DTE Energy

Implementation Standard
For
Electronic Data Interchange
TRANSACTION SET

810

Invoice
Outbound to Customer
VERSION: 1.1

Customer Guide

Please direct questions regarding this document or electronic delivery of payment to your DTE Energy assigned Account representative.

810 Invoice
Best Practices

Global Best Practices

Use of 810 as a Single Invoice

- This transaction set shall be used to represent a single invoice for a single customer. One account may contain multiple meters.

Use of Text Segments

- · The note (NTE) segment should be avoided because this segment is not machine-readable.

Other text segments, such as MSG and PID, may be used if their use will lead to machine readable information in subsequent applications.

Use of ZZ Qualifier

- · The use of data fields to transmit uncoded or textual information should be avoided. This practice is usually associated with the use of the ZZ qualifier as a normal course of doing business.

997 - Functional Acknowledgment

- The purpose of the 997 is to verify receipt of a transmitted document only, not the acceptance of the document. For example, the acceptance of a purchase order (850) is accomplished with the purchase order acknowledgment transaction (855).

Interchange Control Number

- A unique and sequential interchange control number should be used on every envelope that is transmitted to a trading partner. This approach will allow the receiver to audit the interchange for any duplicate or missing transmissions.

Use of Dun & Bradstreet (D-U-N-S) Number

- Dun & Bradstreet assigns a nine-digit identification number to every business entity. This number, known as the D-U-N-S number, should be used to identify the trading partners. A trading partner may append a four-digit suffix to the D-U-N-S number to uniquely identify a specific location within the entity; this number is referred to as a D-U-N-S + 4 number

Banking Transactions

- Guidelines that outline the use of transactions relating to interactions between a sender and the sender's financial institution are available from the Bankers EDI Council and the NACHA EDI Council. Other publications that address the use of financial payment transactions include Technical Report 1 (TR1) and Technical Report 2 (TR2); both of these publications are available from DISA.

Capitalization

- The use of all upper case (capital) letters is preferred over the use of mixed upper and lower case letters.

Document-Specific Best Practices

Use of the NTE Segment

- Although it is recommended that the NTE segment be avoided, there are occasions when the utility is required by law or regulation to include messages or notices in all invoices. Under these circumstances, the NTE segment should be used for notes and messages to be printed on the bill and the PID should be used for notes that apply directly to the IT1.

Use of the IT1 Segment

- An IT1 loop is used to accumulate all consumption and/or charge detail for a single meter or service. Each meter or service will be detailed in a separate IT1 loop.

Use of the MEA Segment

- The MEA segment is used to convey consumption readings for one metering period. Transaction Set 867 should be used if interval meter readings are required.

UIG Definitions for MEA07 Measurement Significance Codes

- The metering characteristics of the utility industry require measurement definitions in addition to those found in Data Element 935, Measurement Significance Code. The UIG has submitted data maintenance (DM) requests to have these additional definitions added to DE 935 in a future version of the X12 standards. In order to provide these measurement definitions for version 4010 implementations, the UIG has provided UIG-specific definitions for valid DE 935 codes. To assist application developers, who may wish to include the requested future codes in their application logic, the list of non-standard definitions found in MEA07 includes references to the requested codes.

Use of the PID Segment

- The PID segment is used to convey required messages that apply to a particular service only.

Use of the Detail IT1/REF Segment, Position 120

- This segment is used only when the IT1 loop is used to present account information. Trading partners using the meter model (where an IT1 conveys meter charges and usage) should provide the account reference information in the Header REF, position 050.

Use of the SLN Segment

- The IT1/SLN segment is used to overcome the limitation on the number of IT1/SAC loops. In some environments, more than 25 separate charges or allowances are associated with one IT1. Use of the SLN segment provides for a maximum of 1,000 individual SAC and TXI iterations. If and when the 810 is revised to permit more than 25 IT1/SAC loops, this 810 Guideline will be revised to remove the SLN segment.

Values in Elements SAC01 and SAC05

- The code used in SAC01 does not indicate the sign of the amount in SAC05. The amount shown in SAC05 may be either positive or negative; if negative, the minus sign, " -," must be transmitted. Trading partners who implemented the former guidance regarding SAC01 and SAC05 may continue to follow that guidance or may elect to revise their implementation to conform to the current guidance. New implementations should follow the guidance contained herein.

810 Invoice

Pos	Id	Segment Name	Req*	Max Use	Repeat	Notes
	ISA	Interchange Control Header	M	1		Must Use
	GS	Functional Group Header	M	1		Must Use

Functional Group=IN

Heading:

Pos	Id	Segment Name	Req*	Max Use	Repeat	Notes
010	ST	Transaction Set Header	M	1		Must Use
020	BIG	Beginning Segment for Invoice	M	1		Must Use
030	NTE	Note/Special Instruction	O	100		
040	CUR	Currency	O	1		
050	REF	Reference Identification	O	12		
LOOP ID – N1					**200**	
070	N1	Name	O	1		
080	N2	Additional Name Information	O	2		
090	N3	Address Information	O	2		
100	N4	Geographic Location	O	1		
110	REF	Reference Identification	O	12		
120	PER	Administrative Communications Contact	O	3		
130	ITD	Terms of Sale/Deferred Terms of Sale	O	>1		
140	DTM	Date/Time Reference	O	10		
212	BAL	Balance Detail	O	>1		

Detail:

Pos	Id	Segment Name	Req	Max Use	Repeat	Notes
LOOP ID - IT1					**200000**	
010	IT1	Baseline Item Data (Invoice)	O	1		
020	PAM	Period Amount	O	>1		
040	TXI	Tax Information	O	10		
059	MEA	Measurements	O	40		
060	QTY	Quantity	O	25		
120	REF	Reference Identification	O	>1		
150	DTM	Date/Time Reference	O	10		Must Use

LOOP ID – SLN				1000
200	SLN	Subline Item Detail	O	1
230	SAC	Service, Promotion, Allowance, or Charge Information	O	25
237	TXI	Tax Information	O	10

LOOP ID - N1				200
240	N1	Name	O	1
250	N2	Additional Name Information	O	2
260	N3	Address Information	O	2
270	N4	Geographic Location	O	1
280	REF	Reference Identification	O	12

Summary:

Pos	Id	Segment Name	Req	Max Use	Repeat	Notes
010	TDS	Total Monetary Value Summary	M	1		Must Use
020	TXI	Tax Information	O	10		
		LOOP ID – SAC				
040	SAC	Service, Promotion, Allowance, or Charge Information	O	1		
050	TXI	Tax Information	O	10		
070	CTT	Transaction Totals	O	I		N3/070
080	SE	Transaction Set Trailer	M	1		Must Use

Pos	Id	Segment Name	Req*	Max Use	Repeat	Notes
	GE	Functional Group Trailer	M	1		Must Use
	IEA	Interchange Control Trailer	M	1		Must Use

Notes:

3/070 Number of line items (CTT01) is the accumulation of the number of IT1 segments. If used, hash total (CTT02) is the sum of the value of quantities invoiced (IT102) for each IT1 segment.

