Ohio Electric

Implementation Guideline

For

Electronic **D**ata **I**nterchange

TRANSACTION SET

867

Usage Ver/Rel 004010

Summary of Changes

Version 1.0.0 May 1, 2001 Version 1.5.0

May 1, 2001

Initial Release

• Add DTM segment for document due date into the 867 per Change Control 11.

- Change position of N1 loop for Scheduling Coordinator from position 040 to position 080 per Change Control 17.
- Correct two typos in the 867 IG (The REF*PR and the QTY segments in the PL loop contain a gray box. In the gray box it lists the type of 867 (HI, HU, IU, MU). These two segments have a typo and list HU twice.) per Change Control 20.
- Remove the Summary pages (usually pages 2 and 3) from the implementation guides. These pages are automatically created by Foresight, but the last round of changes to the documents was done in Word and has not been updated in Foresight per Change Control 22...
- Added note to MEA01 elements in the 867 for Duke Energy Ohio to allow for them to send only current reading (and not previous reading) for all units of measure, not just demand per Change Control 27
- Added note to N1~8R segment to show AP validates on first 4 characters of customer name per change control 48.
- Added text to title on N1 pages to show which N1 per change control 50
- Updated REF~Q5 gray boxes to show SDID per change control 51
- Added REF~NH and REF~PR to the BD loop per Change Control 53
- Change the CO0101 in the QTY segment under the PTD*SU loop to remove the requirement to send the K1, K2, and K4 values per change control 61.
- Added TOU values to the PTD Summary Loop for the 867 Historical Usage transaction for FirstEnergy Corp. use only per change control 63.
- During 3/3/10 meeting, the OSPO Data Working Group reviewed & confirmed EDI change controls up to and including CC67. All changes in the v2.2.0 redline were accepted and v2.3.0 created as the new baseline for Ohio.

Added PTD*FG loop, OTY*KC, and OTY*KZ segments as per EDI Change Control 69.

- Incorporated AEP's administrative changes as per EDI Change Control 70.
- Incorporated Duke Energy Ohio's administrative changes as per EDI Change Control 72.
- Remove BD loop as per EDI Change Control 75
- Incorporated First Energy's administrative changes as per EDI Change Control 81.
- Added DTM*649 as optional when BPT01=01 as per EDI Change Control 83.
- Added DTM*150/151 to SU loop pos 210 for HU as per EDI Change Control 84.
- Incorporated LDC Rate Class, LDC Profile Description, and LDC Meter Cycle for HU as per EDI Change Control 82. Change effective NLT 6/30/12 for AEP, DP&L, and FE. Duke Energy Ohio NLT 12/31/2012.
- Incorporated Service Voltage and Loss Factor to the 867HU as per EDI Change Control 91. Change Effective 5/25/2012 for First Energy companies only, not used by other EDUs.
- Incorporated administrative changes to notes section and BPT04 as per EDI Change Control 97. No effective date necessary, change is admin only.
- Incorporate Change Control 103 Update (add net meter indicator & qualifiers)
- Incorporate Change Control 104 (clarify 867IU BO/PM looping for on/off peak)
- Incorporate Change Control 105 & 114 (REFLF & REFSV required for AEP & FE)
- Incorporate Change Control 108 (add effective date ranges to PLC & NSPL values)
- Incorporate Change Control 110 (TOU reporting in 867HU)
- Incorporate Change Control 111 (Add REFNH, REFLO, REFBF & REFPR to FG loop)
- Incorporate Change Control 112 (add net meter qualifiers for FE in HU and IU)
- Incorporate Change Control 115 (add meter number for PM loop for HI)
- Incorporate Change Control 117 (clarify AEP practice for HU/HI handling)

Version 2.0.0 December 31, 2001

Version 2.1.0 June 30, 2002

Version 2.2.0 October 1, 2005

Version 2.3.0 March 9, 2010

Version 2.4.0 February 14, 2012

Version 2.5.0 February 15, 2013

Version 2.6.0 March 24, 2014

Summary of Changes

Version 2.6.1 February 13, 2015

- Incorporate Change Control 120 (DP&L support of 867HI)
- Incorporate Change Control 122 (correct Duke 867MU notes)
- Incorporate Change Control 123 (add Duke net meter data reporting)
- Incorporate Change Control 124 (correct FE net meter QTY01 in PL loop)

Version 2.6.2 February 11, 2016

- Incorporate Change Control 127 (AEP OH Net Meter Reporting)
- Incorporate Change Control 131 (PM loop optional in 867IU Cancel)
- Incorporate Change Control 137v2 (Duke Energy Ohio use of PTD*SU in 867HU)

Version 2.6.3 February, 2017

- Incorporated Change Control 140 (Add the REF*MG to the PTD*PM loop in the 867IU transaction as a Required field)
- Incorporated Change Control 142 (Remove comment from Notes and BPT04 C1 related to Duke identifying whether an account has interval data available. Duke to make changes to their system to identify the summary historical usage as DD regardless of whether the account has interval data available. Also fix typo in graybox of X5)
- Incorporated Change Control 146 (Update the 867 for monthly usage only to add new codes (71, 76, 85, 97) to the MEA07 in the SU and PL loops and C04002 in the REF*IX for AEP only for AEP's TOU Market Transition)
- Incorporated Change Control 151 (Update the DTM04 value in the PTD*PM loop to show the correct value of "ES" for Eastern Standard Time)

Version 2.6.4 February 28, 2018

- Incorporate Change Control 155 (Change to add Dayton Power & Light (DPL) use of the PTD*BB loop to 867MU/IU which reflects the EDU's billing data for the service at the unit of measure level.)
- Incorporate Change Control 156 (Change to add Dayton Power & Light (DPL) use of the QTY*87 and QTY*9H segments in the PTD*SU, PTD*PL, PTD*BO and PTD*PM loops.)
- Incorporated Change Control 160 (Add code 20 Unavailable (Used when meter data is not available to fill the intervals) to the QTY01 in the PM loop of the 867)
- Incorporated Change Control 164 (Clean up the PTD~BC Loop in the 867 to remove the PTD~BD example and update the DTMs to show how it is being sent in production)
- Incorporated Change Control 167 (Update the Definitions section of the 867 IG to show the correct processing by FirstEnergy when an HI request is processed)
- Incorporate Change Control 168 (Update the Definitions section of the 867 IG to correct the typo under the Duke Energy Ohio 867 Historical Usage where it notes "M76 (Interval Meter)". Should say "M76 (Invalid Meter)".)

Definitions:

The following acronyms are used throughout this 867 Guideline.

HI – Historical Interval. The HI will be sent in response to an 814 HI request. This will be historical usage for an account that has an interval meter.

HU – Historical Usage. The HU will be sent in response to an 814 HU request. This will be historical usage for an account that has non-interval metered or unmetered services.

MU – Monthly Usage. The MU will be sent monthly (may be sent bi-monthly for customers on bi-monthly billing) for any account that has non-interval metered or unmetered services. This is the usage that will be used to calculate the 810 in Consolidated Billing

IU – Interval Usage. The IU will be sent monthly for any account that has an interval meter. This is the usage that will be used to calculate the 810 in Consolidated Billing

867 Looping

The looping in the 867 is directly related to the service being requested by the CRES, the type of service on the account, and the type of 867 being sent. The indicator for the type of 867 being sent is shown in the BPT04 element.

Historical Usage (867HU and 867HIU):

AEP

AEP supports both 867HU and 867HIU via EDI. In the event the CRES requests Historical Interval (HI) usage for an account without historical interval history present, AEP will accept the request, send REF*1P with HIU (Historical Interval Unavailable) and provide the CRES with 867 Historical Usage transaction set.

In the 867HU, AEP sends the PTD*FG loop and a PTD*PL loop for each meter/unit of measure/time of use/net meter channel (consumption- usage delivered & generation – usage received). For unmetered services, the PTD*FG and PTD*BC loops are sent. In the 867HIU, AEP sends the PTD*FG and a PTD*PM loop for each meter/unit of measure. For net metering in the 867HIU, AEP sends single PM loop reporting net usage delivered (consumption), if interval read is net negative (usage received / generation) reports 0KH, no 87/9H qualifiers are sent in 867HIU.

DPL

DPL supports both 867HU and 867HIU via EDI. If a CRES requests interval detail on a non-interval account, DPL will reject with a reject code of HIU (INVALID REQUEST FOR USAGE). The CRES may re-submit the request as 814HU and DPL will provide summary level 867HU data.

In the 867HU, DPL sends the PTD*FG loop and a PTD*PL loop for each meter/unit of measure/time of use. For unmetered services, the PTD*FG and PTD*BC loops are sent. In the 867HIU, DPL sends the PTD*FG loop and a PTD*PM loop for each meter/unit of measure.

Duke Energy Ohio

Duke Energy Ohio supports both 867HU and 867HIU via EDI. If a CRES requests interval detail on a non-interval account, Duke will reject with a reject code of M76 (Invalid Meter). The CRES may re-submit the request as 814HU and Duke will provide summary level 867HU data.

In the 867HU, Duke sends the PTD*FG loop, a PTD*SU loop, and a PTD*PL loop for each meter/unit of measure. In the 867HIU, Duke sends the PTD*FG loop, a PTD*BO loop and a PTD*PM loop for each meter/unit of measure. For unmetered services, the PTD*FG and PTD*BC loops are sent.

FirstEnergy

FirstEnergy supports both 867HU and 867HIU via EDI in Ohio. If a CRES requests HI and interval data is not available, the request would be accepted with a REF*1P code of HIU (Historical Interval Usage Unavailable) and an 867 Historical usage will be provided.

In the 867HU, FirstEnergy sends the PTD*FG loop and a PTD*SU loop for each unit of measure/time of use. For unmetered services, the PTD*FG and PTD*BC loops are sent.

Monthly Usage (867MU and 867IU):

AEP

In the 867MU, for metered services AEP sends the PTD*SU loop and a PTD*PL loop for each meter/unit of measure. For unmetered services AEP sends a PTD*BC loop. In the 867IU, AEP sends a PTD*BO and a PTD*PM loop for each meter/unit of measure if the BPT04 = C1. If the BPT04 = X5, only the PTD*BO loop is sent for each meter/unit of measure.

DPL

In the 867MU, for metered services, DPL sends the PTD*BB loop for each account and a PTD*SU loop and a PTD*PL loop for each meter/unit of measure. For unmetered services, DPL sends a PTD*BC loop. In the 867IU, DPL sends a PTD*BB loop for each account and a PTD*BO loop and a PTD*PM loop for each meter/unit of measure if the BPT04 = C1. If the BPT04 = X5, only the PTD*BB loop is sent for each account and a PTD*BO loop is sent for each meter/unit of measure.

Duke Energy Ohio

In the 867MU, Duke sends a single PTD*BB and PTD*SU loop for each account and a PTD*PL loop for each meter/unit of measure. For unmetered services, Duke sends a single PTD*BB for each account and PTD*BC loop for each unmetered service. In the 867IU, Duke sends a single PTD*BB for each account, and a PTD*BO and a PTD*PM loop for each meter/unit of measure if the BPT04 = C1. If the BPT04 = X5, only the PTD*BB will be sent for the account and a PTD*BO loop is sent for each meter/unit of measure.

Duke Energy Ohio – Billing for Net Metering – Net Consumption

For any month where the customer consumes more electricity than they generate, Duke Energy Ohio will reduce the generation from consumption and report net consumption in the SU loop. A supplier's billed consumption for a month where the customer is a net consumer is the net of consumption less generation.

Duke Energy Ohio – Billing for Net Metering – Net Generation

For any month where the customer generates more electricity than they consume, Duke Energy Ohio will credit the customer's account for the net generation in the SU loop. A supplier's billed consumption for a month where the customer is a net generator is zero.

FirstEnergy

In the 867MU, FirstEnergy sends the PTD*SU loop and a PTD*PL loop for each meter/unit of measure. For unmetered services, FirstEnergy sends a PTD*BC loop. In the 867IU, FirstEnergy sends a PTD*BO and a PTD*PM loop for each meter/unit of measure if the BPT04 = C1. If the BPT04 = X5, only the PTD*BO loop is sent for each meter/unit of measure.

867 Product Transfer and Resale Report

Functional Group ID= \mathbf{PT}

Introduction:

This Draft Standard for Trial Use contains the format and establishes the data contents of the Product Transfer and Resale Report Transaction Set (867) for use within the context of an Electronic Data Interchange (EDI) environment. The transaction set can be used to: (1) report information about product that has been transferred from one location to another; (2) report sales of product from one or more locations to an end customer; or (3) report sales of a product from one or more locations to an end customer, and demand beyond actual sales (lost orders). Report may be issued by either buyer or seller.

