

## **NorthStar Module**

### **Meter Reading**

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# FINAL READS FOR AMI USAGE METERS

*This document outlines the recommended practice for processing a final service order for a usage-based AMI meter/account using NorthStar Meter Reading.*

## **Benefits of Using NorthStar Meter Reading for Final Reads**

- Usage-based meters do not use reads from the meter plate for finals
- Allows Meter Techs to use their time more efficiently
- Eliminates manual calculation and potential for error
- Allows the Billing Clerk to gather the correct reads and usage for final bills



## Step-by-Step Procedure

### Account Gateway

From the Calls menu in Account Gateway, create the Move in/Force out service orders for the account.

Verify the move out date on the force out Service Order.

Notice if the occupant is moving out during the regular cycle billing or mid-cycle. This will determine how the account processes in Meter Reading.

*In this example, the occupant is moving out on 1/1/2019. The occupant's last read date, according to the Electric Reading History, was on 12/20/2018. This customer is moving out mid-cycle.*

Account Gateway > Call tab

**Move Out**

OK Cancel ? Scheduled Orders

**Call Information**

Call: MOVOUT MOVOUT MOVEOUT Order: MOVOUT  
Account: 123456 2 Date: 2019-03-12 08:49:47  
Service: Call number: 0

Main More Activity Attach Letter Internal Notes Print Order

**Caller Information**

Requested: 2018-12-21  
Scheduled: 2019-01-01  
Caller name:  
Phone:  
Note:

**Completion / Status**

Status: S SCHEDULED  
Priority:  
Assigned to:  
Print:  
Launch Move In:

**Moving To**

Account no: Serv Addr  
Scheduled in: 2019-01-01

**Forwarding Address**

Address 1:  
Address 2:  
City:  
State: WI  
Zip:  
Mode:

**Schedule Notes**

## Meter Reading Entry

Open the **Meter Reading Entry** table.

Click the **Search** icon.

Enter the **Account Number** on the final service order.

If the search returns the account, review the **Read Dates Previous** and **Current** to determine the status of the account.

- If the account is in an *active billing cycle*, delete it from Meter Reading. If it has transferred to the Billing Journal, delete it from the Billing Journal also.
- If the Occupant is moving out mid-cycle, and the current Meter Reading Entry is old, delete the account out of Meter Reading.

Click the **Delete All** button.

A 'delete' confirmation message will appear, click **'Yes.'**

*In this example, the account was last read from 11/21 – 12/20. With a move out date of 1/1/19, this will be a mid-cycle billing. Delete the account from Meter Reading Entry.*

## Meter Reading > Meter Reading Entry

Meter Reading Entry (BROWSE)

Cycle: 1 Route: Walk: .41

Account: 123456

Service: E ELECTRIC

Meter:

Position: 1

Time Band: ON KWH

Multiplier: 1.0

Dials: 0

Status: 3

Reading Units: 1 kWh

Reading Previous: 3975

Reading Current: 4175

Reading Usage: 200.00

Reading Type: MR Meter Read

Read Date Previous: 2018-11-21

Read Date Current: 2018-12-20

Read Date Days: 29

Can't Read Reason:

Reader ID:

NonVari: 1 Varian: 0 Rollovers: 0 CrBills: 0 SkpRead: 0

Inactive: 0 HigUsg: 0 NonZero: 0 Hig1/Low1: 0 Hig2/Low2: 0

ZeroUsg: 0 InvMtr: 0 EstFail: 0 FinPenAcc: 0

Release Reason:

Delete All

Update All

Cancel UpdateAll Mode

Generate Service Orders

View Account Details

## Meter Reading Load

Open the **Reading Load** table to load the single deleted account back into Meter Reading.

At **Account**, enter the account number.

In the **Scheduled Read** field, select the Move Out Date from the Final Service Order.

Click **OK** to begin loading the account.

*The example is using the 1/1/2019 move out date as the read date.*

*Meter Reading > Reading Control > Reading Load*

Meter Reading Load (FIND)

Cycle:

Route:

Service:

Billing Period:

Account:

Scheduled Read:

Print OK Cancel

The Meter Reading Load processing table will appear.

Click **Close** when the processing completes.