*M= Must Use

0 = Optional

ISA Interchange Control Header

To indicate the start of a transaction set and to assign a control number.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
ISA01	I01	Authorization Information Qualifier	M	ID	2/2
ISA02	I02	Authorization Information	M	AN	10/10
ISA03	I03	Security Information Qualifier	M	ID	2/2
ISA04	I04	Security Information	M	AN	10/10
ISA05	I05	Interchange ID Qualifier	M	ID	2/2
ISA06	I06	Interchange Sender ID	M	AN	15/15
		User: Should match the code sent in GS02.			
ISA07	I05	Interchange ID Qualifier	M	ID	2/2
		User: ZZ			
ISA08	I07	Interchange Receiver ID	M	AN	15/15
ISA09	I08	Interchange Date	M	DT	6/6
ISA10	I09	Interchange Time	M	TM	4/4
ISA11	I10	Interchange Control Standards Identifier	M	ID	1/1
ISA12	I11	Interchange Control Version Number	M	ID	5/5
ISA13	I12	Interchange Control Number	M	N0	9/9
ISA14	I13	Acknowledgment Requested	M	ID	1/1
ISA15	I14	Usage Indicator	M	ID	1/1
ISA16	I15	Component Element Separator	M	AN	1/1

Note:

A unique and sequential interchange number should be used on every envelope that is transmitted. This approach will allow the receiver to audit the interchange for any duplicate or missing transmissions.

GS Functional Group Header

To indicate the start of a transaction set and to assign a control number

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
GS01	479	**Functional Identifier Code**	M	ID	2/2
GS02	142	**Application Sender's Code**	M	AN	15/15
GS03	124	**Application Receiver's Code**		AN	15/15
GS04	373	**Date**	M	DT	8/8
GS05	337	**Time**	M	TM	4/8
GS06	28	**Group Control Number**	M	N0	1/9
		User: This is the unique id for each file.			
GS07	455	**Responsible Agency Code**	M	ID	1/2
GS08	480	**Version / Release / Industry Identifier Code**	M	AN	1/12
		Example: 004010			

ST	**Transaction Set Header**	**Pos: 010 Max Use: 1** **Heading - Mandatory** **Loop: N/A Elements: 2**

To indicate the start of a transaction set and to assign a control number

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
ST01	**143**	**Transaction Set Identifier Code** **Description:** Code uniquely identifying a Transaction Set **Code** **Name** 810 Invoice	**M**	**ID**	**3/3**
ST02	**329**	**Transaction Set Control Number** **Description:** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	**M**	**AN**	**4/9**

Semantics:

1. The transaction set identifier (ST01) used by the translation routines of the interchange partners to select the appropriate transaction set definition
(e.g., 810 selects the Invoice Transaction Set).

BIG Beginning Segment for Invoice

Pos: 020	Max Use: 1
Heading - Mandatory	
Loop: N/A	Elements: 5

To indicate the beginning of an invoice transaction set and transmit identifying numbers and dates

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
BIG01	**373**	**Date** **Description:** Date expressed as CCYYMMDD Invoice Date. This is the date that the transaction was created by the sender's application system.	**M**	**DT**	**8/8**
BIG02	**76**	**Invoice Number** **Description:** Identifying number assigned by issuer **User:** Invoice Number is Account number plus date.	**M**	**AN**	**1/22**
BIG04	**324**	**Purchase Order Number** **Description:** Identifying number for Purchase Order assigned by the orderer/purchaser User Value: "Utility"	**O**	**AN**	**1/22**
BIG07 RECOMMENDED	**640**	**Transaction Type Code** **Description:** Code specifying the type of transaction **Code** **Name** BD Balance Due CI Consolidated Invoice FB Final Bill ME Memorandum PR Product (or Service) 07 Budget	**O**	**ID**	**2/2**
BIG08 RECOMMENDED	**353**	**Transaction Set Purpose Code** **Description:** Code identifying purpose of transaction set **Code** **Name** 00 Original 01 Cancellation 05 Replace 07 Duplicate CO Corrected	**O**	**ID**	**2/2**

Semantics:

1. BIG01 is the invoice issue date.
2. BIG03 is the date assigned by the purchaser to purchase order.

Comments:

1. BIG07 is used only to further define the type of invoice when needed.

CUR Currency

NTE Note/Special Instruction

Pos: 030	**Max Use: 1**
Heading - Optional	
Loop: N/A	**Elements: 2**
Max Use: 100	
Heading - Optional	
Loop: N/A	**Elements: 2**

To specify the current (dollars, pounds, francs, etc.) used in a transaction.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
CUR01	98	**Entity Identifier Code** **Description:** Code identifying an organization entity, a physical location, property or an individual 85 Billing Provider	M	ID	2/3
CUR02	100	**Currency Code** **Description:** Code (Standard ISO) for country in whose currency the charges are specified	M	ID	3/3

To transmit information in a free-form format, if necessary, for comment or special instruction

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
NTE01	363	**Note Reference Code** **Description:** Code identifying the functional area or purpose for which the note applies **Code** / **Name** ADD Additional Information OTH Other instructions Regulatory-Required messages or notices	O	ID	3/3
NTE02	352	**Description** **Description:** A free-form description to clarify the related data elements and their content If 810 includes message regarding potential service termination, it should be included in this segment. Internal to Cass – Displayed on Image	M	AN	1/80

Comments:

1. The NTE segment permits free-form information/data, which, under ANSI X12 standard implementations, is not machine processable. The use of the NTE segment should therefore, be avoided, if at all possible, in an automated environment.

REF Reference Identification

Pos: 050 Max Use: 12
Heading - Optional
Loop: N/A Elements: 3

To specify identifying information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
REF01	**128**	**Reference Identification Qualifier** **Description:** Code qualifying the Reference Identification **Code** **Name** 11 Account Number User: Universal Service ID 12 Billing Account **Description:** Account number under which billing is rendered 14 Master Account number used when BIG07=CI to represent individual billing accounts which have been consolidated 45 Old Account Number **Description:** Identifies accounts being changed BLT Billing Type PC Production Code TN Transaction Reference Number TJ Federal Taxpayer's Identification Number Q5 Property Control Number Service Delivery ID (e.g., ESIID) ZZ Mutually Defined	**M**	**ID**	**2/3**
REF02	**127**	**Reference Identification** **Description:** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier **Code** **Name** LDC The Utility bills the customer ESP The ESP bills the customer DUAL Each party bills the customer	**X**	**AN**	**1/30**
REF03	**352**	**Description** A free form description to clarify the related data elements and their content	**X**	**AN**	**1/80**

Syntax:

R0203 -- At least one of REF02 or REF03 is required.

N1 Name

Pos: 070	**Max Use Use: 1**
Heading - Optional	
Loop: N1	**Elements: 4**

To identify a party by type of organization, name, and code

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N101	**98**	**Entity Identifier Code** **Description:** Code identifying an organizational entity, a physical location, property or an individual **Code** **Name** 85 Billing Agent 8R Consumer Service Provider (CSP) End Use Customer 8S Consumer Service Provider (CSP) Utility AG Agent LD Local Distributor BT Bill-to-Party (Used when directly billing the end use customer) RE Party to receive commercial invoice remittance SJ Service Provider – Energy Service Provider		**ID**	**2/3**
N102	**93**	**Name (Client)** **Description:** Free-form name	**X**	**AN**	**1/60**
N103	**66**	**Identification Code Qualifier** **Description:** Code designating the system/method of code structure used for Identification Code (67) **Code** **Name** 1 D-U-N-S Number, Dun & Bradstreet 9 D-U-N-S+4, D-U-N-S Number with Four Character Suffix 91 Assigned by Seller or Seller's Agent 92 Assigned by Buyer or Buyer's Agent **User:** Partners Store number. Used with qualifier BT	**X**	**ID**	**1/2**
N104	**67**	**Identification Code** **Description:** Code identifying a party or other code	**X**	**AN**	**2/80**

Syntax:

R0203 -- At least one of N102 or N103 is required.
P0304 -- If either N103 or N104 are present, then the others are required.

