MONTHLY_VOLUME
  - MTR_MONTHLY_VOLUME_REC
- MTR_QUALITY
  - MTR_QUALITY_REC
- MTR_EFM_QUALITY
  - MTR_EFM_QUALITY_REC
- MTR_EVENT
  - MTR_EVENT_REC
- MTR_ALARM
  - MTR_ALARM_REC

o GAS_QUALITY

- GQ_CONFIG
  - GQ_CONFIG_REC
- GQ_PERIODIC
  - GQ_PERIODIC_REC
- GQ_HOURLY
  - GQ_HOURLY_REC
- GQ_DAILY
  - GQ_DAILY_REC
- GQ_MONTHLY
  - GQ_MONTHLY_REC
- GQ_EVENT
  - GQ_EVENT_REC
- GQ_ALARM
  - GQ_ALARM_REC

Some of the child elements defined above can contain additional child elements. For example, the element METER_PERIODIC_VOLUME will contain child elements named RECORD, which will contain all of the attributes related to the meters periodic volume record.

3. Specific Requirements

3.1 Functionality

The following comments and rules apply:

- Date fields in the PGAS import format files should be presented in the form of ISO 8601 date time format, with optional time and no optional zone. Example, “2002-07-26T15:00:00" (yyyy-mm-ddThh:mn:ss).
- If fields are not available from the source system then elements should be either removed from the data file or the elements value left empty by placing quotations adjacent to each other.
- All PGAS defined element and attribute names should be in all uppercase letters.
- Element and Attribute names shall have a maximum size of 25 characters in length.
- An element name must begin with a letter, an underscore (_) or a colon (:).
- After the first character, the element name may contain letters, digits, hyphens (-), underscores (_), periods (.), or colons (:).

- Element names cannot begin with “XML” or its variants because these names are all protected names.
- The first line of all PGAS XML files should be the XML declaration:
    - “<?xml version=”1.0”?>
- The root element should be the PGAS XML element and can include attributes about the file version and description of the file:
    - <PGAS_XML PGAS_XML_VERSION="1.0" DESCRIPTION="{EXAMPLE PGAS XML DATA FILE}">
- A data file can only contain one root element.
- Elements contained within the root element can have child elements, but child elements must be properly nested. All of the elements contained by the root element are child elements of the root element.
- The data types defined within this document are the PGAS xml default data types. If the data type is different then the source xml data file should include a schema record that defines the xml data types used.
- Attribute values must be enclosed in single or double quotes.
- All elements must be terminated. Non-empty elements must have a start tag and an end tag. Empty elements must be properly terminated.
- Related data values are data items that are associated to a single station. For example, if a station has two meters then all data items associated with the station and the two meters are considered related and can be within a single transaction.
- Related data values such as station and meter volume data for a single station can be combined within a TRANSACTION element.
- Data files that include data from more then one station must contain multiple Transaction elements, one for each grouping of related data.

3.1.1 Transaction Attributes

A Transaction Element is used to separate data from separate or unrelated stations. Data records from two separate stations must be separated and grouped within a transaction element. A Transaction element can contain attributes identifying the transaction. Listed below are some of the Attributes that can be associated to a Transaction:

Attribute Name	**Data Type**
TRANSACTION_ID	char(16)
DATA_SOURCE	Char(40)
DATE_CREATED	Datetime
DESCRIPTION	Char(64)
COMMENT	Char(100)
SEQUENCE	Integer

3.1.2 Station Configuration

The station configuration record is used for the reporting of configuration or setup information that is associated to the station and is shared by all of the meters related to the station. A Station Configuration element (STN_CONFIGURATION) can have one or more configuration records. Each configuration record will be labeled with the element name STN_CONFIGURATION_REC and contain one or more attributes. Listed below are some of the attributes that may be associated with a station configuration record:

3.1.2.1 Station Configuration Attributes

Attribute	Data Type	Min Length	Max Length	Definition
STATION_ID	String		20	The master station ID.
STATION_NAME	String		40	Station name
COMPANY	String		40	Contains the id of the company.
DRN	String		40	A unique GISB-assigned numbering system assigned to each station.
DATE_START	datetime	16	16	When this record is effective starts.
DATE_END	datetime	16	16	When this record effective date ends (Set to Dec 31 9999 for the last record)
STATUS	String	2	2	The id of the code for meter or station current status (Active, Inactive, Deleted, Disconnected)
CONNECT_DATE	datetime	16	16	Date when meters where physically connected.
INITIAL_FLOW_DATE	datetime	16	16	Initial flow date of gas through meters
CALENDAR_NAME	String		10	The contract calendar assigned to the station. The contract calendar sets the time period that is considered the contract period/ month. The default calendar is "Normal (1st - 31st)".
CONTRACT_HOUR	i1			Contract hour for this meter. Indicates when the cut off time is for gas accounting.
TIME_ZONE	Char(3)			The id of the code for time zones this configuration is located in.