Transaction Set Notes

1. The N1 loop is used to identify the transaction sender and receiver.

Segment: ST Transaction Set Header

Position: 010

Loop:

Level: Heading Usage: Mandatory

Max Use: 1

Purpose:

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

Syntax Notes:

Semantic Notes:

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

Comments:

Notes:

Required

ST~867~000000001

M	Ref. <u>Des.</u> ST01	Data Element 143	Name Transaction Set Identifier Code	Attr M	ributes ID 3/3
			Code uniquely identifying a Transaction Set 867 Product Transfer and Resale Report		
M	ST02	329	Transaction Set Control Number Identifying control number that must be unique within the transactional group assigned by the originator for a transaction		AN 4/9 ion set

~	RDT
Segment:	BPT Beginning Segment for Product Transfer and Resale
Position:	020
Loop:	
Level:	Heading
Usage:	Mandatory
Max Use:	1
Purpose:	To indicate the beginning of the Product Transfer and Resale Report Transaction Set and transmit identifying data
Syntax Notes:	1 If either BPT05 or BPT06 is present, then the other is required.
Semantic Notes:	1 BPT02 identifies the transfer/resale number.
	2 BPT03 identifies the transfer/resale date.
	3 BPT08 identifies the transfer/resale time.
	4 BPT09 is used when it is necessary to reference a Previous Report Number.
Comments:	·
Notes:	If BPT01 = '01' (Cancellation), then an original 867 must be sent as soon as corrected
	data is available, if there is any replacement/corrected data.
	Required
	BPT~00~199902010001~19990131~DD
	BPT~00~199902010001~19990131~DD~~~F
	BPT~01~199902020001~19990131~DD~~~~1999020100001
	DIT 01 1///02020001 1///0131 DD 1///020100001

	Ref.	Data				
	Des.	Element	Name	-		ributes
M	BPT01	353	Transaction Set Pu	-	M	ID 2/2
				rpose of transaction set		
			00	Original		
				Conveys original readings for the accou	nt bei	ng
			0.1	reported.		
			01	Cancellation	4	4. h.
				Readings previously reported for the accignored.	count	are to be
			52	Response to Historical Inquiry		
				Response to a request for historical meter	er rea	ding
M	BPT02	127	Reference Identifie	cation	O	AN 1/30
				ion as defined for a particular Transaction	Set o	or as
				ference Identification Qualifier		
				n identification number assigned by the or	rigina	tor of this
			transaction. This in	umber must be unique over time.		
			This code will be us	sed as a cross reference to the 810 billing	docur	ment, and for
				make the other party whole, it will also be		
			on the 820.			
			T		. 44	(4 (- 7) - 1
				nce numbers will only contain uppercase le that punctuation (spaces, dashes, etc.) m		
M	BPT03	373	Date	that panetuation (spaces, dashes, etc.) in		DT 8/8
			Date expressed as C	CCYYMMDD		
			The transaction crea	ation date - the date that the data was proc	essed	by the
			sender's application	•		
M	BPT04	755	Report Type Code		O	ID 2/2
			Code indicating the	title or contents of a document, report or	suppo	orting item
			C1	Cost Data Summary		
				Indicates transaction is an Interval Data		
				This will be used when supplier is received		
				summary and detail interval data on an a only interval meters.	iccou	nt with
				omy interval meters.		

			DD	Distributor Inventory Report		
				Indicates transaction is a monthly metered or unmetered transaction (no interval meters in the transaction).		
			DR	Datalog Report		
			X5	Indicates transaction contains some combination of Interval, Monthly, and/or Unmetered Data. (Duke Energy Ohio ONLY) Restricted Report		
			113	Indicates transaction contains summary data (at the		
				meter level), but there are interval meters on the account		
C	BPT07	306	Action Code	O ID 1/2		
			Code indicating type	e of action		
			Conditional, Requir	ed if final usage reading.		
			F	Final		
				Final meter read data being sent for this customer. The customer account is final with the EDU or the customer switched to a new CRES.		
C	BPT09	127	Reference Identific	cation O AN 1/30		
			specified by the Ref When BPT01 = 01 (transaction identific cancelled.	fon as defined for a particular Transaction Set or as Gerence Identification Qualifier (cancel), this element is required and contains the action number from BPT02 of the transaction that is being seed if this is a cancel (BPT01 = 01)		

DTM Date/Time Reference **Segment:**

Position: 050

Loop:

Level: Heading Usage: Optional Max Use: 10

Purpose: To specify pertinent dates and times

At least one of DTM02 DTM03 or DTM05 is required. **Syntax Notes:**

If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

Required for LDC Consolidated Bill Ready, not used for Dual Billing or LDC

Consolidated Rate Ready

Optional in the Usage Cancel transaction (BPT01=01).

Examples: DTM*649*19990131*2359

Data Element Summary

M	Ref. <u>Des.</u> DTM01	Data Element 374	Name Date/Time Q Code specifying	Qualifier type of date or time, or both date and time Attributes M ID 3/3
			649	Document Due
				The date that the non-billing party must provide the 810 transaction back to the billing party.
M	DTM02	373	Date	X DT 8/8
			Date expressed a	as CCYYMMDD
M	DTM03	337	Time	X TM 4/8
				in 24-hour clock time as follows: HHMM, or HHMMSS, or HHMMSSD, or where H = hours (00-23) M = minutes (00-59) S = integer seconds (00-59) and

DD = decimal seconds; decimal seconds are expressed as follows: D = tenths (0-9) and DD = hundredths (00-99)

HHMM format

 $\textbf{Segment:} \qquad \textbf{N1} \ \ \textbf{Name} \ (\textbf{8S-EDU})$

Position: 080

Loop: N1 Optional

Level: Heading Usage: Optional

Max Use: 1

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

Syntax Notes: 1 At least one of N102 or N103 is required.

If either N103 or N104 is present, then the other is required.

Semantic Notes:

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.

N105 and N106 further define the type of entity in N101.

Notes: Required

N1~8S~EDU COMPANY~1~007909411~~41

M	Ref. <u>Des.</u> N101	Data Element	Name Entity Identifier (Codo		ributes ID 2/3
IVI	NIUI	N101 98	Code identifying an	n organizational entity, a physical location		
			individual 8S	Consumer Service Provider (CSP)		
				EDU		
M	N102	93	Name		X	AN 1/60
			Free-form name			
			EDU Name			
M	N103	66	Identification Cod	le Qualifier	X	ID 1/2
			Code designating the Code (67)	he system/method of code structure used for	or Ide	entification
			1	D-U-N-S Number, Dun & Bradstreet		
			9	D-U-N-S+4, D-U-N-S Number with For Suffix	ur Ch	aracter
M	N104	67	Identification Cod	le	X	AN 2/80
			Code identifying a	party or other code		
			EDU D-U-N-S Nu	mber or D-U-N-S + 4 Number		
M	N106	98	Entity Identifier (Code	0	ID 2/3
			Code identifying an individual	n organizational entity, a physical location,	, proj	perty or an
			40	Receiver		
			41	Submitter		

Segment: N1 Name (SJ - CRES)

Position: 080

Loop: N1 Optional

Level: Heading Usage: Optional

Max Use: 1

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

Syntax Notes: 1 At least one of N102 or N103 is required.

If either N103 or N104 is present, then the other is required.

Semantic Notes: 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.

N105 and N106 further define the type of entity in N101.

Notes: Required

N1~SJ~CRES COMPANY~9~007909422CRES~~40 N1~SJ~CRES COMPANY~1~007909422~~40

	Ref. Des.	Data Element	Name	•	Attı	ributes
\mathbf{M}	N101	98	Entity Identifier C	Code	_	ID 2/3
			Code identifying an individual	organizational entity, a physical location,	, prop	perty or an
			SJ	Service Provider		
				CRES		
M	N102	93	Name		X	AN 1/60
			Free-form name			
			CRES Name			
M	N103	66	Identification Code	e Qualifier	X	ID 1/2
			Code designating the Code (67)	ne system/method of code structure used for	or Ide	entification
			1	D-U-N-S Number, Dun & Bradstreet		
			9	D-U-N-S+4, D-U-N-S Number with For Suffix	ur Ch	aracter
M	N104	67	Identification Code	e	\mathbf{X}	AN 2/80
			Code identifying a p	party or other code		
			CRES D-U-N-S Nu	imber or D-U-N-S + 4 Number		
M	N106	98	Entity Identifier C	code	O	ID 2/3
			Code identifying an individual	organizational entity, a physical location	, prop	perty or an
			40	Receiver		
			41	Submitter		

 ${\bf Segment:} \qquad {\bf N1} \ \ {\bf Name} \ ({\bf RS-Scheduling} \ {\bf Coordinator})$

Position: 080

Loop: N1 Optional

Level: Heading Usage: Optional

Max Use: 1

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

Syntax Notes: 1 At least one of N102 or N103 is required.

If either N103 or N104 is present, then the other is required.

Semantic Notes:

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.

N105 and N106 further define the type of entity in N101.

Notes: Required when a CRES is using more than one Scheduling Coordinator (Not used by

AEP)

N1~RS~SCHEDULING COORDINATOR~1~006193212S

M	Ref. <u>Des.</u> N101	Data Element 98	Name Entity Identifier C	ode		ributes ID 2/3	
			•	Code identifying an organizational entity, a physical location, individual		perty or an	
			KS	Receiving Facility Scheduler Scheduling Coordinator			
M	N102	93	Name	Scheduling Cool dinator	X	AN 1/60	
112		,,,	Free-form name			111 (1,00	
			Name of Scheduling Coordinator				
M	N103	66	Identification Code	e Qualifier	X	ID 1/2	
			Code designating the Code (67)	e system/method of code structure used for	or Ide	entification	
			1	D-U-N-S Number, Dun & Bradstreet			
			9	D-U-N-S+4, D-U-N-S Number with For Suffix	ır Ch	aracter	
M	N104	67	Identification Code	e	X	AN 2/80	
			Code identifying a p	party or other code			
			Scheduling Coordin	ator D-U-N-S Number or D-U-N-S + 4 N	umb	er	

Segment: N1 Name (8R - Customer)

Position: 080

Loop: N1 Optional

Level: Heading Usage: Optional

Max Use: 1

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

Syntax Notes: 1 At least one of N102 or N103 is required.

If either N103 or N104 is present, then the other is required.

Semantic Notes: 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.

N105 and N106 further define the type of entity in N101.

Notes: Required

N1~8R~CUSTOMER NAME

N1~8R~CUSTOMER NAME~92~STORE 7813

	Ref. Des.	Data Element	Name	ent Summary	Δttr	ributes	
M	N101	98	Entity Identifier C	ode		ID 2/3	
			Code identifying an individual 8R	organizational entity, a physical location, Consumer Service Provider (CSP) Custo		erty or an	
				Customer			
M	N102	93	Name		X	AN 1/60	
				Free-form name			
			Customer Name as	documented in the sender's application sys	stem.		
C	N103	66	Identification Code	e Qualifier	X	ID 1/2	
			Code (67)	e system/method of code structure used for	r Ide	entification	
			Condition: Required	d if available			
			92	Assigned by Buyer or Buyer's Agent			
C	N104	67	Identification Code	e	X	AN 2/80	
			Code identifying a p	party or other code			
			Store Number				
			Condition: Required	d if available			

Position: 120

Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: 1 REF

Notes:

Comments:

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

Account numbers will only contain uppercase letters (A to Z) and Digits (0 - 9). Note that punctuation (spaces, dashes, etc.) must be excluded, and leading and trailing zeros

that are part of the account number must be present. Required if previously sent on the Enrollment or Change.

REF~11~1394959

M	Ref. <u>Des.</u> REF01	Data <u>Element</u> 128	Name Reference Identification Qualifier Code publishing the Defense at Identification	Attı M	ributes ID 2/3			
			Code qualifying the Reference Identification					
			11 Account Number					
			CRES assigned customer account n	umber				
M	REF02	127	Reference Identification	X	AN 1/30			
			Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier					
			CRES customer account number					

 ${f REF}$ Reference Identification (EDU Account Number) **Segment:**

Position: 120

> Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose:

To specify identifying information

Syntax Notes: At least one of REF02 or REF03 is required.

> If either C04003 or C04004 is present, then the other is required. If either C04005 or C04006 is present, then the other is required. 3

Semantic Notes: Comments:

Notes:

REF04 contains data relating to the value cited in REF02.

Account numbers will only contain uppercase letters (A to Z) and Digits (0 - 9). Note that punctuation (spaces, dashes, etc.) must be excluded, and leading and trailing zeros

that are part of the account number must be present.

Conditional - Required for all utilities except AEP, which will use Service Delivery

Identification Number. REF~12~1239485790

REF01	128	Name Reference Ident	tification Qualifier	M	ributes ID 2/3			
		Code qualifying	the Reference Identification					
		12	Billing Account					
			EDU Account Number					
REF02	127	Reference Ident	tification	X	AN 1/30			
		specified by the	Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier					
	REF02	REF02 127	REF02 127 Reference Ident Reference inform specified by the	EDU Account Number REF02 127 Reference Identification	Billing Account EDU Account Number REF02 127 Reference Identification X Reference information as defined for a particular Transaction Set of specified by the Reference Identification Qualifier			

Segment: REF Reference Identification (Previous EDU Account Number)

Position: 120

Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

2 If either C04003 or C04004 is present, then the other is required.

3 If either C04005 or C04006 is present, then the other is required.

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

Comments:

Notes: Account numbers will only contain uppercase letters (A to Z) and Digits (0 - 9). Note that punctuation (spaces, dashes, etc.) must be excluded, and leading and trailing zeros

that are part of the account number must be present.

Condition: Required if the account number has changed in the last 60 days. Required for all utilities except AEP, which will use Service Delivery Identification Number. (Not

used by AEP) REF~45~939581900

Data Element Summary

M	Ref. <u>Des.</u> REF01	Data Element 128	Name Reference Identif Code qualifying the	fication Qualifier ne Reference Identification	Attr M	ributes ID 2/3
			45	Old Account Number		
				EDU's Previous Account Number		
M	REF02	127	Reference Identif	fication	X	AN 1/30
			Reference information specified by the R	ı Set o	or as	

EDU Previous Account Number

Position: 120

Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Not Used IU: Required MU: Required REF~BLT~LDC

Data Element Summary

Ref. <u>Des.</u> REF01	Data Element 128	<u>Name</u> Reference Identific	cation Qualifier	Attributes M ID 2/3		
		Code qualifying the	Reference Identification			
		BLT	Billing Type			
		- 0 10	Identifies whether the bill is consolidate (LDC) or CRES (ESP), or whether each render their own bill. See REF02 for varieties	n party will alid values.		
REF02	127	Reference Identific	cation	X AN 1/30		
		Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier DUAL Dual Billing				
			Each party bills the customer for its por	rtion		
		ESP	Energy Supplier Consolidated Billing			
			The CRES bills the customer.			
		LDC	Utility Consolidated Billing			
	Des.	Des. Element REF01 128	Des. REF01 128 Reference Identified Code qualifying the BLT REF02 127 Reference Identified Reference informatis specified by the Reference DUAL ESP	Des. Element Reference Identification Qualifier Code qualifying the Reference Identification BLT Billing Type Identifies whether the bill is consolidate (LDC) or CRES (ESP), or whether each render their own bill. See REF02 for visible Reference Identification Reference Identification Reference Identification Qualifier DUAL Dual Billing Each party bills the customer for its por ESP Energy Supplier Consolidated Billing The CRES bills the customer.		