Meter Reading Load (FIND)

Print Save Cancel Close

Results Status Errlog

100%

Download complete. Report url = [http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212527&tmpext=HARTFORD\\_TEST&type=report](http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212527&tmpext=HARTFORD_TEST&type=report)

<b>Message</b>	The meter reading load has completed successfully
<b>Status</b>	OK
<b>URL</b>	<a href="http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212527&amp;tmpext=HARTFORD_TEST&amp;type=report">http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212527&amp;tmpext=HARTFORD_TEST&amp;type=report</a>

## Meter Reading Entry

In Meter Reading Entry, search for the newly loaded account.

Verify all services are present.

Review the following fields for accuracy:

- Reading Previous
- Read Date Previous
- Read Date Current

Following the same account in the example, notice the Read Date Previous is 12/20/2018 and the Read Date Current is 1/1/2019.

With the account loaded to Meter Reading Entry with the scheduled move out date, create a Billing Request.

*Note: Use the search below to locate accounts in Meter Reading without a sent billing request. Any account that meets the criteria will be send a Billing Request to EnergyIP when the 'Run Billing Request' button is clicked in MDMR Programs.*

Service = E (Electric)  
Meter = Org ID% (99%)  
Status = 0

Meter Reading > Meter Reading Entry

Meter Reading Entry (BROWSE)

Cycle: 1 Route: Walk: .41

Account: 123456 2

Service: E ELECTRIC

Meter:

Position: 1

Time Band: ON KWH

Multiplier: 1.0

Dials: 0

Status: 0

Reading Units: 1 kWh

Reading Previous: 4175

Reading Current:

Reading Usage:

Reading Type:

Read Date Previous: 2018-12-20

Read Date Current: 2019-01-01

Read Date Days: 12

Can't Read Reason:

Reader ID:

NonVari:  Varian:  Rollovers:  CrBills:  SkpRead:

Inactive:  HigUsg:  NonZero:  Hig1/Low1:  Hig2/Low2:

ZeroUsg:  InvMtr:  EstFail:  FinPenAcc:

Release Reason:

Delete All

Update All

Cancel UpdateAll Mode

Generate Service Orders

View Account Details

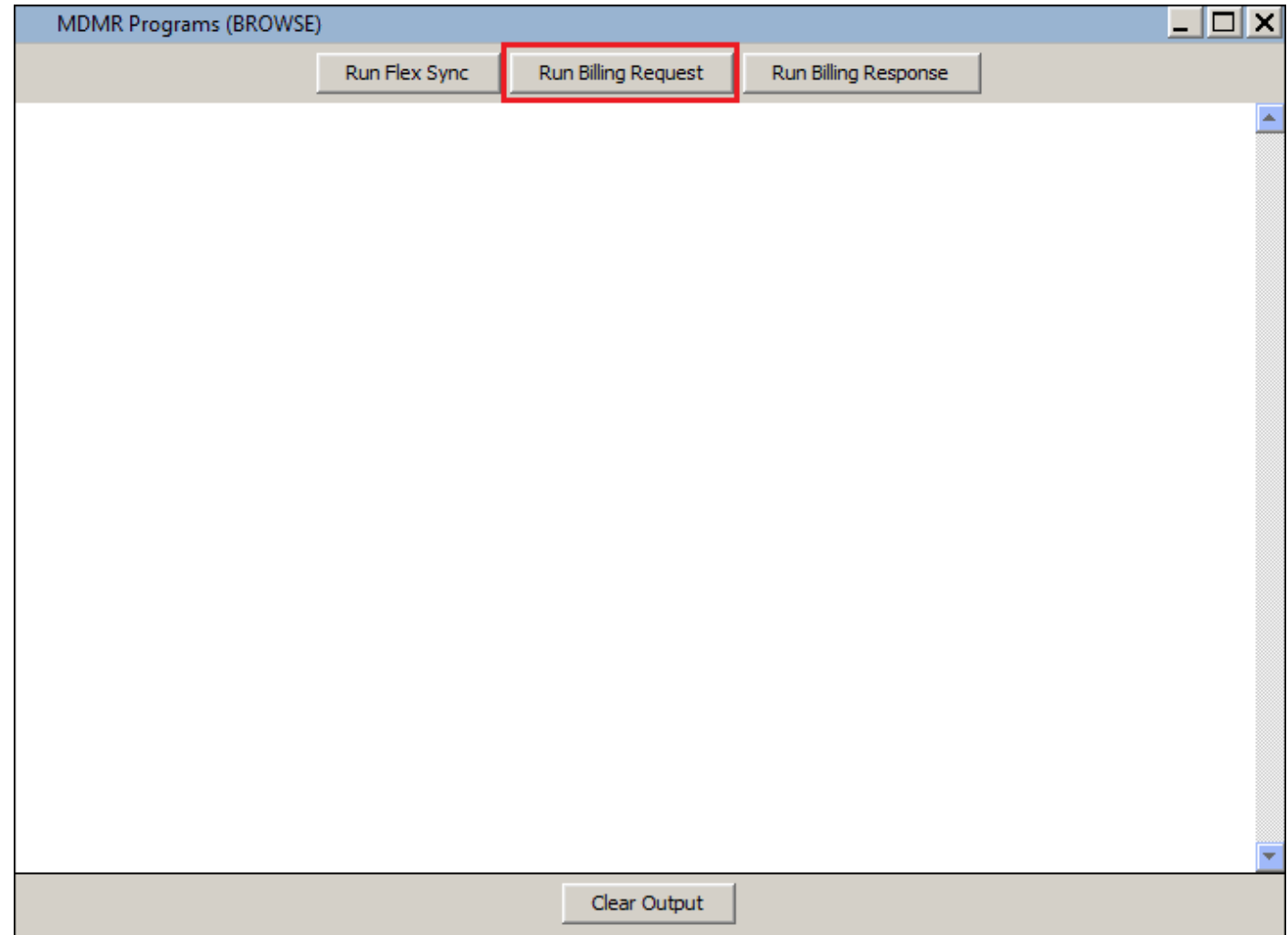
## MDMR Programs

*Meter Reading > MDMR > MDMR Programs*

Open the **MDMR Programs** table.

Click the **Run Billing Request** button.

This action tells NorthStar to create a billing request file. Once the file generates, it transfers to EnergyIP to obtain a meter read. This automated process that takes approximately 45 minutes – 1 hour to complete.



## Meter Reading Entry

In the Meter Reading Entry table, the **Status** field updates from '0' to a 4-digit number. This indicates the meter read is 'in progress.'

NorthStar provided five (5) numeric settings to indicate the status of accounts in Meter Reading.

- 0 = not processed**
- 1 = in progress**
- 2 = read entered**
- 3 = read transferred**
- 4 = not read**

*Note: It is unlikely a status of '1' will ever appear in a search. This status updates within seconds to the 'not read' status.*

*The 'not read' status, often referred to as 'Status greater than 4,' appears as a 4-digit number. The unique number, assigned by NorthStar, links the request to EnergyIP. NorthStar uses the number to pair the returned meter reads to the correct account.*

## Meter Reading > Meter Reading Entry

Meter Reading Entry (BROWSE)

Cycle: 1 Route: Walk: i41

Account: 123456 2

Service: E ELECTRIC

Meter:

Position: 1

Time Band: ON KWH

Multiplier: 1.0

Dials: 0

Status: i138

Reading Units: 1 kWh

Reading Previous: 4175

Reading Current:

Reading Usage:

Reading Type:

Read Date Previous: 2018-12-20

Read Date Current: 2019-01-01

Read Date Days: 12

Can't Read Reason:

Reader ID:

NonVari:  Varian:  Rollovers:  CrBills:  SkpRead:

Inactive:  HigUsg:  NonZero:  Hig1/Low1:  Hig2/Low2:

ZeroUsg:  InvMtr:  EstFail:  FinPenAcc:

Release Reason:

Ready

## MDMR Programs

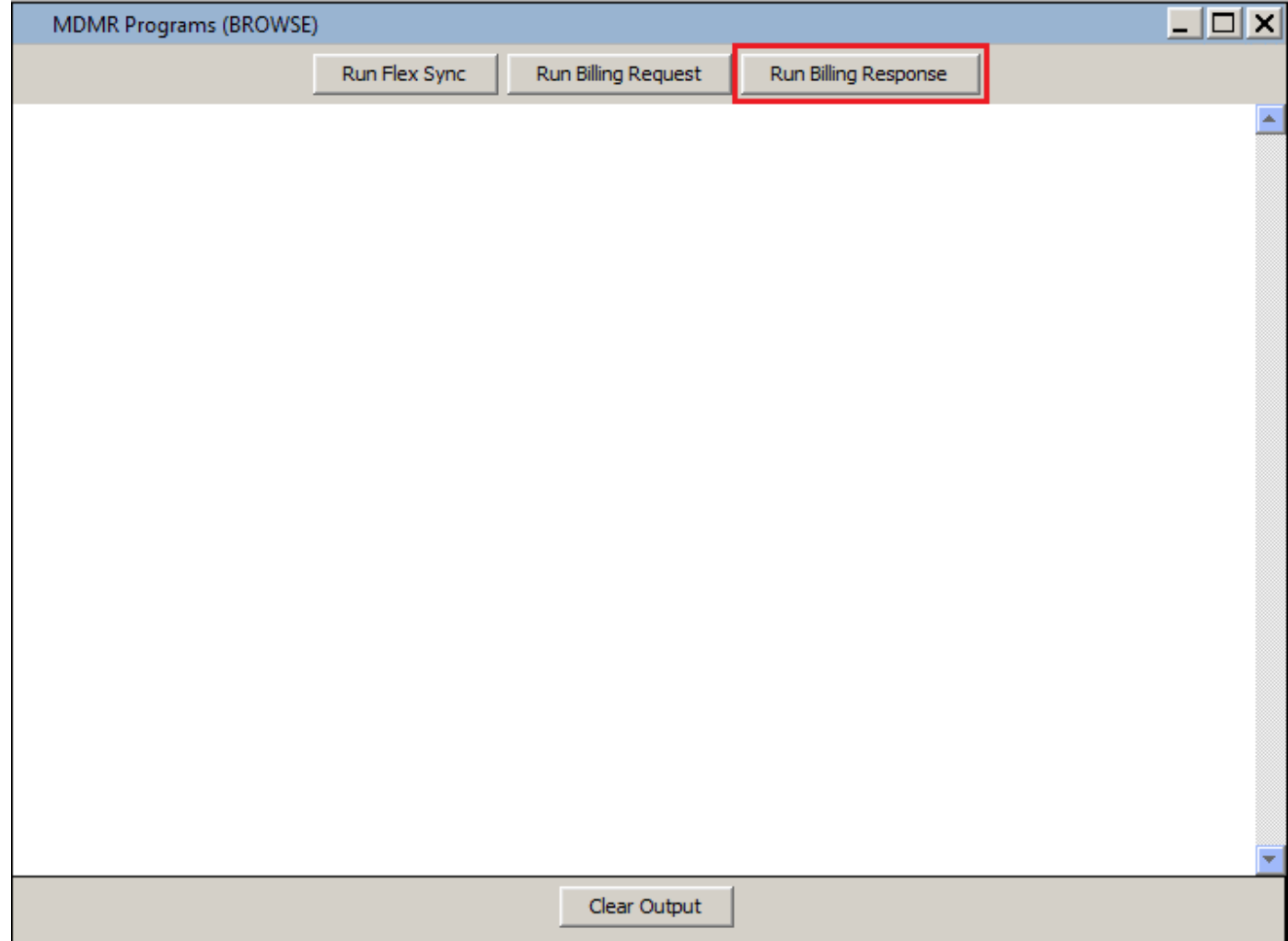
*Meter Reading > MDMR > MDMR Programs*

After waiting 45 minutes to 1-hour, return to the **MDMR Programs** table.

Click the **Run Billing Response** button.

This action signals NorthStar to collect all meter reads and usage from EnergyIP.

Once the Billing Responses finish loading, return to Meter Reading Entry to review.



## Meter Reading Entry

In the Meter Reading Entry table, search for the 'move out/final' account.

The following fields will be populate.

- Reading Previous
- Reading Current
- Reading Usage

Completing a final read through Meter Reading ensures the system will bring in the previous and current reads correctly *and* display them on the bill.

The **Status** field has updated to a '2' indicating the reads were successfully brought into NorthStar.