Attribute	Data Type	Min Length	Max Length	Definition
PRESS_BASE	Real		4	The id of the code for Contract pressure value to use for this station/meter.
TEMP_BASE	Real		4	The id of the code for Temperature to use as a default for calculation.
ATMOSPHERIC_PRESS	Real		4	Atmospheric pressure at site where meter is located.
ENERGY_BASIS	Char(2)			The id of the code for Type of BTU to use for calculating the volume records for meter.
WATER_VAPOR_THRESHOLD	Real		4	Allowable water content for natural gas
DESTINITION	String		50	Gas destination from this meter
SOURCE	String		50	Gas source for meter
AREA	String		50	General purpose station/meter area description.
COUNTY	String		3	The id of the code for County where the station is located
DISTRICT	String		30	Geographical district name
ELEVATION	Integer			Elevation where meter is located.
LATITUDE	String		15	Latitude of the station
LONGITUDE	String		15	Longitude of the station
QUARTER	String		8	Quarter or Parish where station is located.
RANGE	String		3	Range where station is located.
SECTION	String		15	Section where station is located.
STATE	String		2	The id of the code for State where station is located.
TOWNSHIP	String		3	Township where station is located.
PIPELINE_NAME	String		50	Name of pipeline if a third-party pipeline interconnects at this meter
UPDATED_DATE	datetime	19	19	When this record was updated.

Attribute	Data Type	Min Length	Max Length	Definition
COMMENT	String		255	If this is a Station, comments about the Station, which contains one or more meters. If this is a Meter, comments pertaining to the Meter Run level.
SEQUENCE	Integer			

3.1.3 Meter Configuration

The meter configuration record is used for the reporting of configuration or setup information that is associated to a meter. A Meter Configuration element (MTR_CONFIGURATION) can have one or more configuration records. Each configuration record will be labeled with the element name MTR_CONFIGURATION_REC and contain one or more attributes. Listed below are some of the attributes that may be associated with a meter configuration record:

3.1.3.1 Meter Configuration Attributes

Attribute	Data Type	Min Length	Max Length	Definition
METER_ID	String		20	The meter configuration id.
METER_NAME	String		50	Name assigned by the owner of the flow meter.
START_DATE	datetime	16	16	When this record is effective starts.
END_DATE	datetime	16	16	When this record effective date ends (Set to Dec 31 9999 for the last record)
STATUS	String	2	2	The id of the code for meter or station current status (Active, Inactive, Deleted, Disconnected)
METER_TYPE	String		16	The id of the code for the types of meters: orifice, positive displacement, turbine, and ultrasonic.
METER_MAKE	String		50	The manufacturer of the meter.
MODEL	String		50	The meter model name and/or number.
SERIAL_NUM	String		50	Serial number for the meter
METER_SIZE	String		50	The diameter of the meter.
FPV_METHOD	String		10	The id of the code for the compressibility, or FPV, equations which are used along with EFM FPV method
AGA3_EQ	String		8	AGA-3 calculation code id (I.e. 85 vs. 92) to be used to calculate volume. Should set to 85 if field is not used.

Attribute	Data Type	Min Length	Max Length	Definition
TUBE_DIAMETE R	Real		4	Diameter of tube that is used by meter.
TUBE_MATERIAL	String		2	The id of the code for Material of which tube is made.
TUBE_REF_TEMP	Real		4	The temperature of the Tube at the time its Diameter was measured.
TUBE_SERIAL_NUM	char(50)			Tube serial number
PLATE_REF_TEMP	Real		4	Temperature at which the Orifice Diameter is measured.
PLATE_SERIAL_NUM	char(50)			Orifice serial number
PLATE_SIZE	Real		4	Orifice size used for meter starting on the effective date of record.
PLATE_MATERIAL	Integer			The id of the code for Material type of plate.
BETA	Real		4	A computed field: the Ratio of Orifice Size to Tube Diameter. This field is maintained on the table because it is used in user queries.
BASE_CAP	Real		4	A standard base capacity for the meter, determined by its manufacturer and model.
METER_FACTOR	Real		4	Rotary / turbine meter factor
IN_SITU	Real		4	The In Situ Calibration Factor is used to adjust volumes for meters to adjust for calibration.
TAP_TYPE	Char(2)			The id of the code for Differential tap type.
TAP_LOCATION	Char(2)			The id of the code for Static tap location - Tap location where the meters static pressure is measured.
FLOW_REC_DEV	Integer			The id of the code for Flow recording device