The EDU bills the customer

February 28, 2019

Position: 120

Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

Dof

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

Notes: HI: Not Used HU: Not Used

Doto

IU: Required MU: Required REF~PC~LDC

Data Element Summary

M	Des. REF01	Element 128	Name Reference Identifie	cation Qualifier	Attı M	ributes ID 2/3
			Code qualifying the	e Reference Identification		
			PC	Production Code		
				Identifies the party that is to calculate t bill	he cha	arges on the
M	REF02	127	Reference Identifie	cation	X	AN 1/30

Reference information as defined for a particular Transaction Set or as

specified by the Reference Identification Qualifier

DUAL Each Party calculates its portion of the bill
ESP The CRES calculates charges for each party
LDC The EDU calculates charges for each party

f REF Reference Identification (Q5 = SDID Number) **Segment:**

120 **Position:**

> Loop: N1 Optional

Level: Heading Usage: Optional Max Use: 12

Purpose: To specify identifying information

At least one of REF02 or REF03 is required. **Syntax Notes:**

If either C04003 or C04004 is present, then the other is required. 3

If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

Notes:

REF04 contains data relating to the value cited in REF02.

SDID numbers will only contain uppercase letters (A to Z) and Digits (0 - 9). Note that punctuation (spaces, dashes, etc.) must be excluded, and leading and trailing zeros that

are part of the SDID number must be present.

Required if customer is in AEP service territory. Maximum use of 1 per transaction

REF~O5~9876543245678DCH

M	Ref. <u>Des.</u> REF01	Data Element 128	Name Reference Identification Qualifier	Attributes M ID 2/3
			Code qualifying the Reference Identification	
			Q5 Property Control Number	
			AEP assigned Service Delivery Identification Number	r
M	REF02	127	Reference Identification	X AN 1/30
		Reference information as defined for a particular Transpecified by the Reference Identification Qualifier AEP assigned Service Delivery Identification Number		

Segment: PTD Product Transfer and Resale Detail (BB=Billed Summary)

Position: 010

Loop: PTD Mandatory

Level: Detail Usage: Mandatory

Max Use: 1

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

Notes:

HI: Not Used HU: Not Used

IU: Required for DPL and Duke Energy OH onlyMU: Required for DPL and Duke Energy OH only

For IU/MU: Any Transformer Loss Factor (MEA~~CO) the KH value in the QTY02 of the BB loop should be representative of the Transformer Loss Factor being applied. No adjustments should be made to the KH values in the QTY02 in the SU, BO, PL or PM loops.

NOTE: The BB loop includes unmetered usage.

DPL will provide the billed energy and demand in the PTD*BB loop. Since billed demand is reported at the service level and the PTD*BB loop is at the account level, the billed demand will be accompanied by a REF*NH for the rate code which is unique per service on an account.

One Monthly Billed Summary PTD loop is required for every account reporting kWh & k1 (if applicable) units of measure.

PTD~BB

	Ref.	Data		
	Des.	Element	<u>Name</u>	<u>Attributes</u>
\mathbf{M}	PTD01	521	Product Transfer Type Code	M ID 2/2
			Code identifying the type of product transfer	
			BB Monthly Billed Summary	
			This information is obtained from the billing system to re-	eflect the billing data
			for this account at the unit of measure level.	

Segment: DTM Date/Time Reference (Service Period Start)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

HI: Not Used HU: Not Used IU: Required MU: Required DTM~150~19990101

	Ref.	Data			
	Des.	Element	<u>Name</u>	Attı	<u>ributes</u>
M	DTM01	374	Date/Time Qualifier	\mathbf{M}	ID 3/3
			Code specifying type of date or time, or both date and time 150 Service Period Start		
M	DTM02	373	Beginning Read Date Date Date expressed as CCYYMMDD Date expressed as CCYYMMDD	X	DT 8/8

Segment: DTM Date/Time Reference (Service Period End)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

HI: Not Used HU: Not Used IU: Required MU: Required DTM~151~19990131

	Ref.	Data			
	Des.	Element	<u>Name</u>	Attı	<u>ributes</u>
M	DTM01	374	Date/Time Qualifier	\mathbf{M}	ID 3/3
			Code specifying type of date or time, or both date and time 151 Service Period End Ending Pead Date		
M	DTM02	373	Ending Read Date Date Date expressed as CCYYMMDD Date expressed as CCYYMMDD	X	DT 8/8

 $\textbf{Segment:} \qquad \textbf{QTY} \ \ \textbf{Quantity} \ (\textbf{Billed Kilowatt Hours})$

Position: 110

Loop: QTY Optional

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

Only one of QTY02 or QTY04 may be present. QTY04 is used when the quantity is non-numeric.

Semantic Notes:

Comments: Notes:

Billed kWh

HI: Not Used HU: Not Used IU: Required MU: Required QTY~D1~22348~KH

			Dutu Licii	ent summar y		
	Ref.	Data		•		
	Des.	Element	<u>Name</u>		<u>Attı</u>	<u>ributes</u>
M	QTY01	673	Quantity Qualifier	•	\mathbf{M}	ID 2/2
			Code specifying the	e type of quantity		
			D1	Billed		
				Used when quantity in QTY02 is a "Bil	led" o	quantity
M	QTY02	380	Quantity		\mathbf{X}	R 1/15
			Numeric value of q	uantity		
M	QTY03	355	Unit or Basis for N	Aeasurement Code	M	ID 2/2
			Code specifying the	e units in which a value is being expressed	d, or n	nanner in
			which a measureme	ent has been taken		
			KH	Kilowatt Hour		
				kWh - Kilowatt Hours		

Segment: QTY Quantity (Billed Demand)

Position: 110

Loop: QTY Optional

Level: Detail Usage: Optional

Max Use: 1

Notes:

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.
2 Only one of QTY02 or QTY04 may be present.

1 QTY04 is used when the quantity is non-numeric.

Semantic Notes: Comments:

Billed Demand - Required if account measures Demand (KW). This must be sent even if

Billed (derived) demand is equal to measured demand.

HI: Not Used HU: Not Used

IU: Required as per above noteMU: Required as per above note

QTY~D1~223~K1

	Ref.	Data				
	Des.	Element	<u>Name</u>		<u>Attr</u>	<u>ributes</u>
M	QTY01	673	Quantity Qualifier		\mathbf{M}	ID 2/2
			Code specifying the	type of quantity		
			D1	Billed		
				Used when quantity in QTY02 is a "Bill	ed" c	quantity
M	QTY02	380	Quantity		X	R 1/15
			Numeric value of qu	antity		
M	QTY03	355	Unit or Basis for M	leasurement Code	M	ID 2/2
			Code specifying the	units in which a value is being expressed	, or n	nanner in
			which a measurement	nt has been taken		
			K1	Kilowatt Demand		

Segment: QTY Quantity (Measured Demand)

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

2 Only one of QTY02 or QTY04 may be present.

Semantic Notes:

Notes: 1 QTY04 is used when the quantity is non-numeric.

Comments: Notes:

Measured Demand - Required if account measures Demand (KW).

HI: Not Used HU: Not Used

IU: Required as per above noteMU: Required as per above note

QTY~QD~223~K1

	Ref. <u>Des.</u>	Data <u>Element</u>	<u>Name</u>	•	<u>Attr</u>	<u>ributes</u>
M	QTY01	673	Quantity Qualifier		M	ID 2/2
			Code specifying the	type of quantity		
			KA	Estimated Quantity Delivered		
				Used when the quantity delivered is esti	mate	ed
			QD	Quantity Delivered		
				Quantity is actual		
M	QTY02	380	Quantity		X	R 1/15
			Numeric value of qu	antity		
M	QTY03	355	Unit or Basis for M	leasurement Code	M	ID 2/2
			Code specifying the which a measurement	or n	nanner in	
			K1	Kilowatt Demand		

Segment: ${\bf REF}$ Reference Identification (EDU Rate Code)

Position: 190

Loop: QTY Optional

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

nments: Notes:

es: HI: Not Used HU: Not Used

IU: Required for DP&L if there is billed demand on the account MU: Required for DP&L if there is billed demand on the account

REF~NH~RES

	Ref.	Data			
	Des.	Element	<u>Name</u>	<u>Attr</u>	<u>ributes</u>
M	REF01	128	Reference Identification Qualifier	\mathbf{M}	ID 2/3
			Code qualifying the Reference Identification		
			NH Rate Card Number		
			EDU Rate Code or tariff		
M	REF02	127	Reference Identification	\mathbf{X}	AN 1/30
			Reference information as defined for a particular Transaction	Set o	or as
			specified by the Reference Identification Qualifier		
			EDU Rate Code or tariff		

Segment: PTD Product Transfer and Resale Detail (Non-Interval Metered Services

Summary)

Position: 010

Loop: PTD Mandatory

Level: Detail
Usage: Mandatory

Max Use:

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

2 If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required for FE only since reporting at account level, otherwise not used

IU: Required for FirstEnergy when BPT04 = X5, otherwise not used.

MU: Required if there are metered services on the account

A summary loop will be provided for each type of consumption (unit of measure) for all meters on the account. Usage for all meters on the same tariff rate will be summed in this

loop. For MU/IU – Data is obtained from the metering system.

PTD~SU

Data Element Summary

Code identifying the type of product transfer

SU Summary

Segment: DTM Date/Time Reference (Service Period Start)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used HU: Not Used

IU: Required for FirstEnergy when BPT04 = X5, otherwise not used.

MU: Required if there are metered services on the account

DTM~150~19990101

M	Ref. <u>Des.</u> DTM01	Data Element 374	Name Date/Time Qualifier	Attı M	ributes ID 3/3
			Code specifying type of date or time, or both date and time 150 Service Period Start		
			Beginning Read Date		
M	DTM02	373	Date	X	DT 8/8
			Date expressed as CCYYMMDD		
			Date expressed as CCYYMMDD		

Segment: DTM Date/Time Reference (Service Period End)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used HU: Not Used

IU: Required for FirstEnergy when BPT04 = X5, otherwise not used.

MU: Required if there are metered services on the account

DTM~151~19990131

Ref. <u>Des.</u> DTM01	Data Element 374		er	Attı M	ributes ID 3/3
		1	•		
		151	Service Period End		
		Ending Read Date			
DTM02	373	Date		X	DT 8/8
		Date expressed as 0	CCYYMMDD		
		Date expressed as C	CCYYMMDD		
	Des. DTM01	Des. Element DTM01 374	Des. Date DTM01 Element 374 Date/Time Qualifit Code specifying ty 151 Ending Read Date DTM02 373 Date Date expressed as One	Des. Des. Date/Time Qualifier Code specifying type of date or time, or both date and time 151 Service Period End Ending Read Date	Des. DTM01Element 374Name Date/Time QualifierAttrCode specifying type of date or time, or both date and time 151Service Period EndEnding Read DateEnding Read DateDTM02373Date Date expressed as CCYYMMDD

Segment: QTY Quantity

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

2 Only one of QTY02 or QTY04 may be present.

Semantic Notes: Comments:

Notes:

1 QTY04 is used when the quantity is non-numeric.

There will be one QTY loop for each of the QTY03 Units of Measurement listed below that are measured on this account.

Sending values for K1, K2, and K4 is optional. The summing of these units of measure does not give a valid number and should not be used for billing. If these values are sent,

they should only be used to validate the detail PTD loops.

HI: Not Used

HU: Required for First Energy only, otherwise not used

IU: Required for FirstEnergy when BPT04 = X5, otherwise not used.

MU: Required if there are metered services on the account

QTY~QD~22348~KH

	Ref.	Data				
	Des.	Element	<u>Name</u>	_	ttributes	
M	QTY01	673	Quantity Qualifier	Ŋ	M ID 2/2	
			Code specifying the	type of quantity		
			KA	Estimated		
				Quantity is estimated		
			QD	Quantity Delivered		
				Quantity is actual		
			87	Actual Quantity Received (Net Metering)		
				Used when the net generation quantity received		
			9Н	(DP&L, FirstEnergy & Duke Energy Ohio Onl Estimated Quantity Received (Net Metering)	у)	
			711	Used when the net generation quantity received	l is estimated.	
				(DP&L, FirstEnergy & Duke Energy Ohio Onl		
M	QTY02	380	Quantity	•	X R 1/15	
			Numeric value of qu	•		
M	QTY03	C001	Composite Unit of	Measure	0	
			of use)	site unit of measure (See Figures Appendix	x for examples	
3.5	G00101	255	-	site data element, populate C00101	f ID 2/2	
M	C00101	355	Unit or Basis for M		M ID 2/2	
			Code specifying the units in which a value is being expressed, or manner in which a measurement has been taken K1 Kilowatt Demand			
			K2	kW - Represents potential power load measured at predetermined intervals. Sending K1 value is optional. Kilovolt Amperes Reactive Demand		
			K3	kVAR - Reactive power that must be supplied for specific types of customer's equipment; billable when kilowatt demand usage meets or exceeds a defined parameter. Sending K2 value is optional. Kilovolt Amperes Reactive Hour		
				kVARh - Represents actual electricity e kilowatt hours; billable when usage meets	•	

	defined parameters				
K4	Kilovolt Amperes				
	kVA - Kilovolt Amperes. Sending K4 value is optional.				
KH	Kilowatt Hour				
	kWh - Kilowatt Hours				

Segment: MEA Measurements (Readings & Time of Use)

Position: 160

Comments:

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

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

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.