N2 Additional Name Information

Pos: 080	Max Use: 2
Heading - Optional	
Loop: N1	Elements: 2

To specify additional names or those longer than 35 characters in length

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N201	**93**	**Name** **Description:** Free-form name	**M**	**AN**	**1/60**
NOTE		**User**			
N202	**93**	**Name** **Description:** Free-form name	**O**	**AN**	**1/60**

N3 Address Information

Pos: 090	Max Use: 2
Heading - Optional	
Loop: N1	Elements: 2

To specify the location of the named party

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N301	**166**	**Address Information** **Description:** Address information	**M**	**AN**	**1/55**
N302	**166**	**Address Information** **Description:** Address information	**O**	**AN**	**1/55**

N4 Geographic Location

Pos: 100	Max Use: 1
Heading - Optional	
Loop: N1	Elements: 4

To specify the geographic place of the named party

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N401	19	**City Name** **Description:** Free-form text for city name	O	AN	2/30
N402	156	**State or Province Code** **Description:** Code (Standard State/Province) as defined by appropriate government agency	O	ID	2/2
N403	116	**Postal Code** **Description:** Code defining international postal zone code excluding punctuation and blanks (zip code for United States)	O	ID	3/15
N404	26	**Country Code**	O	ID	2/3

Syntax:

1. N406 C0605 -- If N406 is present, then N405 is required

Comments:

1. A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2. N402 is required only if city name (N401) is in the U.S. or Canada.

REF Reference Identification

Pos: 110	Max Use: 12
Heading - Optional	
Loop: N1	Elements: 3

To specify identifying information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
REF01	**128**	**Reference Identification Qualifier** Use any valid Data Element 128 code qualifiers as mutually agreed between trading partners.	**M**	**ID**	**2/3**
REF02	**127**	**Reference Identification** **Description:** Use information as defined for particular Transaction Set or as specified by the Reference Identification Qualifier	**X**	**AN**	**1/30**
REF03	**352**	**Description** A free form description to clarify the related data elements and their content	**X**	**AN**	**1/80**

Syntax:

R0203 -- At least one of REF02 or REF03 is required.

PER Administrative Communications Contact

Pos: 120 Max Use: 3
Heading - Optional
Loop: N1 Elements: 8

To identify a person or office to whom administrative communications should be directed

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
PER01	**366**	**Contact Function Code** **Description:** Code identifying the major duty or responsibility of the person or group name. **Code** / **Name** CR Customer Relations IC Information Contact	**M**	**ID**	**2/2**
PER02	**93**	**Name** **Description:** Free-form name	**O**	**AN**	**1/60**
PER03	**365**	**Communication Number Qualifier** **Description:** Code identifying the type of communication number **Code** / **Name** TE Telephone EM Electronic Mail FX Facsimile	**X**	**ID**	**2/2**
PER04	**364**	**Communication Number** **Description:** Complete communications number including country or area code when applicable	**X**	**AN**	**1/80**
PER05	**365**	**Communication Number Qualifier** **Description:** Code identifying the type of communication number **Code** / **Name** TE Telephone EM Electronic Mail FX Facsimile	**X**	**ID**	**2/2**
PER06	**364**	**Communication Number** **Description:** Complete communications number including country or area code when applicable	**X**	**AN**	**1/80**
PER07	**365**	**Communication Number Qualifier** **Description:** Code identifying the type of communication number **Code** / **Name** TE Telephone EM Electronic Mail FX Facsimile	**X**	**ID**	**2/2**
PER08	**364**	**Communication Number** **Description:** Complete communications number including country or area code when applicable	**X**	**AN**	**1/80**

Syntax:

P0304 -- If either PER03 or PER04 are present, then the others are required.
P0506 -- If either PER05 or PER06 are present, then the others are required.
P0708 -- If either PER07 or PER08 are present, then the others are required.

ITD Terms of Sale/Deferred Terms of Sale

Pos: 130	Max Use: >1
Heading - Optional	
Loop: N/A	Elements: 4

To specify terms of sale

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
ITD03	**338**	**Terms Discount Percent** **Description:** Expressed as a percent. Available if invoice is paid on or before the terms discount due date	**O**	**R**	**1/6**
ITD05	**351**	**Terms Discount Days Due** **Description:** # of days in the terms discount period by which payment is due if terms discount is earned	**X**	**NO**	**1/3**
ITD06	**446**	**Terms Net Due Date** **Description:** Date when total invoice amount becomes due expressed in format CCYYMMDD	**O**	**DT**	**8/8**
ITD07	**386**	**Terms Net Days** **Description:** Number of days until total invoice amount is due	**O**	**NO**	**1/3**

Syntax:

1. ITD03 L03040513 -- If ITD03 is present, then at least one of ITD04, ITD05 or ITD13 is required.
2. ITD08 L08040513 -- If ITD08 is present, then at least one of ITD04, ITD05 or ITD13 is required.
3. ITD09 L091011 -- If ITD09 is present, then at least one of ITD10 or ITD11 is required.

Semantics:

1. ITD15 is the percentage applied to a base amount used to determine a late payment charge.

Comments:

1. If the code in ITD01 is "04", then ITD07 or ITD09 is required and either ITD10 or ITD11 is required; if the code in ITD01 is "05", then ITD06 or ITD07 is required.

BAL Balance Detail

Pos: 212	Max Use: >1
Heading - Optional	
Loop: N/A	Elements: 3

To identify the specific monetary balances associated with a particular account.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
BAL01	951	**Balance Type Code** **Description:** Code indicating the type of balance **Code** / **Name** M — Current Month P — Previous Month **Description:** Balance of previous period charges prior to applying payments and adjustments for the previous period billing Y — Year to Date	M	ID	1/2
BAL02	522	**Amount Qualifier Code** **Description:** Code to qualify amount **Code** / **Name** J9 — Beginning Balance PB — Billed Amount **Description:** Total amount due on the period bill TP — Total payment amount YB — Actual Unpaid Principal Balance	M	ID	1/3
BAL03	782	**Monetary Amount** **Description:** Monetary amount	M	R	1/18

Comments: It is requested that any unpaid prior balance be included MJ9.

IT1 Baseline Item Data (Invoice)

Pos: 010	Max Use: 1
Detail - Optional	
Loop: IT1	Elements: 13

To specify the basic and most frequently used line item data for the invoice and related transactions

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
IT101	350	**Assigned Identification** **Description:** Alphanumeric characters assigned for differentiation within a transaction set **User:** Line item counter	O	AN	1/20
IT102	358	**Quantity Invoiced** **User:** When no MEA provided for the Unit of Measure in IT103, Cass is using IT102 as current Usage & IT103 as Unit of Measure	X	N2	1/10
IT103	355	**Unit or Basis for Measurement Code** **User:** When no MEA provided for the Unit of Measure in IT103, Cass is using IT102 as current Usage & IT103 as Unit of Measure See 355 list of valid codes in MEA segment	X	ID	2/2
IT104	212	**Unit Price**	X	N5	1/17