Attribute	Data Type	Min Length	Max Length	Definition
FLOW_CHART_CALC	String		10	The id of the code for Calculation type to use for chart. Direct, Percentage, Root, and External.
FLOW_CHART_MAKE	String		30	The id of the code for the brand of the flow chart recording device for meter.
FLOW_CHART_ROTA	Integer			The id of the code for Flow chart rotation, 1 day, 7 day, 8 day, 16 day, 31 day.
FLOW_CHART_TYPE	String		30	The id of the code for Flow chart type, Normal(2Pen), Combination(3Pen), Pseudo(2+1), Positive(scallop)
CYCLE_VOLUME	Real		4	Feet per cycle for new chart labels.
NUM_OF_DIALS	Integer		2	Number of dials for new chart labels
UNIT_OF_DIALS	Integer		2	Unit of dials for new chat labels
TEMP_CHART_MAKE	String		30	The id of the code for Brand of the temperature chart for meter.
TEMP_CHART_ROTA	Integer		2	The id of the code for Flow chart rotation, 1 day, 7 day, 8 day, 16 day, 31 day.
TEMP_MASTER_FLAG	Integer		2	Column the Insert Trigger checks to see if it needs to skip normal validation if it is an archive record
TEMP_SOURCE_MTR	String		20	The meter configuration id for Temperature source to be used for this meter. Populate this field ONLY if the meter does not have a temperature recorder AND actually uses another meter for temperature information.
DP_LO_RANGE	Integer			Differential low range for meter

Attribute	Data Type	Min Length	Max Length	Definition
DP_HI_RANGE	Integer			Differential range for meter.
SP_LO_RANGE	Integer			Static low range for meter
SP_HI_RANGE	Integer			Static pressure range for meter.
TF_LO_RANGE	Integer			Minimum temperature range for this meter
TF_HI_RANGE	Integer			Maximum temperature range for this meter
STATIC_TYPE	String		8	The id of the code for Pressure Method that should be used to calculate volumes for this meter.
ENABLE_FPV	Bit			If selected, disables calculation of AGA-7 compressibility correction factor (i.e. forces this factor to 1.0)
FPV_CUTOFF_PRESS	Real			If pressure is >= to the number entered here, it will recalculate. Set to 0 for recalculation always.
ENABLE_FR	Bit			Set when this factor should NOT be calculated
ENABLE_FPM	Bit			If selected, disables calculation of AGA-7 pressure correction factor (i.e. forces this factor to 1.0)
ENABLE_FTM	Bit			If selected, disables calculation of AGA-7 temperature correction factor (i.e. forces this factor to 1.0)
ENABLE_Y	Bit			Set when this factor should NOT be calculated
UPDATED_DATE	datetime	19	19	DateTime of creation or last modification of this meter configuration
COMMENT	String		255	Indicate if there is a comment for the record in meter parameters_1.
SEQUENCE	Integer			

Attribute	Data Type	Min Length	Max Length	Definition
REVISION	Integer			

3.1.4 Event Record Attributes

An event record must include an OBJECT_ID, EVENT_DATE, ATTRIBUTE_NAME and NEW_VALUE. The remaining attributes are optional parameters for the event record.

Attribute Name	Data Type
OBJECT_ID (METER_ID, STATION_ID or QUALITY_ID)	char(16)
EVENT_DATE	datetime
TAG_NAME	char(25)
CATEGORY	char(25)
NEW_VALUE	char(25)
OLD_VALUE	char(25)
DESCRIPTION	Char(64)
COMMENT	Char(100)
SEQUENCE	Integer

Listed below is an example PGAS event record using xml:

```
<MTR_EVENT >
  < MTR_EVENT_REC
        METER_ID="00012345-01"
        EVENT_DATE="2002-07-26T15:33:00"
        TAG_NAME="PLATE_SIZE"
        CATEGORY ="CONFIG_PARAMETER"
        NEW_VALUE="4.250"
        OLD_VALUE="4.000"
        DESCRIPTION="Plate size change"
        COMMENT =""
        SEQUENCE="201" />
  < MTR_EVENT_REC
        METER_ID="00012345-01"
        EVENT_DATE="2002-07-26T15:35:00"
        TAG_NAME="DIFF_PRESS"
        CATEGORY ="HIGH_RANGE"
        NEW_VALUE="200.0"
        OLD_VALUE="100.0"
        DESCRIPTION="Differential Pressure high range"
        COMMENT =""
        SEQUENCE="202"/>
</MTR_EVENT >
```