Notes: The MEA segment is sent for each QTY loop. The MEA will indicate the "time of use"

that applies to the QTY. If meter readings are included in the MEA, they will indicate

the "time of use" that the meter readings apply to.

HI: Not Used

HU: Required for First Energy only, otherwise not used

IU: Required for FirstEnergy when BPT04 = X5, otherwise not used.

MU: Optional for AEP. May be sent by AEP for TOU Market Transition program

MEA~~PRQ~772~KH~~~42 MEA~~PRQ~12799~K1~~~51

	Ref.	Data		•		
	Des.	Element	<u>Name</u>		<u>Attributes</u>	
M	MEA02	738	Measurement Qua	alifier	O ID 1/3	
			Code identifying a	specific product or process characteristic	to which a	
			measurement appli	es		
			PRQ	Product Reportable Quantity		
M	MEA03	739	Measurement Val	ue	X R 1/20	
			The value of the m	easurement		
			Represents quantity of consumption delivered for service period. Contains the			
			difference in the meter readings (or as measured by the meter) multiplied by			
				cluding Power Factor.		
M	MEA04	C001	Composite Unit of		X	
			• •	osite unit of measure (See Figures Apper	ndix for examples	
3.6	G00101	255	of use)	4.6.1	N. ID 0/0	
M	C00101	355		Measurement Code	M ID 2/2	
			Code specifying the units in which a value is being expressed, or manner in			
			which a measurement has been taken			
			K1	Kilowatt Demand	1	
				kW - Represents potential power load predetermined intervals	measured at	
			K2	Kilovolt Amperes Reactive Demand		
			112	kVAR - 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	•		
			kVARh - Represents actual electricity equivalent to			
				kilowatt hours; billable when usage me	ets or exceeds	
				defined parameters		
			K4	Kilovolt Amperes		

	kVA - Kilovolt Amperes
KH	Kilowatt Hour
	kWh - Kilowatt Hour

 \mathbf{o}

ID 2/2

C MEA07 935 Measurement Significance Code

Code used to benchmark, qualify or further define a measurement value

NOTE: Other codes (as identified by UIG) can be used to identify quantities measured by the meter, but should not be used to identify tariffed/calculated measurements.

Condition: If time of use meter, this must be sent

41	Off Peak				
42	On Peak				
43	Intermediate Peak				
	Shoulder				
51	Totalizer				
	Total				
71	Low				
	(AEP Only)				
76	Medium				
	(AEP Only)				
85	High				
	(AEP Only)				
97	Maximum				
	(AEP Only)				

Segment: DTM Date/Time Reference (Service Period Start)

Position: 210
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required if sending SU loop in 867HU, otherwise not used

IU: Not Used MU: Not Used DTM~150~19990101

	Ref.	Data			
	Des.	Element	<u>Name</u>	Attı	<u>ributes</u>
\mathbf{M}	DTM01	374	Date/Time Qualifier	\mathbf{M}	ID 3/3
			Code specifying type of date or time, or both date and time 150 Service Period Start		
			Beginning Read Date		
M	DTM02	373	Date Date expressed as CCYYMMDD Date expressed as CCYYMMDD	X	DT 8/8

Segment: DTM Date/Time Reference (Service Period End)

Position: 210
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required if sending SU loop in 867HU, otherwise not used

IU: Not Used MU: Not Used DTM~151~19990131

	Ref.	Data			
	Des.	Element	<u>Name</u>	Attı	<u>ributes</u>
M	DTM01	374	Date/Time Qualifier	\mathbf{M}	ID 3/3
			Code specifying type of date or time, or both date and time 151 Service Period End		
			Ending Read Date		
M	DTM02	373	Date Date expressed as CCYYMMDD Date expressed as CCYYMMDD	X	DT 8/8

Segment: PTD Product Transfer and Resale Detail (Non-Interval Metered Services

Detail)

Position: 010

Loop: PTD Mandatory

Level: Detail
Usage: Optional

Max Use:

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

2 If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

mments: Notes:

HI: Not Used

HU: Required if there are metered services on the account. First Energy does not use, see PTD*SU loop. AEP will send separate PL loops (same meter number) for net metered customers as delivered/consumption (QTY01 = QD or KA) usage &

received/generation (QTY01 = 87 or 9H) usage

IU: Not Used

MU: Required if there are metered services on the account One PTD loop is required for

each meter and/or for each unit of measure on the account.

PTD~PL

Data Element Summary

	Kei.	Data		
	Des.	Element	<u>Name</u>	<u>Attributes</u>
M	PTD01	521	Product Transfer Type Code	\overline{M} ID $2/2$

Code identifying the type of product transfer

PL Property Level Movement/Sale

Segment: DTM Date/Time Reference (Service Period Start)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Not Used IU: Not Used

MU: Required if there are metered services on the account, unless a Meter Exchange

Date (DTM~514) is substituted for this code.

DTM~150~19990101

	Ref. <u>Des.</u>	Data <u>Element</u>	Name	Attı	ributes
\mathbf{M}	$\overline{DTM01}$	374	Date/Time Qualifier	M	ID 3/3
			Code specifying type of date or time, or both date and time		
			Service Period Start		
			Beginning Read Date		
\mathbf{M}	DTM02	373	Date	X	DT 8/8
			Date expressed as CCYYMMDD		
			Date expressed as CCYYMMDD		

Segment: DTM Date/Time Reference (Service Period End)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Not Used IU: Not Used

MU: Required if there are metered services on the account, unless a Meter Exchange

Date (DTM~514) is substituted for this code.

DTM~151~19990131

M	Ref. <u>Des.</u> DTM01	Data Element 374	Name Date/Time Qualifier	Attı M	ributes ID 3/3
			Code specifying type of date or time, or both date and time 151 Service Period End		
			Ending Read Date		
M	DTM02	373	Date	X	DT 8/8
			Date expressed as CCYYMMDD		
			Date expressed as CCYYMMDD		

Segment: DTM Date/Time Reference (Meter Exchange Date)

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Not Used IU: Not Used

MU: Required when a meter is exchanged. Date Range in the first PTD is shown as:

DTM~150~19990201 DTM~514~19990214

Date Range in the second PTD is shown as:

DTM~514~19990214 DTM~151~19990228

M	Ref. <u>Des.</u> DTM01	Data Element 374	Name Date/Time Qualifie	er		ributes ID 3/3
			•	e of date or time, or both date and time Transferred		
М	DTM03	252	Data	Meter Exchange Date	v	DT 9/9
M	DTM02	373	Date expressed as C Date expressed as C		X	DT 8/8

Position: 030

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Conditional: if Time of Use (TOU) is being sent, the REF~IX must be sent to

distinguish the different TOUs.

IU: Not Used

MU: Required for meters with dials

REF~IX~6.0~KHMON REF~IX~5.1~KHMON~TU^41 REF~IX~4.2~K1MON~TU^43

	D 0	.	Data Elei	ment Summar y		
	Ref.	Data	3 .7			•1
3.6	Des.	Element	Name	er 4 O 100		ributes
M	REF01	128	Reference Identif	_	M	ID 2/3
				ne Reference Identification		
			IX	Item Number		
				Number of dials on the meter displayed		
				notation X.Y means that the meter has X		s to the left
3.6	DEEGA	105	D. 6 11 44	of the decimal point and Y dials to the r	_	A 3.1 4 (2.0
M	REF02	127	Reference Identif		X	AN 1/30
			specified by the R	ation as defined for a particular Transaction eference Identification Qualifier	Set o	or as
			Number of Dials			
M	REF03	352	Description		X	AN 1/80
			A free-form descri	iption to clarify the related data elements ar	nd the	eir content
				Meter Type (REF~MT) on 814 Enrollment	for v	alid codes.
				a valid code for this element.		
C	REF04	C040	Reference Identif		O	
				more reference numbers or identification r	numb	ers as
			specified by the R		C040)O2
				posite data element. Populate C04001 and	C040	102.
	G0.4004	100		is a time of use meter, this must be sent	C	TD 0/2
C	C04001	128	Reference Identif		C	ID 2/3
				ne Reference Identification		
			Condition: if this i	is a time of use meter, this must be sent		
			TU	Trial Location Code		
				Time of Use		
C	C04002	127	Reference Identif	fication	\mathbf{C}	AN 1/30
			Reference informa	ation as defined for a particular Transaction	Set o	or as
				eference Identification Qualifier		
				les (as identified by UIG) can be used to id	-	-
			•	neter, but should not be used to identify tar	itted/	calculated
			measurements.	is a time of use motor this must be sent		
				is a time of use meter, this must be sent		
			41	Off Peak		

42	On Peak					
43	Intermediate Peak					
	Shoulder					
51	Totalizer					
	Total					
71	Low					
	(AEP Only)					
76	Medium					
	(AEP Only)					
85	High					
	(AEP Only)					
97	Maximum					
	(AEP Only)					

Position: 030

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes:

HI: Not Used HU: Not Used IU: Not Used

MU: Required if there are metered services on the account

REF~JH~A

M	Ref. <u>Des.</u> REF01	Data Element 128	<u>Name</u> Reference I	dentification Qualifier	Attı M	ributes ID 2/3
				ying the Reference Identification		
			JH	Tag		
				Meter Role		
M	REF02	127	Reference I	dentification	X	AN 1/30
				nformation as defined for a particular Transacti the Reference Identification Qualifier Additive	on Set o	or as
				This consumption contributed to the s nothing)	summar	ized total (do
			I	Ignore		
				This consumption did not contribute t total (do nothing)	to the su	ımmarized
			S	Subtractive		
				This consumption must be subtracted summarized total	from th	ne

 $\textbf{Segment:} \quad \textbf{REF} \ \ \textbf{Reference Identification} \ (\textbf{Meter Number})$

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Required if there are metered services on the account

IU: Not Used

MU: Required if there are metered services on the account

REF~MG~2222277S

M	Ref. <u>Des.</u> REF01	Data Element 128	<u>Name</u> Reference Id	lentification Qualifier	Attr M	ributes ID 2/3
			Code qualify	ing the Reference Identification		
			MG	Meter Number		
M	REF02	127	Reference Id	lentification	X	AN 1/30
				formation as defined for a particular I the Reference Identification Qualifier er		or as

Segment: REF Reference Identification (Meter Type)

Position: 030

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments: 1 REF04 contains data relating to the value cited in REF02.

Notes: HI: Not Used

HU: Required if there are metered services on the account

IU: Not Used

MU: Required if there are metered services on the account

REF~MT~KHMON

Data Element Summary

M	Rei. <u>Des.</u> REF01	Element 128	Name Reference Identification Qualifier		Attr M	ributes ID 2/3
				Reference Identification		
				Meter Ticket Number Meter Type		
M	REF02	127	Reference Identifica	ation	X	AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

When REF01 is MT, the meter type is expressed as a five-character field. The first two characters are the type of consumption, the last three characters are the metering interval reported by the metering agent. Valid values can be a combination of the following values:

Type of Consumption

K1 Kilowatt Demand (kW)

K2 Kilovolt Amperes Reactive Demand (kVAR)

K3 Kilovolt Amperes Reactive Hour (kVARh)

K4 Kilovolt Amperes (kVA)

KH Kilowatt Hour (kWh)

Metering Interval Reported for Billing Purposes

nnn Number of minutes from 001 to 999

ANN Annual

BIA Bi-annual

BIM Bi-monthly

DAY Daily

MON Monthly

QTR Quarterly

TOU Time of Use

For Example:

KHMON Kilowatt Hours Per Month

K1015 Kilowatt Demand per 15 minute interval

"COMBO" cannot be used in this segment.

 $Segment: \quad REF \ Reference \ Identification \ (LO=Load \ Profile)$

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

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

Comments:

Notes: HI: Not Used

HU: Required for DP&L and Duke Energy Ohio. In the event there are multiple rate classes under an account, the PTD~PL/BC will be looped for each rate class. (AEP & FE

sends in PTD~FG loop)

IU: Not UsedMU: Not UsedREF~LO~GS

Data Element Summary

Must Use	Ref. <u>Des.</u> REF01	Data Element 128	Name Reference Identifi Code qualifying the	ication Qualifier te Reference Identification	<u>X12</u> M	2 Attributes ID 2/3
			LO	Load Planning Number		
				Load profile		
Must Use	REF02	127	Reference Identif	ication	\mathbf{X}	AN 1/30
			Reference informa	tion as defined for a particular Transaction	on Set	or as

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier Segment: ${f REF}$ Reference Identification (EDU Rate Code)

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Required for DP&L and Duke Energy Ohio. In the event there are multiple rate classes under an account, the PTD~PL/BC will be looped for each rate class. (AEP & FE

sends in PTD~FG loop)

IU: Not Used

MU: Required if there are metered services on the account

REF~NH~RES

M	Ref. <u>Des.</u> REF01	Data Element 128	Name Reference Identification Qualifier		ributes ID 2/3
			Code qualifying the Reference Identification		
			NH Rate Card Number		
			EDU Rate Code or tariff		
M	REF02	127	Reference Identification	X	AN 1/30
			Reference information as defined for a particular Transa specified by the Reference Identification Qualifier	action Set o	or as
			EDU Rate Code or tariff		

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Conditional – send if there are metered services on the account and if it is stored in

the EDU system IU: Not Used

MU: Conditional – send if there are metered services on the account and if it is stored in

the EDU system REF~PR~HEAT REF~PR~WHA

M	Ref. <u>Des.</u> REF01	Data Element 128		entification Qualifier ng the Reference Identification	Attr M	ributes ID 2/3
			PR	Price Quote Number		
				EDU Rate Subclass or Revenue Class - further classification of a rate.	Used	to provide
M	REF02	127	Reference Id	entification	X	AN 1/30
				ormation as defined for a particular Transaction he Reference Identification Qualifier	Set o	or as
			EDU Rate Su	bclass or Revenue Class		

Segment: QTY Quantity

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

Only one of QTY02 or QTY04 may be present.