Ref	Id	Element Name	Req	Type	Min/Max
		Description: Charges associated with current readings			
IT105	**639**	**Basis of Unit Price Code** **Description:** Cost per unit associated with current readings	**O**	**ID**	**2/2**
IT106	**235**	**Product/Service ID Qualifier** **Description:** Code identifying the type/source of the descriptive number used in Product/Service ID (234) **Code** **Name** SV Service Rendered	**X**	**ID**	**2/2**
IT107	**234**	**Product/Service ID** **Description:** Identifying number for a product or service **User:** 'Electric' 'Gas"	**X**	**AN**	**1/48**
IT108	**235**	**Product/Service ID Qualifier** **Description:** Code identifying the type/source of the descriptive number used in Product/Service ID (234) **Code** **Name** C3 Classification	**X**	**ID**	**2/2**
IT109	**234**	**Product/Service ID** **Description:** Identifying number for a product or service **User:** Examples: ACCOUNT RATE METER UNMET (unmetered services)	**X**	**AN**	**1/48**
IT110	**235**	**Product/Service ID Qualifier** **Description:** Code identifying the type/source of the descriptive number used in Product/Service ID (234) **Code** **Name** MB Measurement Type Code	**X**	**ID**	**2/2**
IT111	**234**	**Product/Service ID** **Description:** Identifying number for a product or service Examples: NT Non-TOU Measurement TOU Time of Use Measurement	**X**	**AN**	**1/48**
IT112	**235**	**Production/Service ID Qualifier** **Description:** IT112 and IT113 are used to indicate that consumption will be provided but the actual meter readings will not be provided **Code** **Name** EQ Equipment Type	**X**	**ID**	**2/2**
IT113	**234**	**Production/Service ID** NR = No reads will be presented	**X**	**AN**	**1/48**

An ACOUNT loop usually includes BAL TXI segments, charges that apply to the entire account. Separate METER loops should include meter number, rate, measurement data, dates and charges. If charges cannot be reported by meter, they should be noted in a RATE loop.

Syntax:

P020304 -- If IT102, IT103 or IT104 are present, then the others are required.
P0607 -- If either IT106 or IT107 are present, then the others are required.
P0809 -- If either IT108 or IT109 are present, then the others are required.
P1011 -- If either IT110 or IT111 are present, then the others are required.
P1213 -- If either IT112 or IT113 are present, then the others are required.
P1415 -- If either IT114 or IT115 are present, then the others are required.
P1617 -- If either IT116 or IT117 are present, then the others are required.
P1819 -- If either IT118 or IT119 are present, then the others are required.
P2021 -- If either IT120 or IT121 are present, then the others are required.
P2223 -- If either IT122 or IT123 are present, then the others are required.
P2425 -- If either IT124 or IT125 are present, then the others are required.

Semantics:

1. IT101 is the purchase order line item identification.

Comments:

1. Element 235/234 combinations should be interpreted to include products and/or services. See the Data Dictionary for a complete list of IDs.
2. IT106 through IT125 provide for ten different product/service IDs for each item. For example: Case, Color, Drawing No., U.P.C. No., ISBN No., Model No., or SKU.

Notes:

The typical usage of the IT1 entails including all usage and charges attributed to one meter; in this case the IT1 loop is qualified with "**METER**" in the IT108/109 pair. In the case where charges are not attributed to a specific meter, for example taxes, balance due, late payment charge, the IT1 loop is qualified with "**ACCOUNT**". An 810 invoice may contain both "METER" and "ACCOUNT" IT1 loops.

A Meter IT1 loop can be mapped differently depending on whether time of use (TOU) or straight meter measurement is employed. With a TOU measurement, multiple MEA segments will convey the usage, with the MEA07 in each MEA providing the TOU classification. The IT1 loop for a non-TOU or straight meter measurement will contain a single MEA segment with no MEA07.

User: Quantity & Unit of Measure will only be used for current readings when no "MEA" record for the same Unit of Measure is provided.

QTY

QUANTITY	Pos: 050 Max Use: 25 Detail - Optional Loop: IT1 Elements: 8

To specify Billing Status information contained on Bill

Element Summary:

Ref	Id	Element Name	
QTY01	**673**	**Qty Qualifier** **Description:** Code specifying the type of qty **Code** **Name** UA Units Completed	
QTY03	**355**	**Unit of Measure** DA Days PR Percentage KH Kilowatthours MM CCF Units	
QTY04	**1018**	**Exponent** Qty of above units	
QTY06	**355**	**Unit of Measure** **Description:** Will put DT if next value has Date **Code** **Name** DT Date Qualifer	
QTY07	**1018**	**Exponent** Date	
QTY09	**350**	**Unit of Measure** **Code** **Name** TM Time Qualifier	
QTY10	**1018**	**Exponent** Time	
QTY18	**61**	**Free Form Description** Description	**O AN 1/60**

Syntax:

1. QTY04 C0803 – If QTY04 is present, then QTY03 is required
2. QTY07 C0806 – If QTY07 is present, then QTY06 is required
3. QTY10 C0809 – If QTY10 is present, then QTY09 is required

PAM Period Amount

Pos: 214	Max Use: >1
Heading - Optional	
Loop: N/A	Elements: 6

To indicate a quantity and/or amount for an identified period

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
PAM01	**673**	**Quantity Qualifier**	**X**	**ID**	**2/2**
		Code / **Name** 99 Quantity of Units Used CP Current Period Imbalance KA Estimated			
PAM02	**380**	**Quantity** Numeric Value of Quantity	**X**	**R**	**1/15**
PAM03	**355**	**Unit or Basis for Measurement Code**	**M**	**ID**	**2/2**
PAM06	**344**	**Unit of Time Period or Interval**	**X**	**ID**	**2/2**
		Code / **Name** AD Average Daily AM Average Monthly AN Annual A Average Year CC Cycles DY Day HR Hours MO Month PM Preceding 12 Months YD Year to Date			
PAM07	**374**	**Date/Time Qualifier** **Description:** Code specifying type of date or time, or both date and time **Code** / **Name** 194 Period End Date 221 Period Begin MRR Meter Reading	**X**	**ID**	**3/3**
PAM08	**373**	**Date** **Description:** CCYYMMDD	**X**	**DT**	**8/8**

TXI	**Tax Information**	**Pos: 040 Max Use: 10** **Detail - Optional** **Loop: IT1 Elements: 7**

To specify tax information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
TXI01	**963**	**Tax Type Code** **Description:** Code specifying the type of tax **Code** **Name** AT Assessment CA City Tax CS City Sales Tax CT County Tax FD Federal Tax FR Franchise Tax **Description:** Tax imposed by municipality for the right to provide service GR Gross Receipts Tax LO Local Tax (Not Sales Tax) **Description:** Service tax imposed on a local level LS State and Local Tax MP Municipal Tax SL State and Local Tax ST State Sales Tax	**M**	**ID**	**2/2**
TXI02	**782**	**Monetary Amount** **Description:** Monetary amount	**X**	**R**	**1/18**
TXI03	**954**	**Percent** This is the tax rate that is applied to the bill. Present as a decimal (6% should be presented as .06)	**X**	**R**	**1/10**
TX106	**441**	**Tax Exempt Code** 1 Yes (Tax Exempt) 2 No (Not Tax Exempt) 3	**X**	**ID**	**1/1**
TXI07	**662**	**Relationship Code** **Description:** Code indicating the relationship between entities **Code** **Name** A Add O Information Only **Description:** Charges that relate to but may not be included in or added to the unit price of the SLN. (i.e., compute WATS calculation based upon usage amounts)	**O**	**ID**	**1/1**
TX108	**828**	**Dollar Basis for Percentage**	**O**	**R**	**1/9**
TXI10	**350**	**Assigned Tax Identification**	**O**	**AN**	**1/20**

Syntax:

1. TXI02 R020306 -- At least one of TXI02, TXI03 or TXI06 is required.

2. TXI04 P0405 -- If either TXI04 or TXI05 are present, then the others are required.
3. TXI08 C0803 -- If TXI08 is present, then TXI03 is required

Semantics:

1. TXI02 is the monetary amount of the tax.
2. TXI03 is the tax percent expressed as a decimal.
3. TXI07 is a code indicating the relationship of the price or amount to the associated segment.