*Note: If the Status field remain as a 4-digit number, the billing response failed indicating there is an issue with the meter in EnergyIP. This will need to be reviewed/fixd prior to the billing response completing. If unable to resolve the issue in EnergyIP, create a WSC ticket.*

Meter Reading > Meter Reading Entry

Meter Reading Entry (BROWSE)

Cycle: 1 Route: Walk: .41

Account: 123456 2

Service: E ELECTRIC

Meter: Position: 1 Time Band: ON KWH

Multiplier: 1.0 Dials: 0

Status: 2

Reading Units: 1 kWh

Reading Previous: 3975

Reading Current: 4185

Reading Usage: 210.00

Reading Type: MR Meter Read

Read Date Previous: 2018-12-20

Read Date Current: 2019-01-01

Read Date Days: 12

Can't Read Reason: Reader ID:

NonVari: Variar: Rollovers: CrBills: SkpRead:

Inactive: HigUsg: NonZero: Hig1/Low1: Hig2/Low2:

ZeroUsg: InvMtr: EstFail: FinPenAcc:

Release Reason:

Delete All

Update All

Cancel UpdateAll Mode

Generate Service Orders

View Account Details

## Reading Transfer to Billing

Meter Reading > Reading Transfer to Billing

With the reads successfully populated in the Meter Reading Entry table, the account(s) may transfer to the Billing Journal.

Open the **Reading Transfer to Billing** table.

In the **Accounts** field, enter the account number to transfer.

By entering a specific account, NorthStar will transfer only the designated account and leave all others in Meter Reading Entry.

If **Merge with Batch Number** is blank, NorthStar will create a billing journal.

Click **OK**.

**Reading Transfer to Billing (FIND)**

**Meter Reading Transfer**

Cycles:

Accounts:

Routes:

Services Types:

Walks:

Merge With Batch Number:

Estimate Unread Meters:

Transfer Rollover Reads:

Previously Transferred Only:

Transfer Zero Consumption:

**OK To Transfer**

Variance Errors:

Credit Bills:

Skipped Readings:

Inactive With Usage:

High Usage:

Non Zero Check Meters:

High1/Low1 Estimate:

High2/Low2 Estimate:

Transfer SO Pending:

Transfer SO Complete:

**Transfer Bill Options**

LDC Bill Ready:

LDC Rate Ready:

Retailer Bill Ready:

Retailer Rate Ready:

Split:

SSS:

Regular:

Please enter estimate unread meters

OK Cancel

The processing screen appears.

When the transfer completes, the Message will indicate the batch number of the billing journal created.

Click **Close** to exit the screen.

Reading Transfer to Billing (FIND)

Print Save Cancel Close

Results Status Errlog

100%

Download complete. Report url = [http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212538&tmpext=HARTFORD\\_TEST&type=report](http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212538&tmpext=HARTFORD_TEST&type=report)

<b>Message</b>	Readings transferred to batch 2033
<b>Status</b>	OK
<b>URL</b>	<a href="http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212538&amp;tmpext=HARTFORD_TEST&amp;type=report">http://WPPIUB181:18001/fglweb/secure/FGL?reportid=212538&amp;tmpext=HARTFORD_TEST&amp;type=report</a>

## Billing Journal

Proceed to the **Journals** module.

Open the **Billing Journal**.

Locate the batch created during the Transfer to Billing process.

Review the dates on the account(s) and meters loaded into the batch. The dates will match those from Meter Reading Entry.

From the **Services** tab, click the **Edit** icon.

Change (Flip) the **Bill Type** from a '1' (regular bill) to a '5' (final bill).

Click **OK**.

A pop-up window appears requesting verification of the change.

Click **'Yes'**.

A second pop-up window asks about finalizing all services.

Click **'Yes'**.