Semantic Notes: Comments:

Notes:

1 QTY04 is used when the quantity is non-numeric.

If a meter measures total usage, as well as on-peak and off-peak, there will be three QTY loops sent within one PTD01 = PM loop. The MEA segment that follows each QTY will reprife which time of two the OTY applies to

specify which time of use the QTY applies to.

HI: Not Used

HU: Required if there are metered services on the account. NOTE: AEP will send separate PL loops (same meter number) for net metered customers as delivered / consumption (QTY01 = QD or KA) usage & received/generation (QTY01 = 87 or 9H)

usage

IU: Not Used

MU: Required if there are metered services on the account

QTY~QD~22348~KH

	Ref. Des.	Data Element	Name	one summury	Attributes
M	$\overline{QTY01}$	673	Quantity Qualifier		M ID 2/2
			Code specifying the	type of quantity	
			KA	Estimated	
				Quantity is estimated	
			QD	Quantity Delivered	
				Quantity is actual	
			87	Actual Quantity Received (Net Metering)	
				Used when the net generation quantity received (AEP Ohio, DP&L, Duke Energy Ohio & Fi	
			9Н	Estimated Quantity Received (Net Metering	
				Used when the net generation quantity recei	
M	QTY02	380	Quantity	(AEP Ohio, DP&L, Duke Energy Ohio & Fi	rst Energy Only) X R 1/15
141	Q1102	300	Numeric value of qu	iantity	A K 1/13
M	QTY03	C001	Composite Unit of	•	0
171	Q1103	C001	•	site unit of measure (See Figures Appen	_
			of use)	site unit of measure (see Figures Appen	and for examples
			Note this is a compo	osite data element, populate C00101	
\mathbf{M}	C00101	355	Unit or Basis for M	leasurement Code	M ID 2/2
				units in which a value is being expressed	l, or manner in
			which a measuremen		
			K1	Kilowatt Demand	4. L
				kW - Represents potential power load r predetermined intervals	neasured at
			K2	Kilovolt Amperes Reactive Demand	
				kVAR - Reactive power that must be su	pplied for
				specific types of customer's equipment;	billable when
				kilowatt demand usage meets or exceed	s a defined
			К3	parameter Kilovolt Amperes Reactive Hour	
			K)		y aquiyalant to
				kVARh - Represents actual electricit kilowatt hours; billable when usage mee	
				mile water round, children when usuge mee	or o

	defined parameters
K4	Kilovolt Amperes
	kVA - Kilovolt Amperes
KH	Kilowatt Hour
	kWh - Kilowatt Hour

Segment: MEA Measurements (Readings & Time of Use)

Position: 160

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: The MEA segment is sent for each QTY loop. The MEA will indicate the "time of use"

that applies to the QTY. If meter readings are included in the MEA, they will indicate

the "time of use" that the meter readings apply to.

HI: Not Used HU: Not Used IU: Not Used

MU: Required if there are metered services on the account

MEA~AA~PRQ~772~KH~10500~11272~42 MEA~AF~PRQ~12799~K1~~12799~51

	Ref.	Data		•	
	Des.	Element	<u>Name</u>		Attributes
M	MEA01	737	Measurement Ref	erence ID Code	O ID 2/2
			Code identifying th	ne broad category to which a measurement	applies
			AA	Meter reading-beginning actual/ending	actual
			AE	Meter reading-beginning actual/ending	estimated
			AF	Actual Total	
				Recommended for demand because den only 1 reading. This code will also be use Energy Ohio if previous reading is not be for units of measure other than demand.	sed by Duke being supplied
			EA	Meter reading-beginning estimated/end	ng actual
			EE	Meter reading-beginning estimated/end	ng estimated
M	MEA02	738	Measurement Qua	alifier	O ID 1/3
			Code identifying a measurement appli PRQ	specific product or process characteristic tes Product Reportable Quantity	to which a
M	MEA03	739	Measurement Val	ue	X R 1/20
			The value of the m	easurement	
			difference in the m	y of consumption delivered for service per eter readings (or as measured by the meter cluding Power Factor.	
M	MEA04	C001	Composite Unit of	f Measure	X
			To identify a comp of use)	osite unit of measure (See Figures Appen	dix for examples
M	C00101	355	Unit or Basis for I	Measurement Code	M ID 2/2
			Code specifying the which a measurement K1	e units in which a value is being expressed ent has been taken Kilowatt Demand	l, or manner in

The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand).							
K2 Kilovolt Amperes Reactive Demand kVAR - 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 kVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes K4 Kilowatt Hour kWh - Kilowatt Hour C MEA05 740 Range Minimum X R 1/20 The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UlG) can be used to identify quantit measured by the meter, but should not be used to identify quantit measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)						ieasu	ired at
specific types of customer's equipment; billable when kilowatt demand usage meets or exceeds a defined parameter K3 Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes kVA - Kilovolt Amperes KVA - Kilovolt Amperes KWA - Kilowatt Hour kWh - Kilowatt Hour The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				K2			
Kilowatt demand usage meets or exceeds a defined parameter K3 Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes K4 Kilovolt Amperes K4 Kilowatt Hour kWh - Kilowatt Hour C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measured by the meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)					kVAR - Reactive power that must be sur	pplie	d for
K3 Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes KVA - Kilovolt Amperes KH Kilowatt Hour kWh - Kilowatt Hour KWh - Kilowatt Hour C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measuremets. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)					• • • • • • • • • • • • • • • • • • • •		
K3 Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes KVA - Kilovolt Amperes KVA - Kilowatt Hour C MEA05 740 Range Minimum X R 1/20 The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only)					_	a de	efined
RVARh - Represents actual electricity equivalent kilowatt hours; billable when usage meets or exceeds defined parameters K4				W2			
kilowatt hours; billable when usage meets or exceeds defined parameters K4 Kilovolt Amperes kVA - Kilovolt Amperes KH Kilowatt Hour kWh - Kilowatt Hour C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				K3			ivalant to
C MEA07 935 Measurement Significance Code O ID 2/2							
K4 Kilovolt Amperes KVA - Kilovolt Amperes KVA - Kilovolt Amperes KVA - Kilovolt Amperes KVA - Kilovolt Amperes KWh - Kilowatt Hour KWh - Kilowatt Hour The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)						ts or	CACCCAS
KH Kilowatt Hour kWh - Kilowatt Hour C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Total 71 Low (AEP Only) 76 Medium (AEP Only)				K4			
KWh - Kilowatt Hour C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Total 71 Low (AEP Only) 76 Medium (AEP Only)					kVA - Kilovolt Amperes		
C MEA05 740 Range Minimum The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Total 71 Low (AEP Only) 76 Medium (AEP Only)				KH	Kilowatt Hour		
The value specifying the minimum of the measurement range Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)					kWh - Kilowatt Hour		
Beginning Reading Required unless MEA01 = AF M MEA06 741 Range Maximum X R 1/20 The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)	C	MEA05	740	Range Minimum		X	R 1/20
Required unless MEA01 = AF M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				The value specifying	ng the minimum of the measurement range		
M MEA06 741 Range Maximum The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantity measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				Beginning Reading			
The value specifying the maximum of the measurement range Ending reading or single reading (demand). C MEA07 935 Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				Required unless MI	EA01 = AF		
Ending reading or single reading (demand). Measurement Significance Code O ID 2/2 Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)	\mathbf{M}	MEA06	741	Range Maximum		X	R 1/20
C MEA07 935 Measurement Significance Code Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				The value specifying	ng the maximum of the measurement range	;	
Code used to benchmark, qualify or further define a measurement value NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				Ending reading or s	single reading (demand).		
NOTE: Other codes (as identified by UIG) can be used to identify quantit measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)	C	MEA07	935	Measurement Sign	nificance Code	О	ID 2/2
measured by the meter, but should not be used to identify tariffed/calculate measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				Code used to bench	mark, qualify or further define a measurer	nent	value
measurements. Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)							
Condition: If time of use meter, this must be sent 41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)				-	eter, but should not be used to identify tari	ffed/	calculated
41 Off Peak 42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)					of use mater, this must be sent		
42 On Peak 43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)							
43 Intermediate Peak Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)							
Shoulder 51 Totalizer Total 71 Low (AEP Only) 76 Medium (AEP Only)							
Totalizer Total Total Low (AEP Only) Medium (AEP Only)				43			
Total Total Low (AEP Only) Medium (AEP Only)				51			
71 Low (AEP Only) 76 Medium (AEP Only)				J1			
(AEP Only) 76 Medium (AEP Only)				71			
76 Medium (AEP Only)				/ 1			
(AEP Only)				76			
				/0			
or High				05			
				63	_		
S / IVIX X IIIIIII					(AEP Only)		
(AEP Only)				97	(AEP Only) Maximum		

Segment: MEA Measurements (Meter Multiplier)

Position: 160

Dαf

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: If no meter multiplier, then populate with "1"

HI: Not Used HU: Not Used IU: Not Used

MU: Required if there are metered services on the account

MEA~~MU~1

Data

Data Element Summary

	Kei.	Data			
	Des.	Element	<u>Name</u>		<u>Attributes</u>
M	$\overline{\text{MEA}}02$	738	Measurement Qualifier	¢.	O ID 1/3
			Code identifying a specimeasurement applies	fic product or process characteristic to	o which a
			MU Mu	ıltiplier	
			Me	ter Multiplier	
			(En	nding Reading - Beginning Reading)	* Meter
			Mu	ıltiplier = Billed Usage	
M	MEA03	739	Measurement Value		X R 1/20
			TD1 1 C.1	,	

The value of the measurement

Meter Multiplier

Segment: MEA Measurements (Power Factor)

Position: 160

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: HI: Not Used

HU: Not Used IU: Not Used

MU: Required if there are metered services on the account and it is available

MEA~~ZA~.95

	Ref.	Data		
	Des.	Element	<u>Name</u>	<u>Attributes</u>
M	$\overline{\text{MEA}02}$	738	Measurement Qualifier	O ID 1/3
			Code identifying a specific produmeasurement applies	ct or process characteristic to which a
			ZA Power Factor	Or .
			-	b between watts and volt - amperes supply electric load
M	MEA03	739	Measurement Value	X R 1/20
			The value of the measurement	
			Power Factor	

Segment: MEA Measurements (Transformer Loss Factor)

Position: 160

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.
3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: HI: Not Used

HU: Not Used IU: Not Used

MU: Required if there are metered services on the account and the transformer loss is not

measured by the meter MEA~~CO~1.02

M	Ref. <u>Des.</u> MEA02	Data Element 738	Name Measurement Qual	lifier	Attı O	ributes ID 1/3
			Code identifying a s measurement applie CO	pecific product or process characteristic t s Core Loss Transformer Loss Factor	o wh	ich a
M	MEA03	739	Measurement Value The value of the mea	le	X	R 1/20
			Transformer Loss Fa	actor		

Segment: DTM Date/Time Reference

Position: 210

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required if there are metered services on the account

IU: Not Used MU: Not Used DTM~150~19990219

Data Element Summary

М	Ref. <u>Des.</u> DTM01	Data Element 374	Name Date/Time Qualific	er	Attr M	ributes ID 3/3
		2,1	•	be of date or time, or both date and time Service Period Start		
M	DTM02	373	Date	Beginning Read Date	X	DT 8/8
141	D1W102	373	Date expressed as C		A	D1 0/0

February 28, 2019

Segment: DTM Date/Time Reference

Position: 210

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required if there are metered services on the account

IU: Not Used MU: Not Used DTM~151~19990322

	Ref. <u>Des.</u>	Data <u>Element</u>	<u>Name</u>		Attr	<u>ributes</u>
M	DTM01	374	Date/Time Qualific	er	M	ID 3/3
			Code specifying typ	be of date or time, or both date and time		
			151	Service Period End		
				Ending Read Date		
M	DTM02	373	Date		X	DT 8/8
			Date expressed as C	CCYYMMDD		
			Date expressed as C	CCYYMMDD		

Segment: PTD Product Transfer and Resale Detail (Interval Meter Services Summary)

Position: 010

Loop: PTD Optional

Level: Detail
Usage: Optional

Max Use:

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

2 If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

 \mathbf{M}

Notes: HI: Duke Energy Ohio may send the PTD~BO loop on 867HIU transactions, otherwise

not used HU: Not Used

IU: Required, First Energy does not use when BPT04 = X5. Note for IU: If EDU is reporting separate on/off peak PTD~BO loops, only one PTD~PM loop should be sent.

MU: Not Used

One PTD loop is required for each meter or for each unit of measure on the account.

PTD~BO

Data Element Summary

Ref. DataDes. ElementNameAttributesPTD01521Product Transfer Type CodeM ID 2/2

Code identifying the type of product transfer BO Designated Items

Provides Summary information for each interval meter

or unit of measure.