Notes:

Taxes that apply to the entire IT1 segment are shown in detail position 040. Taxes that do not apply to the entire IT1 segment, but do apply to a specific line charge are shown in TXI position 237, directly following the SAC charge in position 230. Taxes that apply to the entire invoice are considered Account level taxes and are shown in summary position 020. If an IT1 Account loop is used, account level taxes may appear within that loop.

MEA Measurements

Pos: 059	Max Use: 40
Detail - Optional	
Loop: IT1	Elements: 7

To specify physical measurements or counts, including dimensions, tolerances, variances, and weights

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
MEA01	**737**	**Measurement Reference ID Code**	**O**	**ID**	**2/2**

Description: Code identifying the broad category to which a measurement applies

Code	Name
AA	Meter reading-beginning actual/ending actual
AE	Meter reading-beginning actual/ending estimated
AF	Actual Total
AN	Period Actual
AR	Annual Result (Informational)
AV	Average Reading (Informational)
BC	Billed Actual
BD	Billed Demand (Estimated)
BN	Billed Minimum
BO	Billed (Actual)
BR	Billed History (Informational)
DT	Power Factor (Informational)
EA	Meter reading-beginning estimated/ending actual
EE	Meter reading-beginning estimated/ending estimated
IR	Reading Detail (Informational)
TI	Time
TU	Total Usage (Informational)
ZA	Power Factor (Informational)

User: If code sent on 737 list indicates informational, this entire reading becomes an information reading ONLY.

Ref	Id	Element Name	Req	Type	Min/Max
MEA02	**738**	**Measurement Qualifier**	**O**	**ID**	**1/3**

Description: Code identifying a specific product or process characteristic to which a measurement applies

Code	Name
CJ	Cycle Time
MU	Multiplier
MX	Maximum
PU	Pressure Base
RUD	Usage Deviation (applies to Kilowatt Hours, Kilowatt Demand and Reactive Demand)
VO	Voltage
Z	Power Factor
ZD	Load Factor

Ref	Id	Element Name	Req	Type	Min/Max
MEA03	**739**	**Measurement Value**	**X**	**R**	**1/20**

Description: The value of the measurement

User: Meter Multiplier
When MEA02=MU, then MEA03=Meter Multiplier
Usage will be calculated as follows:
Usage = (MEA06-MEAS05)*MEA03

When MEA02 not = MU, then MEA03 = Usage Quantity

Ref	Id	Element Name	Req	Type	Min/Max
MEA04	**C001**	**Composite Unit of Measure**	**X**	**Comp**	

Ref	Id	Element Name	Req	Type	Min/Max
		Description: To identify a composite unit of measure(See Figures Appendix for examples of use)			
	355	**Unit or Basis for Measurement Code**	M	ID	2/2
		Description: Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken			

Code	Name
CF	Cubic Feet
DA	Days
EA	Each
HH	Hundred Cubic Feet
K1	Kilowatt Demand **Description:** Represents potential power load measured at predetermined intervals
K2	Kilovolt Amperes Reactive Demand **Description:** Reactive power that must be supplied for specific types of customer's equipment; billable when kilowatt demand usage meets or exceeds a defined parameter
K3	Kilovolt Amperes Reactive Hour **Description:** Represents actual electricity equivalent to kilowatt hours; billable when usage meets or exceeds defined parameters
K4	Kilovolt Amperes
K5	Kilovolt Amperes Reactive
K7	Kilowatt
KH	Kilowatt Hour
MO	Months
TD	Terms
TZ	Thousand Cubic Feet
UN	Unit
W	Week
YR	Years

User: If code sent on 355 indicates informational, this entire reading becomes an information reading ONLY.

Ref	Id	Element Name	Req	Type	Min/Max
MEA05	740	**Range Minimum**	X	R	1/20
		Description: The value specifying the minimum of the measurement range			
		User: Beginning reading - Field only used for KH meters			
MEA06	741	**Range Maximum**	X	R	1/20
		Description: The value specifying the maximum of the measurement range			
		User: Ending Reading for KH meters and demand reading for Demand meters Also used to hold date of history data			

MEA07	**935**	**Measurement Significance Code** **Description:** Code used to benchmark, qualify or further define a measurement value	**O**	**ID**	**2/2**

Code	Name
22	Actual
41	Off Peak
42	On Peak
43	Intermediate
44	Average
45	Summer On Peak
49	Winter On Peak
50	Winter Mid Peak
51	Total
52	Winter Super Off Peak
53	Summer Day
54	Summer Night
55	Winter Day
56	Winter Night
57	Summer
58	Winter
59	Day
60	Night
63	Peak-2
64	Peak-3
65	Peak-4
66	Shoulder
67	Non Time Related Demand
71	Summer Super On Peak
72	Summer Super Off Peak
73	Summer Off Peak
74	Summer Mid Peak
75	Winter Off Peak

Syntax:

R03050608 -- At least one of MEA03, MEA05, MEA06 or MEA08 is required.
C0504 -- If MEA05 is present, then MEA04 is required
C0604 -- If MEA06 is present, then MEA04 is required
L07030506 -- If MEA07 is present, then at least one of MEA03, MEA05 or MEA06 is required.
E0803 -- Only one of MEA08 or MEA03 may be present.

Semantics:

1. MEA04 defines the unit of measure for MEA03, MEA05, and MEA06.

Comments:

1. When citing dimensional tolerances, any measurement requiring a sign (+ or -), or any measurement where a positive (+) value cannot be assumed, use MEA05 as the negative (-) value and MEA06 as the positive (+) value.
2. The MEA segment is used to convey consumption readings for one metering period. Transaction Set 867 should be used if interval meter readings are required.

CASS internal usage:

When MEA01 = AA and MEA04 = K1, report MEA04 as K7
When MEA01 = AF and MEA04 = K1, report MEA04 as K7.
When MEA01 = BC and MEA04 = K1, report MEA04 as K7.
When MEA01 = BD and MEA04 = K7, report MEA04 as K1.
When MEA01 = BO and MEA04 = K7, report MEA04 as K1.

REF Reference Identification

Pos: 120	Max Use: >1
Detail - Optional	
Loop: IT1	Elements: 3

To specify identifying information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
REF01	128	**Reference Identification Qualifier** **Description:** Code qualifying the Reference Identification **Code** **Name** 45 Old Account Number 46 Old Meter Number LU Location Number MG Meter Number NH Rate Card Number Q5 Location Number RB Rate code number	M	ID	2/3
REF02	127	**Reference Identification** **Description:** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier	X	AN	1/30
REF03	352	**Description** Free form description to clarify the related data elements and their content.	X	AN	1/80

Syntax:

1. REF02 R0203 -- At least one of REF02 or REF03 is required.

Semantics:

1. REF04 contains data relating to the value cited in REF02.

DTM Date/Time Reference

Pos: 150	Max Use: 10
Detail - Optional	
Loop: IT1	Elements: 4

To specify pertinent dates and times

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
DTM01	**374**	**Date/Time Qualifier** **Description:** Code specifying type of date or time, or both date and time **Code** / **Name** 150 Service Period Start 151 Service Period End 186 Invoice Period Start 187 Invoice Period End	**M**	**ID**	**3/3**
DTM02	**373**	**Date** **Description:** CCYYMMDD format	**X**	**DT**	**8/8**
DTM05	**1250**	**Date Time Period Format Qualifier** **Description:** Code indicating the date format, time format, or date and time format **Code** / **Name** D8 Date Expressed in Format CCYYMMDD	**X**	**ID**	**2/3**
DTM06	**1251**	**Date Time Period** **Description:** Expression of a date, a time, or range of dates, times or dates and times	**X**	**AN**	**1/35**

Syntax:

R020305 -- At least one of DTM02, DTM03 or DTM05 is required.
C0403 -- If DTM04 is present, then DTM03 is required
P0506 -- If either DTM05 or DTM06 are present, then the others are required.