3.1.4.1 Event Record Category Definitions

Event Category	Description
CONFIG_PARAMETER	General-purpose category that is used to identify most configuration parameter changes.
HI_RANGE	High range or full-scale value.
LO_RANGE	Low range or zero scale value
HI_LIMIT	High alarm limit
LO_LIMIT	Low alarm limit
HIHI_LIMIT	High-High alarm limit
LOLO_LIMIT	Low-Low alarm limit
RATE_OF_CHANGE	Rate of change alarm limit
FIXED_VALUE	Inputs fixed or override value.
OVERRIDE_FLAG	Override (auto/manual) flag

3.1.5 Alarm Record Attributes

Attribute Name	Data Type
OBJECT_ID (METER_ID, STATION_ID or QUALITY_ID)	char(16)
ALARM_DATE	datetime
TAG_NAME	char(25)
CATEGORY	char(25)
STATE	char(25)
LEVEL	char(25)
DESCRIPTION	Char(64)
COMMENT	Char(100)
SEQUENCE	Integer

Listed below is an example PGAS event record using xml:

```
<MTR_ALARM >
  < MTR_ALARM_REC
        METER_ID="00012345-01"
        ALARM_DATE="2002-07-26T15:33:00"
        TAG_NAME="STATIC_PRESS"
        CATEGORY ="HIHI_LIMIT"
        STATE="ON"
        LEVEL="1010.00"
        DESCRIPTION=""
        COMMENT =""
        SEQUENCE="121"/>
  < MTR_ALARM_REC
        METER_ID="00012345-01"
        ALARM_DATE="2002-07-26T15:35:00"
        TAG_NAME="DIFF_PRESS"
        CATEGORY ="HI_LIMIT"
        STATE="OFF"
        LEVEL="100.0"
        DESCRIPTION="Reset Diff Press Hi Limit Alarm"
        COMMENT =""
        SEQUENCE="122"/>
</MTR_ALARM >
```

3.1.5.1 Alarm Record Category Definitions

Event Category	Description
HI_LIMIT	High alarm limit
LO_LIMIT	Low alarm limit
HIHI_LIMIT	High-High alarm limit
LOLO_LIMIT	Low-Low alarm limit
RATE_OF_CHANGE	Rate of change alarm limit
FAILURE	Equipment failure alarm
ALARM	General purpose alarm

3.1.6 Gas Quality Record Attributes

This import format supports gas analysis data (laboratory or on-line chromatograph). (* denotes mandatory columns.)

Attribute	Data Type	Min Length	Max Length	Definition
GAS_QUALITY_ID	String		20	The sample location identification number.
GAS_QUALITY_NAME	String		40	Sample location name.
EFFECTIVE_START_DATE	datetime	16	16	Date when analysis became effective (set to Jan 1, 1970 if this is the FIRST record for this meter)
EFFECTIVE_END_DATE	datetime	16	16	Last date when this record should be used for calculation (set to Dec 31, 9999 if this is the LAST record for this GQ)
CONTRACT_DAY	datetime	16	16	Used when periodic detail data is saved.
SAMPLE_DATE	datetime	16	16	Optional date of gas sample (may be used by EFM Import to select effective date) If not available, this should be set to the effective date.
ANALYZED_DATE	datetime	16	16	
PRESS_BASE	Real		4	Sample pressure base value.
TEMP_BASE	Real		4	Sample temperature base value.
METHANE	Real		4	Methane component of gas.
NITROGEN	Real		4	Nitrogen component of gas.
CARBON_DIOXIDE	Real		4	Carbon Dioxide component of gas.
ETHANE	Real		4	Ethane component of gas.
PROPANE	Real		4	Propane component of gas.
IBUTANE	Real		4	Iso-Butane component of gas.
NBUTANE	Real		4	Nbutane component of