 $Segment: \qquad DTM \ \ Date/Time \ Reference \ (Service \ Period \ Start)$

Position: 020

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

HI: Not Used HU: Not Used IU: Required MU: Not Used DTM~150~19990101

	Ref.	Data					
	Des.	Element	<u>Name</u>		Attr	<u>ributes</u>	
\mathbf{M}	DTM01	374	Date/Time Qualific	er	M	ID 3/3	
			Code specifying typ	be of date or time, or both date and time			
			150	Service Period Start			
				Beginning Read Date			
\mathbf{M}	DTM02	373	Date		X	DT 8/8	
			Date expressed as C				
			Date expressed CCYYMMDD				

Position: 020

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Not Used
IU: Required
MU: Not Used
DTM~151~19990131

M	Ref. <u>Des.</u> DTM01	Data Element 374	<u>Name</u> Date/Time Qualific	er	Attr M	ributes ID 3/3
			Code specifying typ 151	be of date or time, or both date and time Service Period End		
				Beginning Read Date		
M	DTM02	373	Date		X	DT 8/8
			Date expressed as C	CCYYMMDD		
			Date expressed as C	CCYYMMDD		

Position: 030

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Not Used IU: Required MU: Not Used

REF~IX~6.0~KHMON

REF~IX~4.2~K1MON~TU^43

			Data Element Summary	
	Ref.	Data		
	Des.	Element	<u>Name</u>	<u>Attributes</u>
M	REF01	128	Reference Identification Qualifier	M ID 2/3
			Code qualifying the Reference Identification	
			IX Item Number	
			Number of dials on the meter displayed notation X.Y means that the meter has	s X dials to the left
3.6	DEE03	105	of the decimal point and Y dials to the	
M	REF02	127	Reference Identification	X AN 1/30
			Reference information as defined for a particular Transacti specified by the Reference Identification Qualifier Number of Dials	on Set or as
M	REF03	352	Description	X AN 1/80
	1121 00		A free-form description to clarify the related data elements	
			Meter Type. See Meter Type (REF~MT) on 814 Enrollme	
			"COMBO" is not a valid code for this element.	in for varia codes.
\mathbf{C}	REF04	C040	Reference Identifier	0
			To identify one or more reference numbers or identification	numbers as
			specified by the Reference Qualifier	
			Note this is a composite data element. Populate C04001 ar	nd C04002.
			Condition: if this is a time of use meter, this must be sent	
C	C04001	128	Reference Identification Qualifier	C ID 2/3
			Code qualifying the Reference Identification	
			Condition: if this is a time of use meter, this must be sent	
			TU Trial Location Code	
			Time of Use	
C	C04002	127	Reference Identification	C AN 1/30
			Reference information as defined for a particular Transacti specified by the Reference Identification Qualifier	on Set or as
			Condition: if this is a time of use meter, this must be sent	
			41 Off Peak	
			42 On Peak	
			43 Intermediate Peak	
			Shoulder	
			51 Totalizer	
			Total	
OUIO947	7 (004010) V2 6 5		61	Fabruary 28, 2010

Position: 030

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Not Used IU: Required MU: Not Used REF~JH~A

M	Ref. <u>Des.</u> REF01	Data Element 128	<u>Name</u> Reference Ide	entification Qualifier	Attributes M ID 2/3		
			Code qualifying	ng the Reference Identification			
			JH	Tag			
				Meter Role			
\mathbf{M}	REF02	127	Reference Ide	entification	X AN 1/30		
				Reference information as defined for a particular Transaction Set or a specified by the Reference Identification Qualifier A Additive			
				This consumption contributed to the (do nothing)	summarized total		
			I	Ignore			
				This consumption did not contribute total (do nothing)	to the summarized		
			S	Subtractive			
				This consumption must be subtracted summarized total	d from the		

 $\textbf{Segment:} \quad \textbf{REF} \ \ \textbf{Reference Identification} \ (\textbf{Meter Number})$

Position: 030

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

Notes:

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

Meter numbers will contain only uppercase letters (A to Z) and digits (0 to 9). Note that punctuation (spaces, dashes, etc.) must be excluded, and significant leading and trailing

zeros that are part of the meter number must be present.

HI: Not Used HU: Not Used IU: Required MU: Not Used REF~MG~2222277S

M	Ref. <u>Des.</u> REF01	Data Element 128	<u>Name</u> Reference I	Identification Qualifier	Attı M	ributes ID 2/3
			Code qualify	ying the Reference Identification		
			MG	Meter Number		
M	REF02	127	Reference I	Identification	X	AN 1/30
				nformation as defined for a particular Transaction the Reference Identification Qualifier	on Set o	or as
			Meter Numb	ber		

Segment: REF Reference Identification (Meter Type)

Position: 030

Loop: PTD Optional

Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Not Used
IU: Required
MU: Not Used
REF~MT~KHMON

Data Element Summary

M	Ref. <u>Des.</u> REF01	Data Element 128	Name Reference Iden	ntification Qualifier	Attı M	ributes ID 2/3
			Code qualifying	g the Reference Identification		
			MT	Meter Ticket Number		
				Meter Type		
M	REF02	127	Reference Idea	ntification	X	AN 1/30

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

When REF01 is MT, the meter type is expressed as a five-character field. The first two characters are the type of consumption, the last three characters are the metering interval reported by the metering agent. Valid values can be a combination of the following values:

Type of Consumption

K1 Kilowatt Demand (kW)

K2 Kilovolt Amperes Reactive Demand (kVAR)

K3 Kilovolt Amperes Reactive Hour (kVARh)

K4 Kilovolt Amperes (kVA)

KH Kilowatt Hour (kWh)

Metering Interval Reported for Billing Purposes

nnn Number of minutes from 001 to 999

ANN Annual

BIA Bi-annual

BIM Bi-monthly

DAY Daily

MON Monthly

QTR Quarterly

TOU Time of Use

For Example:

KHMON Kilowatt Hours Per Month

K1015 Kilowatt Demand per 15 minute interval

"COMBO" cannot be used in this segment.

Segment: QTY Quantity

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

Only one of QTY02 or QTY04 may be present.QTY04 is used when the quantity is non-numeric.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Not Used IU: Required MU: Not Used QTY~QD~22348~KH

	Ref.	Data			
	Des.	Element	Name		Attributes
M	QTY01	673	Quantity Qualifier		M ID 2/2
			Code specifying the		
			KA	Estimated	
				Quantity is estimated	
			QD	Quantity Delivered	
				Quantity is actual	
			87	Actual Quantity Received (Net Metering) Used when the net generation quantity receiv (DP&L, Duke Energy Ohio Only)	ved is actual.
			9Н	Estimated Quantity Received (Net Metering) Used when the net generation quantity received (DP&L, Duke Energy Ohio Only)	
M	QTY02	380	Quantity	(,	X R 1/15
			Numeric value of qu	antity	
M	QTY03	C001	Composite Unit of	Measure	0
			of use)	site unit of measure (See Figures Append	dix for examples
	G00101		-	osite data element, populate C00101	
M	C00101	355	Unit or Basis for M		M ID 2/2
				units in which a value is being expressed	, or manner in
			which a measurement K1	nt has been taken Kilowatt Demand	
			IXI	kW - Represents potential power load n	neacured at
				predetermined intervals	icasured at
			K2	Kilovolt Amperes Reactive Demand	
				kVAR - Reactive power that must be sur specific types of customer's equipment; kilowatt demand usage meets or exceeds parameter	billable when
			K3	Kilovolt Amperes Reactive Hour	
				kVARh - Represents actual electricity kilowatt hours; billable when usage mee defined parameters	
			K4	Kilovolt Amperes	
				kVA - Kilovolt Amperes	
			1/11	TZ'I W TT	
			KH	Kilowatt Hour	
			ΚП	kWh - Kilowatt Hour	

 $\textbf{Segment:} \quad \textbf{MEA} \;\; \textbf{Measurements} \; (\textbf{Meter Reads})$

Position: 160

Comments:

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

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

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.

Notes: HI: Not Used

HU: Not Used

IU: Conditional: Send if interval meter has associated monthly begin/end readings.

MU: Not Used

MEA~AF~~~KH~02500~04000~51

	Data Element Summary						
	Ref. Des.	Data Element	Name		Attributes		
M	MEA01	737	Measurement Refe	erence ID Code	O ID 2/2		
			Code identifying the	e broad category to which a measurement	applies		
			AA	Meter reading-beginning actual/ending	actual		
			AE	Meter reading-beginning actual/ending	estimated		
			AF	Actual Total			
			E4	Recommended for demand because denonly 1 reading. This code will also be a Energy Ohio if previous reading is not be for units of measure other than demand.	used by Duke being supplied		
			EA	Meter reading-beginning estimated/end	•		
			EE	Meter reading-beginning estimated/end	ing estimated		
M	MEA04	C001	Composite Unit of	Measure	X		
			To identify a composition of use)	osite unit of measure (See Figures Appen	dix for examples		
\mathbf{M}	C00101	355	Unit or Basis for M	Ieasurement Code	M ID 2/2		
			Code specifying the which a measureme K1	e units in which a value is being expressed ont has been taken Kilowatt Demand	l, or manner in		
			KI	kW - Represents potential power load in predetermined intervals	measured at		
			K2	Kilovolt Amperes Reactive Demand			
				kVAR - Reactive power that must be su specific types of customer's equipment; kilowatt demand usage meets or exceed parameter	billable when		
			K3	Kilovolt Amperes Reactive Hour			
				kVARh - Represents actual electricit kilowatt hours; billable when usage med defined parameters			
			K4	Kilovolt Amperes			

			КН	kVA - Kilovolt Amperes Kilowatt Hour kWh - Kilowatt Hour		
C	MEA05	740	Range Minimum		X	R 1/20
			The value specifying the minimum of the measurement range			
			Beginning Reading if applicable			
			Condition: Require	d unless MEA01 = "AF"		
M	MEA06	741	Range Maximum		X	R 1/20
			The value specifying the maximum of the measurement range			
			Ending reading or si	ingle reading		

Segment: MEA Measurements (Meter Multiplier)

Position: 160

Dαf

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: If no meter multiplier, then populate with "1".

HI: Not Used HU: Not Used IU: Required MU: Not Used MEA~~MU~1

Data

Data Element Summary

	Kei.	Data		
	Des.	Element	<u>Name</u>	<u>Attributes</u>
\mathbf{M}	MEA ₀₂	738	Measurement Qualifier	\overline{O} ID $1/3$
			Code identifying a specific produc	t or process characteristic to which a
			measurement applies	
			MU Multiplier	
			Meter Multip	lier
			(Ending Read	ling - Beginning Reading) * Meter
			Multiplier =	
\mathbf{M}	MEA03	739	Measurement Value	X R 1/20

The value of the measurement

Meter Multiplier

Segment: MEA Measurements (Power Factor)

Position: 160

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: HI: Not Used

HU: Not Used

IU: Required if available

MU: Not Used MEA~~ZA~.95

M	Ref. <u>Des.</u> MEA02	Data Element 738	Name Measurement Qua	v slifier	Attributes O ID 1/3
141	1112/102	750	-		
				specific product or process characteristic	to wnich a
			measurement applie	es	
			ZA	Power Factor	
				Relationship between watts and volt - a	amperes
				necessary to supply electric load	
\mathbf{M}	MEA03	739	Measurement Value	ue	X R 1/20
			The value of the me	easurement	
			Power Factor		

Segment: MEA Measurements (Transformer Loss Factor)

Position: 160

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 40

Purpose: To specify physical measurements or counts, including dimensions, tolerances, variances,

and weights (See Figures Appendix for example of use of C001)

Syntax Notes: 1 At least one of MEA03 MEA05 MEA06 or MEA08 is required.

2 If MEA05 is present, then MEA04 is required.3 If MEA06 is present, then MEA04 is required.

4 If MEA07 is present, then at least one of MEA03 MEA05 or MEA06 is required.

5 Only one of MEA08 or MEA03 may be present.

Semantic Notes: 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.

Notes: HI: Not Used

HU: Not Used

IU: Required when the transformer loss is not measured by the meter

MU: Not Used MEA~~CO~1.02

	Ref.	Data				
	Des.	Element	<u>Name</u>		<u>Attr</u>	<u>ibutes</u>
M	MEA02	738	Measurement Qual	lifier	O	ID 1/3
			Code identifying a s measurement applie CO	pecific product or process characteristic t s Core Loss	o whi	ich a
				Transformer Loss Factor		
M	MEA03	739	Measurement Valu	ie	X	R 1/20
			The value of the me	asurement		
			Transformer Loss Fa	actor		

Segment: PTD Product Transfer and Resale Detail (Interval Meter Services Detail)

Position: 010

Loop: PTD Mandatory

Level: Detail Usage: Mandatory

Max Use: 1

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Required

HU: Not Used

IU: Required if the CRES requests detail interval information on the Enrollment or Change. One PTD loop is required for each meter and/or each unit of measure on the

account.

Note for IU: If EDU is reporting separate on/off peak PTD~BO loops, only one PTD~PM loop should be sent. PTD~PM loop is optional when BPT01 = 01 (867IU

Cancel)

MU: Not Used. PTD~PM

Data Element Summary

Ref. Data

Des. Element Name

M PTD01 521 Product Transfer Type Code

M ID 2/2

Code identifying the type of product transfer

PM Physical Meter Information

Provides detail information for each interval meter or unit of measure.

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes:

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

Comments: Notes:

HI: Required HU: Not Used IU: Required MU: Not Used REF~MG~2222277S

Ref.	Data	·		
Des.	Element	<u>Name</u>	Attr	<u>ributes</u>
REF01	128	Reference Identification Qualifier	\mathbf{M}	ID 2/3
		Code qualifying the Reference Identification		
DEE02	127		v	AN 1/30
KET 02	147		Λ	: -,
		Reference information as defined for a particular Transaction	Set of	or as
		specified by the Reference Identification Qualifier		
		Meter Number		
	Des.	Des. Element REF01 128	Des. Element Name Reference Identification Qualifier Code qualifying the Reference Identification MG Meter Number	Des. Element Name Attraction Attra

Segment: QTY Quantity

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

Only one of QTY02 or QTY04 may be present. QTY04 is used when the quantity is non-numeric.