SLN Subline Items Detail

Pos: 200	Max Use: 1
Detail - Optional	
Loop: SLN	Elements: 2

To specify product subline detail item data.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
SLN01	**350**	**Assigned Identification**	**M**	**AN**	**1/20**
SLN03	**662**	**Relationship Code**	**M**	**ID**	**1/1**

Code	Name
A	Add

Semantic:
SLN01 is the identifying number for the subline item.
SLN03 is the configuration code indicating the relationship of the subline item to the baseline item.

Comments:

The IT1/SLN segment is used to overcome the limitation on the number of IT1/SAC loops (maximum of 25). Each SLN loop will contain only SAC and TXI. Multiple charges/allowances require multiple SLN loops.

SAC Service, Promotion, Allowance, or Charge Information

Pos: 230 **Max Use: 25**
Detail - Optional
Loop: SLN **Elements: 9**

To request or identify a service, promotion, allowance, or charge; to specify the amount or percentage for the service, promotion, allowance, or charge

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
SAC01	**248**	**Allowance or Charge Indicator** **Description:** Code which indicates an allowance or charge for the service specified **Code** **Name** A Allowance C Charge N No Allowance or Charge	**M**	**ID**	**1/1**
SAC03	**559**	**Agency Qualifier Code** **Description:** Code identifying the agency assigning the code values **Code** **Name** EU Electric Utilities GU Gas Utilities	**X**	**ID**	**2/2**
SAC04	**1301**	**Agency Service, Promotion, Allowance, or Charge Code** **Description:** Agency maintained code identifying the service, promotion, allowance, or charge **User: See UIG website for valid codes (*http://www.uig.org*)** **User: We would prefer that "Previous Paid Balances" not be sent in the SAC segments. Reporting in BAL segment would be more applicable. However, if reporting payments must occur in SAC, they should be sent with one of the following codes:** **PAY, PAY001, PAY002, PAY003, PAY004** **When reporting "Previous Unpaid Balances" (including credit balances), they MUST be sent with one of the following codes and MUST be part of the total amount due in the TDS01:** **PBA, PRB, PRB000, PRB001, PRB002, PRB003** **When reporting "Late Fees", they MUST be sent with of the following codes and MUST be part of the total amount due in TDS01:** **LPC, LPC000, LPC001**	**X**	**AN**	**1/10**
SAC05	**610**	**Amount**	**M**	**N2**	**1/15**

Ref	Id	Element Name	Req	Type	Min/Max
		Description: Monetary amount. The amount may be negative or positive. If negative, the minus sign, "-" must be transmitted.			
SAC07	**332**	**Percent** **Description:** Used to express the percentage of the total load that is being supplied. 75% should be expressed as 75 or 67.67% should expressed as 67.67.	**X**	**R**	**1/6**
SAC08	**118**	**Rate**	**O**	**R**	**1/9**
SAC09	**355**	**Unit or Basis for Measurement Code** (See MEA04 for acceptable values)	**X**	**ID**	**2/2**
SAC10	**380**	**Quantity**	**X**	**R**	**1/15**
SAC15	**352**	**Description** A free-form description to clarify the related data elements and their content	**X**	**AN**	**1/80**

Syntax:

R0203 -- At least one of SAC02 or SAC03 is required.
P0304 -- If either SAC03 or SAC04 are present, then the others are required.
P0607 -- If either SAC06 or SAC07 are present, then the others are required.
P0910 -- If either SAC09 or SAC10 are present, then the others are required.
C1110 -- If SAC11 is present, then SAC10 is required
L130204 -- If SAC13 is present, then at least one of SAC02 or SAC04 is required.
C1413 -- If SAC14 is present, then SAC13 is required
C1615 -- If SAC16 is present, then SAC15 is required

Semantics:

1. If SAC01 is "A" or "C", then at least one of SAC05, SAC07, or SAC08 is required.
2. SAC05 is the total amount for the service, promotion, allowance, or charge.
3. If SAC05 is present with SAC07 or SAC08, then SAC05 takes precedence.
4. SAC08 is the allowance or charge rate per unit.
5. SAC10 and SAC11 are the quantity basis when the allowance or charge quantity is different from the purchase order or invoice quantity.
6. SAC10 and SAC11 used together indicate a quantity range, which could be a dollar amount, that is applicable to service, promotion, allowance, or charge.
7. SAC13 is used in conjunction with SAC02 or SAC04 to provide a specific reference number as identified by the code used.
8. SAC14 is used in conjunction with SAC13 to identify an option when there is more than one option of the promotion.
9. SAC16 is used to identify the language being used in SAC15.

Notes:

Each SLN loop will contain only one SAC and TXI. Multiple charges/allowances require multiple SLN loops.

Previous editions of the guideline stated that the amount shows in the SAC05 will always be positive and that the code used in SAC01 would indicate whether to add or subtract the SAC05 amount to or from the TDS. It has been determined that this statement is incorrect; future versions of the UIG guidelines will no longer contain the above statement.

Comments:

1. SAC04 may be used to uniquely identify the service, promotion, allowance, or charge. In addition, it may be used in conjunction to further the code in SAC02.
2. In some business applications, it is necessary to advise the trading partner of the actual dollar amount that a particular allowance, charge, or promotion was based on to reduce ambiguity. This amount is commonly referred to as "Dollar Basis Amount". It is represented in the SAC segment in SAC10 using the qualifier "DO" - Dollars in SAC09.

TXI Tax Information

Pos: 237	**Max Use: 10**
Detail - Optional	
Loop: SLN	**Elements: 7**

To specify tax information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
TXI01	**963**	**Tax Type Code** **Description:** Code specifying the type of tax **Code** / **Name** AT Assessment CA City Tax CS City Sales Tax CT County Tax FD Federal Tax FR Franchise Tax **Description:** Tax imposed by municipality for the right to provide service GR Gross Receipts Tax LO Local Tax (Not Sales Tax) **Description:** Service tax imposed on a local level LS State and Local Tax MP Municipal Tax SL State and Local Tax ST State Sales Tax	**M**	**ID**	**2/2**
TXI02	**782**	**Monetary Amount** **Description:** Monetary amount	**X**	**R**	**1/18**
TXI03	**954**	**Percent** This is the tax rate that is applied to the bill. Present as a decimal (6% should be presented as .06)	**X**	**R**	**1/10**
TX106	**441**	**Tax Exempt Code** 4 Yes (Tax Exempt) 5 No (Not Tax Exempt) 6	**X**	**ID**	**1/1**
TXI07	**662**	**Relationship Code** **Description:** Code indicating the relationship between entities **Code** / **Name** A Add O Information Only **Description:** Charges that relate to but may not be included in or added to the unit price of the SLN. (i.e., compute WATS calculation based upon usage amounts)	**O**	**ID**	**1/1**
TX108	**828**	**Dollar Basis for Percentage**	**O**	**R**	**1/9**
TXI10	**350**	**Assigned Tax Identification**	**O**	**AN**	**1/20**

Syntax:

1. TXI02 R020306 -- At least one of TXI02, TXI03 or TXI06 is required.
2. TXI04 P0405 -- If either TXI04 or TXI05 are present, then the others are required.
3. TXI08 C0803 -- If TXI08 is present, then TXI03 is required

Semantics:

1. TXI02 is the monetary amount of the tax.
2. TXI03 is the tax percent expressed as a decimal.
3. TXI07 is a code indicating the relationship of the price or amount to the associated segment.