*Journals > Billing and Adjustments > Billing Journal*

The screenshot displays the 'Billing Journal (BROWSE)' application window. The title bar indicates 'NEW' and '1 of 3'. The main window has a menu bar with 'Main' and 'More'. Below the menu bar, there are fields for 'Batch number: 2033', 'Created by: cschaub', 'Cycle:', 'Route:', and 'Consumption month: 2019-01'. A toolbar contains icons for search, add, delete, and navigation, along with 'OK' and 'Cancel' buttons. The 'Billing Entry' tab is selected, and the 'Billing Information (BROWSE)' sub-window is open. This sub-window has a toolbar with '1 of 2' and 'OK'/'Cancel' buttons. The 'Services' tab is selected, showing 'Meters', 'Statistic', and 'Final New Orders' options. The 'Account Information' section includes an 'Account' field with a search icon and a '2' next to it, a 'Service' dropdown set to 'ELECTRIC', and several empty input fields. The 'Billing Information' section features a 'Bill type' dropdown set to '5' with a 'Final' button next to it, a 'Delayed' checkbox, an 'Occupancy' dropdown set to 'N', and 'Bill from' (2018-12-20) and 'To' (2019-01-01) date fields. Red boxes highlight the 'Billing Entry' tab, the 'Services' tab, the 'Bill type' dropdown and 'Final' button, and the 'Bill from' and 'To' date fields.

The **Final New Orders** tab opens automatically.

At the **S/O Numbers Final**, select the Move Out order from the list.

At the **S/O Numbers New**, select the Move In order from the list.

Click **OK** to save the changes.

The screenshot shows a software interface for 'Billing Journal (BROWSE) NEW'. At the top, there are fields for 'Batch number: 2033', 'Created by: cschaub', 'Cycle:', 'Route:', and 'Consumption month: 2019-01'. Below this is a menu bar with options like 'Billing Entry', 'Error Log', 'Reading Verification', 'Date Correction', 'Calculation', 'Verification Listing', 'Bill Print', 'Journal Print', 'Journal Statistics', and 'Post'. The main area is titled 'Billing Information (BROWSE)' and contains a sub-tab 'Final New Orders'. This sub-tab displays a table with the following data:

S/O Numbers	Final:		
	12694		2019-01-01
	12695		2019-01-01
Next occupant:			

Proceed to the Calculations, Bill Print, Journal Print, and Posting of the batch.

Once the batch Posts, a soft alert of 'Final' will appear at the top of the account(s).

# CHANGING AN ACCOUNT NUMBER AND THE METER STAYS THE SAME

Note: Submit a WSC ticket at [helpdesk@wppienergy.org](mailto:helpdesk@wppienergy.org) if any questions or concerns arise during the process.

After changing the account number in Account Gateway, move to the Meter Reading module.

Open the **MDMR SDP Maintenance** table.

Meter Reading > MDMR > MDMR (SDP) Maintenance

The screenshot shows the 'MDMR SDP Maintenance (FIND)' application window. The window title is 'MDMR SDP Maintenance (FIND)'. The interface includes a toolbar with search, add, delete, and navigation icons, and a status bar showing '0 of 0' records. The main content area is divided into several sections:

- SDP:** Fields for 'SDP', 'SDP Type' (dropdown), and 'USD'. An 'Update RowSet...' button is present.
- Account:** Fields for 'Account' and 'Service address'.
- Info:** Fields for 'Meter Number', 'LFC' (dropdown), 'Utility Type' (dropdown), 'Service Status' (checkbox), 'Frame Struct' (dropdown), and 'VEE Service' (checkbox).
- Details:** A table titled 'MDMRSDPMaintenanceDetail (BROWSE)'. The table has columns for 'Addsub', 'Childusdp', 'Portion', 'Sdp', and 'Sdpdid'.

Search the table by the old account number OR the meter number.

MDMR SDP Maintenance (BROWSE)

SDP: 14005 SDP Type: P USDP: 14005 Update RowSet...

Account: 3350738 0 ADVANCED TOOLING  
Service address: 1435 MIDWAY RD X120 WINNEBAGO

Info: Meter Number: 3017300008 LFC: Utility Type: E Service Status:   
Frame Struct: 03 TOU 8-8 (CST) USAGE VEE Service: 76

Details

MDMRSDPMaintenanceDetail (BROWSE)

Addsub	Chidusdp	Portion	Sdp	Sdpdid
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Click the **Edit** icon.

MDMR SDP Maintenance (BROWSE)

1 of 1

In the **Account** field, enter the new account number.

MDMR SDP Maintenance (BROWSE)

SDP: 14005 SDP Type: P USD: 14005 Update RowSet...