Semantic Notes: Comments:

Notes: HI: Required

HU: Not Used

IU: Required if CRES requests detail interval information on the Enrollment or Change

MU: Not Used QTY~QD~22348

	Ref.	Data			
	Des.	Element	<u>Name</u>		Attributes
M	QTY01	673	Quantity Qualifier		M ID 2/2
			Code specifying the	**	
			KA	Estimated	
				Quantity is estimated	
			QD	Quantity Delivered	
				Quantity is actual	
			20	Unavailable	
				Used when meter data is not available to intervals FirstEnergy only	fill the
			87	Actual Quantity Received (Net Metering	()
				Used when the net generation quantity reactual. (DP&L, FirstEnergy & Duke Energy)	
			9Н	Estimated Quantity Received (Net Mete	
			,	Used when the net generation quantity re	
				estimated. (DP&L, FirstEnergy & Duke	Energy Ohio
3.6	0.000	200	0 44	Only)	T D 1/1 F
M	QTY02	380	Quantity		X R 1/15
3.6	0.000	G001	Numeric value of qu	•	
M	QTY03	C001	Composite Unit of		0
				site unit of measure (See Appendix for ex	camples of use)
3.6	000101	255	_	site data element, populate C00101	N. TD 2/2
M	C00101	355	Unit or Basis for M		M ID 2/2
			which a measurement	units in which a value is being expressed,	or manner in
			K1	Kilowatt Demand	
				kW - Represents potential power load m	easured at
				predetermined intervals	
			K2	Kilovolt Amperes Reactive Demand	
			K2	kVAR - Reactive power that must be sup	
			K2	kVAR - Reactive power that must be supspecific types of customer's equipment; l	oillable when
			K2	kVAR - Reactive power that must be sup- specific types of customer's equipment; I kilowatt demand usage meets or exceeds	oillable when
			K2 K3	kVAR - Reactive power that must be supspecific types of customer's equipment; l	oillable when
				kVAR - Reactive power that must be sup specific types of customer's equipment; l kilowatt demand usage meets or exceeds parameter	oillable when a defined
				kVAR - Reactive power that must be sup specific types of customer's equipment; l kilowatt demand usage meets or exceeds parameter Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity ec kilowatt hours; billable when usage meet	oillable when a defined uivalent to
				kVAR - Reactive power that must be supprecific types of customer's equipment; leading with the kilowatt demand usage meets or exceeds parameter Kilovolt Amperes Reactive Hour kVARh - Represents actual electricity ex	oillable when a defined uivalent to

kVA - Kilovolt Amperes

KH Kilowatt Hour

kWh - Kilowatt Hour

 $DTM \ \ \text{Date/Time Reference (Interval End Time)}$ **Segment:**

Position: 210

> Loop: QTY Optional

Level: Detail Usage: Optional Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: At least one of DTM02 DTM03 or DTM05 is required.

If DTM04 is present, then DTM03 is required.

If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Required

HU: Not Used

IU: Required if the CRES requests detail interval information on the Enrollment or

Change

MU: Not Used

DTM~194~19990115~1500~ET DTM~194~19990115~1500~ES DTM~194~19990629~2315~ED

	Ref. <u>Des.</u>	Data <u>Element</u>	Name	<i>-</i>	Att	<u>ributes</u>
M	DTM01	374	Date/Time Qualifi	ier	M	ID 3/3
			Code specifying ty	pe of date or time, or both date and time		
			194	Period End		
				The date/time of the end of the interval		
M	DTM02	373	Date		X	DT 8/8
			Date expressed as 0	CCYYMMDD		
M	DTM03	337	Time		X	TM 4/8
			HHMMSSD, or HI 59), S = integer sec are expressed as for HHMM, where H = For this transaction to indicate midnigh October 16th will b	24-hour clock time as follows: HHMM, of HMMSSDD, where H = hours (00-23), Monds (00-59) and DD = decimal seconds; llows: D = tenths (0-9) and DD = hundred = Hours and M = Minutes in Eastern Preval, since X12 does not allow 2400 for time. It. For example, midnight between October reflected as 2359 of October 15th.	l = mi decir dths (tailing 2359	nutes (00- mal seconds 00-99) Time (ET).
M	DTM04	623	Organization stands in hours in relation	ne time. In accordance with International stard 8601, time can be specified by a + or to Universal Time Coordinate (UTC) time, + and - are substituted by P and M in the Eastern Daylight Time (Duke Energy Conly) Eastern Standard Time (Duke Energy Conly) Eastern Time	- and le; sin e code OH an	an indication ce + is a es that follow d FirstEnergy

 $\begin{tabular}{ll} \bf PTD & \bf Product \ Transfer \ and \ Resale \ Detail \ (Unmetered \ Services) \\ \end{tabular}$

Position: 010

Loop: PTD Mandatory

Level: Detail Usage: Mandatory

Max Use: 1

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

2 If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

Ref.

M

Notes: HI: Not Used

HU: Conditional – at least one of the PTD~BC loop must be sent if there are unmetered

services on the account

IU: Not Used

MU: Conditional – at least one of the PTD~BC loop must be sent if there are unmetered

services on the account

PTD~BC

Data

Data Element Summary

Des.ElementNameAttributesPTD01521Product Transfer Type CodeM ID 2/2

Code identifying the type of product transfer BC Issue - Other Agency

Unmetered Services Summary

 $Segment: \qquad \pmb{DTM} \ \ Date/Time \ Reference \ (Service \ Period \ Start)$

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Conditional – at least one set of DTMs (DTM~150 and DTM~151) must be sent in

position 020 and/or 210

IU: Not Used

MU: Required if there are unmetered service on the account

DTM~150~19990101

M	Ref. <u>Des.</u> DTM01	Data Element 374	<u>Name</u> Date/Time Qualifier	At M	tributes ID 3/3
			Code specifying type of date of 150 Service I	or time, or both date and time Period Start	
M	DTM02	373	Date Date expressed as CCYYMM.	X DD	DT 8/8
			Date expressed as CCYYMM		

Position: 020

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Conditional – at least one set of DTMs (DTM~150 and DTM~151) must be sent in

position 020 and/or 210

IU: Not Used

MU: Required if there are unmetered service on the account

DTM~151~19990131

M	Ref. <u>Des.</u> DTM01	Data Element 374	<u>Name</u> Date/Time Qualifier		Attr M	ibutes ID 3/3
				date or time, or both date and time vice Period End		
M	DTM02	373	Date Date expressed as CCYY	YMMDD	X	DT 8/8
			Date expressed as CCYY	YMMDD		

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

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

Comments:

Notes: HI: Not Used

HU: Required for DP&L and Duke Energy Ohio. In the event there are multiple rate classes under an account, the PTD~PL/BC will be looped for each rate class. (AEP & FE

sends in PTD~FG loop)

IU: Not Used MU: Not Used REF~LO~GS

Must Use	Ref. <u>Des.</u> REF01	Data <u>Element</u> 128		dentification Qualifier using the Reference Identification	<u>X12</u> M	2 Attributes ID 2/3
			LO	Load Planning Number		
				Load profile		
Must Use	REF02	127	Reference I	dentification	\mathbf{X}	AN 1/30
			Reference in	nformation as defined for a particular Transaction	n Set	or as
			specified by	the Reference Identification Qualifier		

Segment: ${f REF}$ Reference Identification (EDU Rate Code)

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Required for DP&L and Duke Energy Ohio. In the event there are multiple rate classes under an account, the PTD~PL/BC will be looped for each rate class. (AEP & FE

sends in PTD~FG loop)

IU: Not Used

MU: Required if there are metered services on the account

REF~NH~RES

	Ref. Des.	Data Element	Name	Affr	ributes
M	REF01	128	Reference Identification Qualifier	M	ID 2/3
			Code qualifying the Reference Identification		
			NH Rate Card Number		
			EDU Rate Code or tariff		
M	REF02	127	Reference Identification	X	AN 1/30
			Reference information as defined for a particular Transact specified by the Reference Identification Qualifier	ion Set o	or as
			EDU Rate Code or tariff		

Position: 030

Loop: PTD Mandatory

Level: Detail Usage: Optional

Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

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

Notes: HI: Not Used

HU: Conditional – send if there are metered services on the account and if it is stored in

the EDU system IU: Not Used

MU: Conditional – send if there are metered services on the account and if it is stored in

the EDU system REF~PR~HEAT REF~PR~WHA

M	Ref. <u>Des.</u> REF01	Data Element 128		dentification Qualifier ying the Reference Identification	Attı M	ributes ID 2/3
			PR	Price Quote Number		
				EDU Rate Subclass or Revenue Class - further classification of a rate.	Used	to provide
M	REF02	127	Reference I	dentification	X	AN 1/30
				formation as defined for a particular Transaction the Reference Identification Qualifier	Set o	or as
			EDU Rate S	ubclass or Revenue Class		

 ${f REF}$ Reference Identification (Product Type) **Segment:**

Position: 030

> Loop: PTD Mandatory

Level: Detail Usage: Optional Max Use: 20

Purpose: To specify identifying information

Syntax Notes: At least one of REF02 or REF03 is required.

> If either C04003 or C04004 is present, then the other is required. If either C04005 or C04006 is present, then the other is required. 3

Semantic Notes: Comments: REF04 contains data relating to the value cited in REF02.

Notes: HI: Not Used HU: Required

IU: Not Used

MU: Required if there are unmetered service on the account

REF~PRT~LIGHT

Data Element Summary

M	Des. REF01	Element 128	<u>Name</u> Reference Identific	ation Qualifier	Attr M	ributes ID 2/3
			Code qualifying the	Reference Identification		
			PRT	Product Type		
				EDU Defined Unmetered Service Type		
M	REF02	127	Reference Identific	ation	X	AN 1/30
			Reference information	on as defined for a particular Transaction	Set o	or as

specified by the Reference Identification Qualifier

This describes the type of device that this measurement loop references (for instance, a specific wattage of an outdoor light). The valid codes will be defined on each EDU Web Site.

Segment: QTY Quantity

Position: 110

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

Only one of QTY02 or QTY04 may be present.QTY04 is used when the quantity is non-numeric.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Required IU: Not Used

MU: Required if there are unmetered service on the account

QTY~QD~22348~KH

	Ref.	Data	Duta Living	Summer y		
	Des.	Element	Name		Attr	ibutes
M	$\overline{\text{QTY01}}$	673	Quantity Qualifier		M	ID 2/2
			Code specifying the	type of quantity		
			QD	Quantity Delivered		
				Quantity is actual		
				Whether unmetered services are estimated or actual, they will be coded as actual.	ed, ca	alculated,
M	QTY02	380	Quantity		X	R 1/15
			Numeric value of qu	antity		
			This represents the c	consumption quantity per device		
M	QTY03	C001	Composite Unit of 	Measure	O	
			To identify a compo of use)	site unit of measure (See Figures Append	lix fo	or examples
			Note this is a compo	osite data element, populate C00101		
M	C00101	355	Unit or Basis for M	leasurement Code	M	ID 2/2
			Code specifying the which a measurement EA	units in which a value is being expressed nt has been taken Each	, or m	nanner in
				Ea		
			KH	Kilowatt Hour		
				kWh		

Segment: DTM Date/Time Reference

Position: 210

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Conditional – at least one set of DTMs (DTM~150 and DTM~151) must be sent in

position 020 and/or 210

IU: Not Used MU: Not Used DTM~150~19990219

	Ref.	Data			
	Des.	Element	<u>Name</u>	<u>Attr</u>	<u>ributes</u>
\mathbf{M}	DTM01	374	Date/Time Qualifier	\mathbf{M}	ID 3/3
			Code specifying type of date or time	e, or both date and time	
			150 Service Period	Start	
			Beginning Rea	d Date	
\mathbf{M}	DTM02	373	Date	X	DT 8/8
			Date expressed as CCYYMMDD		
			Date expressed as CCYYMMDD		

Segment: DTM Date/Time Reference

Position: 210

Loop: QTY Optional

Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Not Used

HU: Conditional – at least one set of DTMs (DTM~150 and DTM~151) must be sent in

position 020 and/or 210

IU: Not Used MU: Not Used DTM~151~19990322

	Ref.	Data			
	Des.	Element	<u>Name</u>	<u>Att</u>	<u>ributes</u>
\mathbf{M}	DTM01	374	Date/Time Qualifier	M	ID 3/3
			Code specifying type of date or	time, or both date and time	
			151 Service Pe	eriod End	
			Ending Re	ead Date	
\mathbf{M}	DTM02	373	Date	X	DT 8/8
			Date expressed as CCYYMMD	OD	
			Date expressed as CCYYMMD	D .	

 $\textbf{Segment:} \quad \textbf{PTD} \text{ Product Transfer and Resale Detail (FG=Scheduling Determinants)}$

Position: 010
Loop: PTD
Level: Detail
Usage: Mandatory

Max Use: 1

Purpose: To indicate the start of detail information relating to the transfer/resale of a product and

provide identifying data

Syntax Notes: 1 If either PTD02 or PTD03 is present, then the other is required.

If either PTD04 or PTD05 is present, then the other is required.

Semantic Notes: Comments:

Notes: HI: Required for PJM Customers; otherwise not used

HU: Required for PJM Customers; otherwise not used

IU: Not Used MU: Not Used

This PTD Loop will be used to provide Scheduling Determinants, such as the Capacity Contribution (a.k.a. Load Responsibility) and Transmission Contribution for PJM

customers.

Examples: PTD*FG

Data Element Summary

Ref. Data

Code identifying the type of product transfer

FG Flowing Gas Information
Scheduling Determinants: This loop will provide

information required by PJM.

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

2 If either C04003 or C04004 is present, then the other is required.

3 If either C04005 or C04006 is present, then the other is required.
 1 REF04 contains data relating to the value cited in REF02.