Notes:

Taxes that apply to the entire IT1 segment are shown in detail position 040. Taxes that do not apply to the entire IT1 segment, but do apply to a specific line charge are shown in TXI position 237, directly following the SAC charge in position 230. Taxes that apply to the entire invoice are considered Account level taxes and are shown in summary position 020. If an IT1 Account loop is used, account level taxes may appear within that loop.

N1 Name

Pos: 240	Max Use: 1
Detail - Optional	
Loop: N1	Elements: 4

To identify a party by type of organization, name, and code

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N101	**98**	**Entity Identifier Code** **Description:** Code identifying an organizational entity, a physical location, property or an individual **User:** Metering Location - Account loop Code: MQ — Name: Metering Location	**M**	**ID**	**2/3**
N102	**93**	**Name** **Description:** Free-form name	**X**	**AN**	**1/60**
N103	**66**	**Identification Code Qualifier**	**X**	**ID**	**1/2**
N104	**67**	**Identification Code** **Description:** ID number meaningful to the customer	**X**	**AN**	**2/80**

Syntax:

R0203 -- At least one of N102 or N103 is required.
P0304 -- If either N103 or N104 are present, then the others are required.

Comments:

1. This segment, used alone, provides the most efficient method of providing organizational identification. To obtain this efficiency the "ID Code" (N104) must provide a key to the table maintained by the transaction processing party.
2. N105 and N106 further define the type of entity in N101.

N2 Additional Name Information

Pos: 250	**Max Use: 2**
Detail - Optional	
Loop: N1	**Elements: 2**

To specify additional names or those longer than 35 characters in length

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N201	**93**	**Name** **Description:** Free-form name	**M**	**AN**	**1/60**
N202	**93**	**Name** **Description:** Free-form name	**O**	**AN**	**1/60**

N3 Address Information

Pos: 260	Max Use: 2
Detail - Optional	
Loop: N1	Elements: 2

To specify the location of the named party

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N301	**166**	**Address Information** **Description:** Address information	**M**	**AN**	**1/55**
N302	**166**	**Address Information** **Description:** Address information	**O**	**AN**	**1/55**

N4 Geographic Location

Pos: 270	Max Use: 1
Detail - Optional	
Loop: N1	Elements: 4

To specify the geographic place of the named party

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
N401	19	**City Name** **Description:** Free-form text for city name	O	AN	2/30
N402	156	**State or Province Code** **Description:** Code (Standard State/Province) as defined by appropriate government agency	O	ID	2/2
N403	116	**Postal Code** **Description:** Code defining international postal zone code excluding punctuation and blanks (zip code for United States)	O	ID	3/15
N404	26	**Country Code**	O	ID	2/3

Syntax:

1. N406 C0605 -- If N406 is present, then N405 is required

Comments:

1. A combination of either N401 through N404, or N405 and N406 may be adequate to specify a location.
2. N402 is required only if city name (N401) is in the U.S. or Canada.

REF Reference Identification

Pos: 280	Max Use: 12
Heading - Optional	
Loop: N1	Elements: 3

To specify identifying information.
Used to further identify any customer-required identification numbers

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
REF01	**128**	**Reference Identification Qualifier** **Description:** Code qualifying the Reference Identification	**M**	**ID**	**2/3**
REF02	**127**	**Reference Identification** **Description:** Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier	**X**	**AN**	**1/30**
REF03	**352**	**Description** A free form description to clarify the related data elements and their content	**X**	**AN**	**1/80**

Syntax:

R0203 -- At least one of REF02 or REF03 is required.

TDS Total Monetary Value Summary

Pos: 010	Max Use: 1
Summary - Mandatory	
Loop: N/A	Elements: 1

To specify the total invoice discounts and amounts

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
TDS01	**610**	**Amount** **Description:** Monetary amount **User:** Total amount of invoice *including any prior balance owed at the time of billing. The amount equals the sum of the amounts in the BAL~M~J9, TXI02 and SAC05 elements. If the account has a credit balance, and therefore no payment is expected, this credit amount should be shown in this segment.*	**M**	**N2**	**1/15**

Semantics:

1. TDS01 is the total amount of invoice (including charges, less allowances) before terms discount (if discount is applicable).
2. TDS02 indicates the amount upon which the terms discount amount is calculated.
3. TDS03 is the amount of invoice due if paid by terms discount due date (total invoice or installment amount less cash discount).
4. TDS04 indicates the total amount of terms discount.

Comments:

1. TDS01 is the total amount due for this invoice and must equal the sum of the amounts in the TXI02 and SAC05 segments. If this amount is negative, send the minus sign.

TXI Tax Information

Pos: 020	Max Use: 10
Summary - Optional	
Loop:	Elements: 7

To specify tax information

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
TXI01	**963**	**Tax Type Code** **Description:** Code specifying the type of tax **Code** **Name** AT Assessment CA City Tax CS City Sales Tax CT County Tax FD Federal Tax FR Franchise Tax **Description:** Tax imposed by municipality for the right to provide service GR Gross Receipts Tax LO Local Tax (Not Sales Tax) **Description:** Service tax imposed on a local level LS State and Local Tax MP Municipal Tax SL State and Local Tax ST State Sales Tax	**M**	**ID**	**2/2**
TXI02	**782**	**Monetary Amount** **Description:** Monetary amount	**X**	**R**	**1/18**
TXI03	**954**	**Percent** This is the tax rate that is applied to the bill. Present as a decimal (6% should be presented as .06)	**X**	**R**	**1/10**
TX106	**441**	**Tax Exempt Code** 7 Yes (Tax Exempt) 8 No (Not Tax Exempt) 9	**X**	**ID**	**1/1**
TXI07	**662**	**Relationship Code** **Description:** Code indicating the relationship between entities **Code** **Name** A Add O Information Only **Description:** Charges which relate to but may not be included in or added to the unit price of the SLN. (i.e., compute WATS calculation based upon usage amounts)	**O**	**ID**	**1/1**
TX108	**828**	**Dollar Basis for Percentage**	**O**	**R**	**1/9**
TXI10	**350**	**Assigned Tax Identification**	**O**	**AN**	**1/20**

Syntax:

1. TXI02 R020306 -- At least one of TXI02, TXI03 or TXI06 is required.
2. TXI04 P0405 -- If either TXI04 or TXI05 are present, then the others are required.
3. TXI08 C0803 -- If TXI08 is present, then TXI03 is required

Semantics:

1. TXI02 is the monetary amount of the tax.
2. TXI03 is the tax percent expressed as a decimal.
3. TXI07 is a code indicating the relationship of the price or amount to the associated segment.