Attribute	Data Type	Min Length	Max Length	Definition
				gas.
IPENTANE	Real		4	Iso-Pentane component of gas.
NPENTANE	Real		4	N_pentane component of gas.
HEXANE	Real		4	N_hexanes component of gas.
HEPTANE	Real		4	N_heptanes component of gas.
OCTANE	Real		4	N_octanes component of gas.
NONANE	Real		4	N_nonane component of gas.
DECANE	Real		4	N_decane component of gas.
HELIUM	Real		4	Helium component of gas.
HYDROGEN	Real		4	Hydrogen component of gas.
OXYGEN	Real		4	Oxygen component of gas.
CARBON_MONOXIDE	Real		4	Carbon Monoxide component of gas.
ARGON	Real		4	Argon component of gas.
H2O	Real		4	Water component of gas.
H2S	Real		4	Hydrogen Sulfide component of gas.
IDEAL_GRAVITY	Real		4	Ideal specific gravity - output from sample recalculation process
IDEAL_HEATING_VALUE	Real		4	Ideal heating value - output from sample recalculation process
Z	Real		4	Sample compressibility factor - output from sample recalculation process
REAL_GRAVITY	Real		4	Real Specific Gravity
DRY_HEATING_VALUE	Real		4	Dry heating value (BTU)
SATURATED_HEATING_VALUE	Real		4	Saturated energy (BTU) factor

Attribute	Data Type	Min Length	Max Length	Definition
ASDEL_HEATING_VALUE	Real		4	As delivered heating value
OPERATOR	String	0	30	
LAB_CODE	Integer			linked back to the reference table lab code
SAMPLE_ID	String	0	20	Optional sample Id, might be the laboratory assigned id.
SAMPLE_TEMP	Real		4	Temperature of sample use in gas analysis
SAMPLE_PRESS	Real		4	Pressure of sample use in gas analysis
SAMPLE_TYPE	String	0	2	Composite or spot sample type (set to composite for online chromatograph). Allowed values are defined in system code table. CO = Composite, SP = Spot, CH = chromatograph.
COMMENT	String	0	255	
SEQUENCE	Integer		4	
REVISION	Integer		4	

Notes:

- Neo-Pentane is not included in the AGA-8 calculations. This component is generally added to one of the other hydrocarbons.

3.1.6.1 Example Gas Quality Periodic XML Record

```
<GQ_PERIODIC>
  <GQ_PERIOCIC_REC
      GAS_QUALITY_ID ="00012345-01"
      EFFECTIVE_START_DATE="2002-07-01T09:00:00"
      EFFECTIVE_END_DATE="2002-07-02T09:00:00"
      PRESS_BASE="14.73"
      TEMP_BASE="60.00"
      SAMPLE_TEMP="65.00"
      SAMPLE_PRESS="610.0"
      METHANE="91.120"
      ETHANE="4.000"
      PROPANE="1.000"
      IBUTANE="0.880"
      NBUTANE="0.500"
      IPENTANE="0.500"
      NPENTANE="0.500"
      NHEXANE="0.100"
      CARBON_DIOXIDE="1.700"
      NITROGEN="0.200"
      SEQUENCE="1" />
</GQ_PERIODIC>
```

3.1.7 Volume Record Attributes

This import format supports gas volume data: (* denotes mandatory attributes.)

Attribute	Data Type	Min Length	Max Length	Definition
METER_ID *	String		20	The periodic flow meter id.
METER_NAME	String		40	
START_DATE	datetime	16	16	Date and time indicating when volume record started.
END_DATE *	datetime	16	16	Date and time indicating when volume record ended.
CONTRACT_MONTH	datetime	16	16	Contract month of volume record.
CONTRACT_DAY	datetime	16	16	Contract day of volume record
CONTRACT_HOUR	Time	8	8	Contract hour of volume record
PRESS_BASE	Float		4	The contract pressure base used for this record.
TEMP_BASE	Float		4	The contract temperature base used for this record.
INDEX_ON	Float			Previous uncorrected volume On Index
INDEX_OFF	Float			Current uncorrected volume Off Index
INDEX_DIFFERENCE	Float			Index difference between index on and index off values.
UNCORR_VOLUME	Float		4	Turbine meter - uncorrected volume
DIFF_PRESS	Real		4	The differential pressure for this record.
STATIC_PRESS	Real		4	Static Pressure of flow record.
TEMPERATURE	Real		4	Flow Temperature - Temperature average that prevailed during the time flow was recorded.
FLOW_EXTENSION	Real		4	The square root of the product of differential and static pressures
FLOW_TIME_SECS	Float		4	Seconds of flow time - Actual number of seconds of flow between the time this record started and the time the record ended.
FLOW_TIME_MINS	Real		4	Minutes of flow time - Actual number of minutes of flow between the time this record started and the time the record ended.