Semantic Notes: Comments:

Notes: HI: Required

HU: Required IU: Not Used MU: Not Used REF~BF~15

Must Use	Ref. <u>Des.</u> REF01	Data Element 128		dentification Qualifier ring the Reference Identification	Att M	ributes ID 2/3
Must Use	REF02	127	BF Reference In	LDC Bill Cycle dentification formation as defined for a particular Transaction the Reference Identification Qualifier	X on Set	AN 1/30 or as

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

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

Comments:

Notes: HI: Required for AEP Ohio when net meter is present on an account (will be required

if/when FirstEnergy implements HI)

HU: Required for AEP Ohio & First Energy when net meter is present on an account

IU: Not Used MU: Not Used

REF~KY~NETMETER

	Ref.	Data				
	Des.	Element	<u>Name</u>		X12	2 Attributes
Must Use	REF01	128	Reference Identi	fication Qualifier	\mathbf{M}	ID 2/3
			Code qualifying the	he Reference Identification		
			KY	Site Specific Procedures, Terms, and C	Condi	tions
				Special Meter Configuration		
Must Use	REF02	127	Reference Identi	fication	\mathbf{X}	AN 1/30
				ation as defined for a particular Transaction deference Identification Qualifier	n Set	or as
			NETMETER	Net metering present		

Segment: ${\bf REF}$ Reference Identification (LO=Load Profile)

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
 If either C04005 or C04006 is present, then the other is required.

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

Comments:

Notes: HI: Required if available

HU: Required for AEP and First Energy (DP&L and Duke send in PTD~PL/BC loops)

IU: Not Used MU: Not Used REF~LO~GS

Data Element Summary

Must Use	Ref. <u>Des.</u> REF01	Data Element 128		ntification Qualifier g the Reference Identification	<u>X1</u> 2	2 Attributes ID 2/3
			LO	Load Planning Number Load profile		
Must Use	REF02	127	Reference Ide	ntification rmation as defined for a particular Transact	X tion Set	AN 1/30

Reference information as defined for a particular Transaction Set or a specified by the Reference Identification Qualifier

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.
REF04 contains data relating to the value cited in REF02.

Semantic Notes: Comments:

Notes: HI: Required

HU: Required for AEP and First Energy (DP&L and Duke send in PTD~PL/BC loops)

IU: Not Used MU: Not Used REF~NH~GS1

	Ref.	Data Florant	Nama	·	A 44	uibutaa
Must Use	<u>Des.</u> REF01	Element 128	Name Poforonco I	dentification Qualifier	M	ributes ID 2/3
Wiust Use	KEFUI	120		ring the Reference Identification	IVI	11) 2/3
			NH	LDC Rate Code		
Must Use	REF02	127	Reference I	dentification	\mathbf{X}	AN 1/30
				formation as defined for a particular Transaction the Reference Identification Qualifier	on Set	or as

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

2 If either C04003 or C04004 is present, then the other is required.
3 If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

Notes:

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

HI: Required for First Energy companies (if/when HI supported) & AEP Ohio; optional

for DP&L and Duke Energy Ohio

HU: Required for First Energy companies & AEP Ohio; optional for DP&L and Duke

Energy Ohio IU: Not Used

MU: Not Used REF~LF~2

Must Use	Ref. <u>Des.</u> REF01	Data <u>Element</u> 128		Identification Qualifier g the Reference Identification	<u>X12</u> M	2 Attributes ID 2/3
			LF	Load Planning Number Loss Factor		
Must Use	REF02	127		Identification rmation as defined for a particular Transaction Set or as spe Qualifier	X cified b	AN 1/30 by the Reference

Segment: REF Reference Identification (PR = EDU Rate Subclass)

Position: 030

Loop: PTD Mandatory

Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
 If either C04005 or C04006 is present, then the other is required.

REF04 contains data relating to the value cited in REF02.

Semantic Notes: Comments:

Notes: HI: Conditional – send if there are metered services on the account if it is stored in the

EDU system

HU: Conditional – send if there are metered services on the account and if it is stored in

the EDU system
IU: Not Used
MU: Not Used
REF~PR~HEAT
REF~PR~WHA

	Ref.	Data				
	Des.	Element	<u>Name</u>		<u>Attr</u>	<u>ibutes</u>
M	REF01	128	Reference Identifi	ication Qualifier	\mathbf{M}	ID 2/3
			Code qualifying th	e Reference Identification		
			PR	Price Quote Number		
				EDU Rate Subclass or Revenue Class -	Used	to provide
				further classification of a rate.		
M	REF02	127	Reference Identifi	ication	X	AN 1/30
			Reference informa	tion as defined for a particular Transaction	Set o	or as
			specified by the Re	eference Identification Qualifier		
			EDU Rate Subclas	s or Revenue Class		

Position: 030
Loop: PTD
Level: Detail
Usage: Optional
Max Use: 20

Purpose: To specify identifying information

Syntax Notes: 1 At least one of REF02 or REF03 is required.

If either C04003 or C04004 is present, then the other is required.
If either C04005 or C04006 is present, then the other is required.

Semantic Notes: Comments:

Notes:

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

HI: Required for First Energy companies (if/when HI supported) & AEP Ohio; optional

for DP&L and Duke Energy

HU: Required for First Energy companies & AEP Ohio; optional for DP&L and Duke

Energy Ohio
IU: Not Used
MU: Not Used

REF~SV~SECONDARY

Data Element Summary

	Kei.	Data				
	Des.	Element	<u>Name</u>		X12	2 Attributes
Must Use	REF01	128	Reference Id	lentification Qualifier	\mathbf{M}	ID 2/3
			Code qualifying	the Reference Identification		
			SV	Service Charge Number		
				Service Voltage		
Must Use	REF02	127	Reference Id	lentification	\mathbf{X}	AN 1/30
			Reference inform	nation as defined for a particular Transaction Set or as sp	ecified b	ov the Reference

Reference information as defined for a particular Transaction Set or as specified by the Reference Identification Qualifier

PRIMARY SECONDARY

Actual service voltage transmission value (Ex: 34.5kV)

Segment: QTY Quantity (KC=Peak Load Contribution)

Position: 110
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 1

Purpose: To specify quantity information

Syntax Notes: 1 At least one of QTY02 or QTY04 is required.

2 Only one of QTY02 or QTY04 may be present.

Semantic Notes: Comments:

1 QTY04 is used when the quantity is non-numeric.

Notes: HI: Required for PJM Customers; otherwise not used HU: Required for PJM Customers; otherwise not used

IU: Not Used MU: Not Used

Each QTY/MEA/DTM loop conveys consumption information about one metering period. The value provided is at the Account or Service Delivery Identifier Number level for AEP.

Zero values may be sent if the EDU is, in fact, stating that there is no contribution for this

customer's account

Example: QTY*KC*752*K1

Must Use	Ref. <u>Des.</u> QTY01	Data Element 673	Name Quantity Qualifier Code specifying the		outes D 2/2
			KC	Net Quantity Decrease Peak Load Contribution, (a.k.a. Capacity Cont	
				or Load Responsibility): Peak load contributio PJM for Installed Capacity calculation (coincid Peak).	*
Must Use	QTY02	380	Quantity Numeric value of qu		R 1/15
Must Use	QTY03	355	Unit or Basis for M Code specifying the which a measurement	units in which a value is being expressed, or ma	D 2/2 anner in
			K1	Kilowatt Demand Represents potential power load measured at predetermined intervals	

Segment: DTM Date/Time Reference (007=PLC Effective Date)

Position: 210
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

HI: Required for PJM Customers; otherwise not used

HU: Required for PJM Customers; otherwise not used

IU: Not UsedMU: Not Used

The QTY/DTM loop may be sent twice depending on the time of year the Historical Usage is being provided. (PLC is effective June 1 - May 31) One iteration will show the current PLC and a second iteration will show the PLC that will be effective in the period defined in the DTM segment. Currently the EDUs change the PLC effective June 1st. Once the EDUs are aware of what the next effective PLC will be (typically in December) they should begin providing it on transactions.

For example, in February 2014 the PLC values would be reported as:

OTY*KC*476*K1

DTM*007****RD8*20130601-20140531

QTY*KC*450*K1

DTM*007****RD8*20140601-20150531

Whereas in September 2014 the PLC value would include only one loop because the following year's PLC is undetermined:

QTY*KC*450*K1

DTM*007****RD8*20140601-20140531

Ohio EDU Implementation of this segment as per EDI CC 108:

AEP - 3Q 2014

DP&L and Duke Energy Ohio - by 12/31/14

FirstEnergy - TBD

Example: DTM*007****RD8*20070601-20080531

	Ref. Des.	Data <u>Element</u>	<u>Name</u>		<u>Attı</u>	<u>ributes</u>
Must Use	DTM01	374	Date/Time Qualifie	er e of date, or time, or both date and time	M	ID 3/3
Must Use	DTM05	1250	007 Date/Time Period F	Effective PLC Effective Date	X	ID 2/3
What ese	Divios	1200		date format, time format, or date and tir Range of Dates Expressed in Format		
Must Use	DTM06	1251	Date/Time Period	CCYYMMDD-CCYYMMDD YMMDD-CCYYMMDD	X	AN 1/35

Segment: QTY Quantity (KZ=Network Service Peak Load)

Position: 110
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 1

1

Purpose: To specify quantity information

 $\textbf{Syntax Notes:} \qquad \textbf{1} \qquad \text{At least one of QTY02 or QTY04 is required.}$

Only one of QTY02 or QTY04 may be present.

QTY04 is used when the quantity is non-numeric.

Semantic Notes: Comments:

Notes: HI: Required for PJM Customers; otherwise not used

HU: Required for PJM Customers; otherwise not used

IU: Not UsedMU: Not Used

Each QTY/MEA/DTM loop conveys consumption information about one metering interval. The

value provided is at the Account or Service Delivery Identifier Number level for AEP

Zero values may be sent if the EDU is, in fact, stating that there is no contribution for this

customer's account.

Example: QTY*KZ*752*K1

Must Use	Ref. <u>Des.</u> QTY01	Data <u>Element</u> 673	Name Quantity Qualifier Code specifying the	type of quantity	Attr M	ributes ID 2/2
			KZ	Corrective Action Requests - Written		
				Network Service Peak Load (a.k.a. Tra	nsmis	ssion
				Contribution or 1CP): Customer's pea		
				provided to PJM for the Transmission S	Servi	ce calculation
				(coincident with LDC peak).		
Must Use	QTY02	380	Quantity		X	R 1/15
			Numeric value of qu	antity		
Must Use	QTY03	355	Unit or Basis for M	leasurement Code	M	ID 2/2
			Code specifying the	units in which a value is being expresse	d, or	manner in
			which a measuremen	nt has been taken		
			K 1	Kilowatt Demand		
				Represents potential power load measu	red a	t
				predetermined intervals		

Segment: DTM Date/Time Reference (007=NSPL Effective Date)

Position: 210
Loop: QTY
Level: Detail
Usage: Optional
Max Use: 10

Purpose: To specify pertinent dates and times

Syntax Notes: 1 At least one of DTM02 DTM03 or DTM05 is required.

2 If DTM04 is present, then DTM03 is required.

3 If either DTM05 or DTM06 is present, then the other is required.

Semantic Notes: Comments:

Notes:

Ref.

HI: Required for PJM Customers; otherwise not used

HU: Required for PJM Customers; otherwise not used

IU: Not Used MU: Not Used

NSPL is for January 1 - December 31

The QTY/DTM loop may be sent twice when the Utility is providing both the current NSPL and the NSPL that will be effective for a subsequent period. This will occur for short period of time between when the future value is sent via the 814C and the effective date of the future value.

For example, you may receive either two loops:

QTY*KZ*476*K1

DTM*007****RD8*20130101-20131231

QTY*KZ*450*K1

DTM*007****RD8*20140101-20141231

Or just one:

QTY*KZ*450*K1

DTM*007****RD8*20140101-20141231

Ohio EDU Implementation of this segment as per EDI CC 108:

AEP - 3Q 2014

Data

DP&L and Duke Energy Ohio - by 12/31/14

FirstEnergy - TBD

Example: DTM*007****RD8*20070601-20080531

	Des.	Element	<u>Name</u>		Att	<u>ributes</u>
Must Use	DTM01	374	Date/Time Qualifie	er e of date, or time, or both date and time	M	ID 3/3
			007	Effective NSPL Effective Date		
Must Use	DTM05	1250	Date/Time Period F Code indicating the	ormat Qualifier date format, time format, or date and time	X ne for	ID 2/3
			RD8	Range of Dates Expressed in Format CCYYMMDD-CCYYMMDD		
Must Use	DTM06	1251	Date/Time Period Expressed as CCYY	YMMDD-CCYYMMDD	X	AN 1/35

Segment: ${\bf SE}$ Transaction Set Trailer

Position: 030

Loop:

Level: Summary Usage: Mandatory

Max Use: 1

Purpose: To indicate the end of the transaction set and provide the count of the transmitted

segments (including the beginning (ST) and ending (SE) segments)

Syntax Notes: Semantic Notes:

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

Notes: Required

SE~28~000000001

	Ref.	Data			
	Des.	Element	<u>Name</u>	Attr	<u>ibutes</u>
M	SE01	96	Number of Included Segments	M	N0 1/10
			Total number of segments included in a transaction set include segments	ding S	T and SE
M	SE02	329	Transaction Set Control Number	M	AN 4/9
			Identifying control number that must be unique within the tra functional group assigned by the originator for a transaction		ion set

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Case No(s). 19-0666-EL-EDI

Summary: Application EDI Implementation Guideline for Ohio - 867 Usage electronically filed by Mr. Joseph D Lindsay on behalf of Ohio EDI Working Group