Notes:

Taxes that apply to the entire IT1 segment are shown in detail position 040. Taxes that do not apply to the entire IT1 segment, but do apply to a specific line charge are shown in TXI position 237, directly following the SAC charge in position 230. Taxes that apply to the entire invoice are considered Account level taxes and are shown in summary position 020. If an IT1 Account loop is used, account level taxes may appear within that loop.,

SAC Service, Promotion, Allowance, or Charge Information

Pos: 040 **Max Use: 1**
Summary - Optional
Loop: SAC **Elements: 9**

To request or identify a service, promotion, allowance, or charge; to specify the amount or percentage for the service, promotion, allowance, or charge

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
SAC01	**248**	**Allowance or Charge Indicator** **Description:** Code which indicates an allowance or charge for the service specified **Code** **Name** A Allowance C Charge N No Allowance or Charge	**M**	**ID**	**1/1**
SAC03	**559**	**Agency Qualifier Code** **Description:** Code identifying the agency assigning the code values **Code** **Name** EU Electric Utilities GU Gas Utilities	**X**	**ID**	**2/2**
SAC04	**1301**	**Agency Service, Promotion, Allowance, or Charge Code** **Description:** Agency maintained code identifying the service, promotion, allowance, or charge **User: See UIG website for valid codes (*http://www.uig.org*)** **User: We would prefer that "Previous Paid Balances" not be sent in the SAC segments. Reporting in BAL segment would be more applicable. However, if reporting payments must occur in SAC, they should be sent with one of the following codes:** **PAY, PAY001, PAY002, PAY003, PAY004** **When reporting "Previous Unpaid Balances" (including credit balances), they MUST be sent with one of the following codes and MUST be part of the total amount due in the TDS01:**	**X**	**AN**	**1/10**

Ref	Id	Element Name	Req	Type	Min/Max
		PBA, PRB, PRB000, PRB001, PRB002, PRB003 **When reporting "Late Fees", they MUST be sent with of the following codes and MUST be part of the total amount due in TDS01:** **LPC, LPC000, LPC001**			
SAC05	**610**	**Amount** **Description:** Monetary amount. The amount may be negative or positive. If negative, the minus sign, "-" must be transmitted.	**M**	**N2**	**1/15**
SAC07	**332**	**Percent** **Description:** Used to express the percentage of the total load that is being supplied. 75% should be expressed as 75 or 67.67% should expressed as 67.67.	**X**	**R**	**1/6**
SAC08	**118**	**Rate**	**O**	**R**	**1/9**
SAC09	**355**	**Unit or Basis for Measurement Code** (See MEA04 for acceptable values)	**X**	**ID**	**2/2**
SAC10	**380**	**Quantity**	**X**	**R**	**1/15**
SAC15	**352**	**Description** A free-form description to clarify the related data elements and their content	**X**	**AN**	**1/80**

Syntax:

R0203 -- At least one of SAC02 or SAC03 is required.
P0304 -- If either SAC03 or SAC04 are present, then the others are required.
P0607 -- If either SAC06 or SAC07 are present, then the others are required.
P0910 -- If either SAC09 or SAC10 are present, then the others are required.
C1110 -- If SAC11 is present, then SAC10 is required
L130204 -- If SAC13 is present, then at least one of SAC02 or SAC04 is required.
C1413 -- If SAC14 is present, then SAC13 is required
C1615 -- If SAC16 is present, then SAC15 is required

Semantics:

1. If SAC01 is "A" or "C", then at least one of SAC05, SAC07, or SAC08 is required.
2. SAC05 is the total amount for the service, promotion, allowance, or charge.
3. If SAC05 is present with SAC07 or SAC08, then SAC05 takes precedence.
4. SAC08 is the allowance or charge rate per unit.
5. SAC10 and SAC11 are the quantity basis when the allowance or charge quantity is different from the purchase order or invoice quantity.
6. SAC10 and SAC11 used together indicate a quantity range, which could be a dollar amount, that is applicable to service, promotion, allowance, or charge.
7. SAC13 is used in conjunction with SAC02 or SAC04 to provide a specific reference number as identified by the code used.
8. SAC14 is used in conjunction with SAC13 to identify an option when there is more than one option of the promotion.
9. SAC16 is used to identify the language being used in SAC15.

Notes:

Each SLN loop will contain only one SAC and TXI. Multiple charges/allowances require multiple SLN loops.

Previous editions of the guideline stated that the amount shows in the SAC05 will always be positive and that the code used in SAC01 would indicate whether to add or subtract the SAC05 amount to or from the TDS. It has been determined that this statement is incorrect; future versions of the UIG guidelines will no longer contain the above statement.

Comments:

1. SAC04 may be used to uniquely identify the service, promotion, allowance, or charge. In addition, it may be used in conjunction to further the code in SAC02.
2. In some business applications, it is necessary to advise the trading partner of the actual dollar amount that a particular allowance, charge, or promotion was based on to reduce ambiguity. This amount is commonly referred to as "Dollar Basis Amount". It is represented in the SAC segment in SAC10 using the qualifier "DO" - Dollars in SAC09.

Pos: 070	**Max Use: 1**
Summary - Optional	
Loop: N/A	**Elements: 1**

CTT Transaction Totals

To transmit a hash total for a specific element in the transaction set

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
CTT01	**354**	**Number of Line Items** **Description:** Total number of line items in the transaction set **User:** Number of IT1 seqments.	**M**	**N0**	**1/6**

Syntax:

1. CTT03 P0304 -- If either CTT03 or CTT04 are present, then the others are required.
2. CTT05 P0506 -- If either CTT05 or CTT06 are present, then the others are required.

Comments:

1. This segment is intended to provide hash totals to validate transaction completeness and correctness.

SE Transaction Set Trailer

Pos: 080	Max Use: 1
Summary - Mandatory	
Loop: N/A	Elements: 2

To indicate the end of the transaction set and provide the count of the transmitted segments (including the beginning (ST) and ending (SE) segments)

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
SE01	96	**Number of Included Segments** **Description:** Total number of segments included in a transaction set including ST and SE segments	M	N0	1/10
SE02	329	**Transaction Set Control Number** **Description:** Identifying control number that must be unique within the transaction set functional group assigned by the originator for a transaction set	M	AN	4/9

Comments:

1. SE is the last segment of each transaction set.

GE Functional Group Trailer

Pos:	Max Use: 1
Loop: N/A	Elements: 2

To indicate the end of a functional group and to provide control information.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
GE01	**97**	**Number of Included Transactions Sets** **Description:** Total number of segments included in a transaction set including ST and SE segments	**M**	**N0**	**1/6**
GE02		**Group Control Number**	**M**	**AN**	**1/9**

Comments

IEA Interchange Control Trailer

Pos:	Max Use: 1
Loop: N/A	Elements: 2

To define the end of an interchange of zero or more functional groups and interchange-related control segments.

Element Summary:

Ref	Id	Element Name	Req	Type	Min/Max
IEA01	116	Number of Included Functional Groups	M	N0	1/5
IEA02		Interchange Control Number	M	NO	9/9

Comments

Sample Gas 810 Record

ST|810|0036
BIG|20080731|INVOICE NUMBER||UTILITY|||PR|00
NTE|ADD|IF LAST MONTH'S PAYMENT IS NOT RECEIVED BY 8-20-08 SERVICE WILL BE TERMINATED
REF|11| ACCOUNT NUMBER|ESP
N1|BT|BILL TO CUSTOMER NAME|91|CUSTOMER NUMBER
N2|433300
N3|P O BOX 182368
N4|COLUMBUS|OH|43218-2368
N1|RE|VENDOR NAME |92|VENDOR ID NUMBER
N3|VENDOR REMIT TO ADDRESS
N4|CITY|ST|741212158
PER|CR|CUSTOMER SERVICE|TE|800-900-1955|EM|EMAILADDRESS@MSN.COM
ITD|05|4||||20080818
BAL|P|PB|26.75
BAL|M|TP|-24.75
BAL|M|J9|2.00
IT1|0001|10|HH|0|AA|SV|GAS|C3|METER
TXI|FR|1.17
TXI|ST|1.3
TXI|CS|0.25
MEA|AA|MU|1.2|HH|13561|13571|22
REF|MG|1207904830|METER
REF|RB|Z9170|Rate
DTM|150|20080626
DTM|151|20080728
SLN|1||A
SAC|C||GU|DIS003|2500|||||12|TD||||Gas delivery amount
SLN|2||A
SAC|C||GU|PRB001|200|||||||||Previous Unpaid Balance
N1|MQ|END USER COMPANY NAME
N2|433300
N3|END USER STREET NAME
N4|SACRAMENTO|CA|95823
TDS|2972
CTT|1