Attribute	Data Type	Min Length	Max Length	Definition
FLOW_TIME_HOURS	Real		4	Hours of flow time - Actual number of hours of flow between the time this record started and the time the record ended.
INTEG_EXTENSION	Real		4	Integrator differential pressure.
INTEG_PRESS	Real		4	Integrator static pressure.
INTEG_TIME	Real		4	Integrator time in raw counts.
VOLUME	Float		8	MCF for record.
ENERGY	Float		8	MMBTU for record.
BATTERY_VOLTAGE	Real		4	EFM units battery voltage
FB	Real		4	Calculated basic orifice factor
CDFT	Real		4	Calculated AGA3-92 specific factor
DENSITY	Real		4	Calculated AGA3-92 specific factor
FA	Real		4	Orifice thermal expansion factor
FG	Real		4	Calculated gravity factor
FPB	Real		4	Calculated base pressure factor
FPM	Real		4	Calculated flowing pressure multiplier factor
FTM	Real		4	Calculated flowing temperature multiplier factor
FPV	Real		4	This is the calculated supercompressibility factor, Fpv = (Zb/Zf).5, defined as the square root of the ratio of compressibility at base conditions (Zb) and compressibility at flowing conditions (Zf) (NOTE: This should not be confused with the SQUARE of FPV as used in AGA-7).
FR	Real		4	Calculated Reynolds factor
FTB	Real		4	Calculated temperature base factor
FTF	Real		4	Calculated flowing temperature factor
CPRIME	Real		4	Consolidated coefficient
Y	Real		4	Calculated expansion (Y) factor
ZB	Real		4	Compressability factor at base temperature and pressure
ZF	Real		4	Compressability factor at flowing conditions

Attribute	Data Type	Min Length	Max Length	Definition
COMMENT	String			Comment for this record.
SEQUENCE	Integer			
REVISION	Integer			

3.1.7.1 Example Meter Volume XML Records:

```
<MTR_VOLUME>
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T15:00:00" END_DATE="2002-07-26T16:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T16:00:00" END_DATE="2002-07-26T17:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T17:00:00" END_DATE="2002-07-26T18:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T18:00:00" END_DATE="2002-07-26T19:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T19:00:00" END_DATE="2002-07-26T20:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
  < MTR_VOLUME_REC METER_ID="00012345-01" START_DATE="2002-07-
    26T20:00:00" END_DATE="2002-07-26T21:00:00" DIFF_PRESS="45.123"
    STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
    EXTENSION="206.523" VOLUME="455.0" ENERGY ="460.0" />
</MTR_VOLUME>
```

3.2 Supportability

- PGAS xml element and attribute names shall be in all uppercase lettering.
- Element and attribute names shall have a maximum length of 25 characters.
- Alarm and Event record Tag names shall be in all uppercase lettering and have a maximum length of 25 characters.
- Alarm and Event Category values shall be in all uppercase lettering and have a maximum length of 25 characters.

3.3 Licensing Requirements

[Defines any licensing enforcement requirements or other usage restriction requirements, which are to be exhibited by the software.]

3.4 Legal, Copyright and Other Notices

[This section describes any necessary legal disclaimers, warranties, copyright notices, patent notice, wordmark, trademark, or logo compliance issues for the software.]

3.5 Applicable Standards

[This section describes by reference any applicable standards, (and the specific sections of any such standards, which apply to the system being described). For example, this could include legal, quality and regulatory standards, industry standards for usability, interoperability, internationalization, operating system compliance, etc.]

4. Supporting Information

[The supporting information makes the SRS easier to use. It includes: a) Table of contents, b) Index, c) Appendices. These may include use-case storyboards or user-interface prototypes. When appendices are included, the SRS should explicitly state whether or not the appendices are to be considered part of the requirements.]

```
<?xml version="1.0" ?>
<!-- The following is an example PGAS XM data file using the standard xml
format.  -->
<!-- PGAS_XML PGAS_XML_VERSION="1.0" DESCRIPTION="(EXAMPLE PGAS XML DATA
FILE)"  -->
- <PGAS_XML>
  - <STATION STATION_ID="00012345" STATION_NAME="Houston Gas"
      COMPANY_ID="111" COMPANY_NAME="Big Texas Gas">
      <STATION_CONFIG DRN="1234567890" LEASE_NAME="BIG GAS LEASE" />
    - <STATION_DAILY>
        <RECORD STATION_ID="00012345" START_DATE="2002-07-26T09:00:00"
          END_DATE="2002-07-27T09:00:00" DIFF_PRESS="45.123"
          STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
          EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
        <RECORD STATION_ID="00012345" START_DATE="2002-07-27T09:00:00"
          END_DATE="2002-07-28T09:00:00" DIFF_PRESS="45.123"
          STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
          EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
        <RECORD STATION_ID="00012345" START_DATE="2002-07-28T09:00:00"
          END_DATE="2002-07-29T09:00:00" DIFF_PRESS="45.123"
          STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0"
          EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
      </STATION_DAILY>
    - <METER METER_ID="00012345-01" METER_NAME="Meter Tube One">
        <METER_CONFIG PRESSURE_BASE="14.73" TEMPERATURE_BASE="60.0"
          PLATE_SIZE="1.250" PLATE_MATERIAL="STAINLESS STEEL"
          TUBE_DIAMETER="4.026" TUBE_MATERIAL="CARBON"
          ATMOSPHERIC_PRESSURE="14.7" TAP_LOCATION="UPSTREAM"
          TAP_TYPE="FLANGE" />
      - <METER_PERIODIC>
          <RECORD METER_ID="00012345-01" START_DATE="2002-07-
            26T15:00:00" END_DATE="2002-07-26T16:00:00"
            DIFF_PRESS="45.123" STATIC_PRESS="945.23"
            TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"
            VOLUME="455.0" ENERGY="460.0" />
          <RECORD METER_ID="00012345-01" START_DATE="2002-07-
            26T16:00:00" END_DATE="2002-07-26T17:00:00"
            DIFF_PRESS="45.123" STATIC_PRESS="945.23"
            TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"
            VOLUME="455.0" ENERGY="460.0" />
          <RECORD METER_ID="00012345-01" START_DATE="2002-07-
            26T17:00:00" END_DATE="2002-07-26T18:00:00"
            DIFF_PRESS="45.123" STATIC_PRESS="945.23"
            TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"
            VOLUME="455.0" ENERGY="460.0" />
          <RECORD METER_ID="00012345-01" START_DATE="2002-07-
            26T18:00:00" END_DATE="2002-07-26T19:00:00"
            DIFF_PRESS="45.123" STATIC_PRESS="945.23"
            TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"
            VOLUME="455.0" ENERGY="460.0" />
          <RECORD METER_ID="00012345-01" START_DATE="2002-07-
            26T19:00:00" END_DATE="2002-07-26T20:00:00"
            DIFF_PRESS="45.123" STATIC_PRESS="945.23"
            TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"
```

VOLUME="455.0" ENERGY="460.0" />
<RECORD METER_ID="00012345-01" START_DATE="2002-07-26T20:00:00" END_DATE="2002-07-26T21:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
</METER_PERIODIC>
- <METER_EVENTS>
<RECORD METER_ID="00012345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
<RECORD METER_ID="00012345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
<RECORD METER_ID="00012345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
</METER_EVENTS>
</METER>
</STATION>
- <STATION STATION_ID="00022345" STATION_NAME="BOSTON OIL AND GAS">
<STATION_CONFIG DRN="1234532145" LEASE_NAME="LITTLE GAS LEASE" />
- <STATION_DAILY>
<RECORD STATION_ID="00022345" START_DATE="2002-07-26T09:00:00" END_DATE="2002-07-27T09:00:00" DIFF_PRESS="45.123" STATIC_PRESSURE="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD STATION_ID="00022345" START_DATE="2002-07-27T09:00:00" END_DATE="2002-07-28T09:00:00" DIFF_PRESS="45.123" STATIC_PRESSURE="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD STATION_ID="00022345" START_DATE="2002-07-28T09:00:00" END_DATE="2002-07-29T09:00:00" DIFF_PRESS="45.123" STATIC_PRESSURE="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
</STATION_DAILY>
- <METER METER_ID="00022345-01" METER_NAME="Meter Tube One">
<METER_CONFIG PRESSURE_BASE="14.73" TEMPERATURE_BASE="60.0" PLATE_SIZE="1.250" PLATE_MATERIAL="STAINLESS STEEL" TUBE_DIAMETER="4.026" TUBE_MATERIAL="CARBON" ATMOSPHERIC_PRESSURE="14.7" TAP_LOCATION="UPSTREAM" TAP_TYPE="FLANGE" />
- <METER_PERIODIC>
<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T15:00:00" END_DATE="2002-07-26T16:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />

<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T16:00:00" END_DATE="2002-07-26T17:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T17:00:00" END_DATE="2002-07-26T18:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T18:00:00" END_DATE="2002-07-26T19:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T19:00:00" END_DATE="2002-07-26T20:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
<RECORD METER_ID="00022345-01" START_DATE="2002-07-26T20:00:00" END_DATE="2002-07-26T21:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523" VOLUME="455.0" ENERGY="460.0" />
</METER_PERIODIC>
- <METER_EVENTS>
<RECORD METER_ID="00022345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
<RECORD METER_ID="00022345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
<RECORD METER_ID="00022345-01" EVENT_DATE="2002-07-26T15:33:00" TAG_NAME="PLATE_SIZE" CATEGORY="CONFIG_PARAMETER" NEW_VALUE="4.250" OLD_VALUE="4.000" PRIORITY="1.0" DESCRIPTION="Plate size change" COMMENT="" />
</METER_EVENTS>
</METER>
- <METER METER_ID="00022345-02" METER_NAME="Meter Tube Two">
<METER_CONFIG PRESSURE_BASE="14.73" TEMPERATURE_BASE="60.0" PLATE_SIZE="1.250" PLATE_MATERIAL="STAINLESS STEEL" TUBE_DIAMETER="4.026" TUBE_MATERIAL="CARBON" ATMOSPHERIC_PRESSURE="14.7" TAP_LOCATION="UPSTREAM" TAP_TYPE="FLANGE" />
- <METER_PERIODIC>
<RECORD METER_ID="00022345-02" START_DATE="2002-07-26T15:00:00" END_DATE="2002-07-26T16:00:00" DIFF_PRESS="45.123" STATIC_PRESS="945.23" TEMPERATURE="65.55" FLOW_TIME="60.0" EXTENSION="206.523"

VOLUME="**455.0**" ENERGY="**460.0**" />
<RECORD METER_ID="**00022345-02**" START_DATE="**2002-07-26T16:00:00**" END_DATE="**2002-07-26T17:00:00**" DIFF_PRESS="**45.123**" STATIC_PRESS="**945.23**" TEMPERATURE="**65.55**" FLOW_TIME="**60.0**" EXTENSION="**206.523**" VOLUME="**455.0**" ENERGY="**460.0**" />
<RECORD METER_ID="**00022345-02**" START_DATE="**2002-07-26T17:00:00**" END_DATE="**2002-07-26T18:00:00**" DIFF_PRESS="**45.123**" STATIC_PRESS="**945.23**" TEMPERATURE="**65.55**" FLOW_TIME="**60.0**" EXTENSION="**206.523**" VOLUME="**455.0**" ENERGY="**460.0**" />
<RECORD METER_ID="**00022345-02**" START_DATE="**2002-07-26T18:00:00**" END_DATE="**2002-07-26T19:00:00**" DIFF_PRESS="**45.123**" STATIC_PRESS="**945.23**" TEMPERATURE="**65.55**" FLOW_TIME="**60.0**" EXTENSION="**206.523**" VOLUME="**455.0**" ENERGY="**460.0**" />
<RECORD METER_ID="**00022345-02**" START_DATE="**2002-07-26T19:00:00**" END_DATE="**2002-07-26T20:00:00**" DIFF_PRESS="**45.123**" STATIC_PRESS="**945.23**" TEMPERATURE="**65.55**" FLOW_TIME="**60.0**" EXTENSION="**206.523**" VOLUME="**455.0**" ENERGY="**460.0**" />
<RECORD METER_ID="**00022345-02**" START_DATE="**2002-07-26T20:00:00**" END_DATE="**2002-07-26T21:00:00**" DIFF_PRESS="**45.123**" STATIC_PRESS="**945.23**" TEMPERATURE="**65.55**" FLOW_TIME="**60.0**" EXTENSION="**206.523**" VOLUME="**455.0**" ENERGY="**460.0**" />
</METER_PERIODIC>
- <METER_EVENTS>
<RECORD METER_ID="**00022345-02**" EVENT_DATE="**2002-07-26T15:33:00**" TAG_NAME="**PLATE_SIZE**" CATEGORY="**CONFIG_PARAMETER**" NEW_VALUE="**4.250**" OLD_VALUE="**4.000**" PRIORITY="**1.0**" DESCRIPTION="**Plate size change**" COMMENT="" />
<RECORD METER_ID="**00022345-02**" EVENT_DATE="**2002-07-26T15:33:00**" TAG_NAME="**PLATE_SIZE**" CATEGORY="**CONFIG_PARAMETER**" NEW_VALUE="**4.250**" OLD_VALUE="**4.000**" PRIORITY="**1.0**" DESCRIPTION="**Plate size change**" COMMENT="" />
<RECORD METER_ID="**00022345-02**" EVENT_DATE="**2002-07-26T15:33:00**" TAG_NAME="**PLATE_SIZE**" CATEGORY="**CONFIG_PARAMETER**" NEW_VALUE="**4.250**" OLD_VALUE="**4.000**" PRIORITY="**1.0**" DESCRIPTION="**Plate size change**" COMMENT="" />
</METER_EVENTS>
</METER>
</STATION>
</PGAS_XML>