Account: 9501090 0 ADVANCED TOOLING

Service address: 1435 MIDWAY RD X120 WINNEBAGO

Info

Meter Number: 3017300008 LFC: Utility Type: E Service Status:

Frame Struct: 03 TOU 8-8 (CST) USAGE VEE Service: 76

Details

MDMRSDPMaintenanceDetail (BROWSE)

Addsub	Childusdp	Portion	Sdp	Sdpdid
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Click **OK** to save.

MDMR SDP Maintenance (EDIT)

1 of 1 OK Cancel

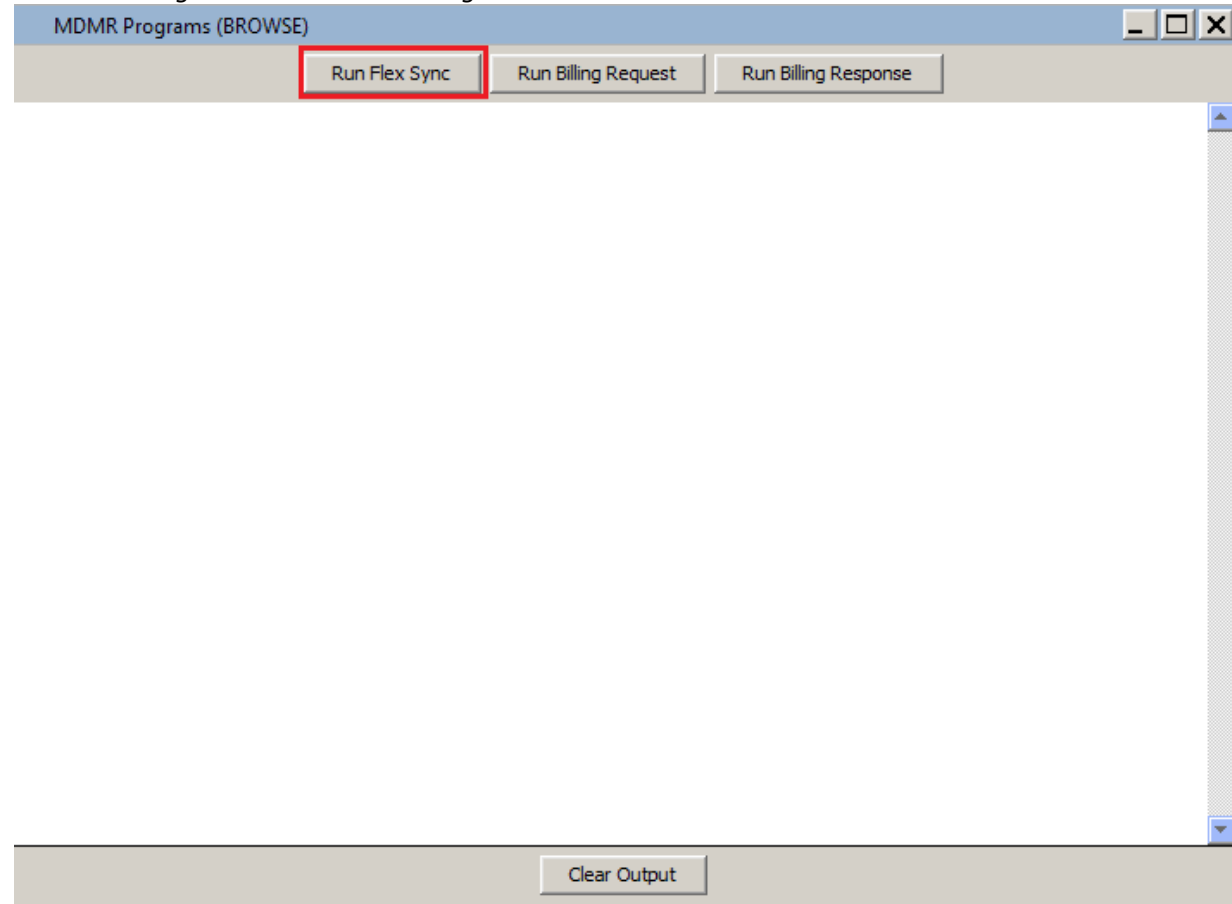
## Flex Sync the Changes

In order for the changes to update in EnergyIP, a flex sync must take place. Follow the steps outlined below based on the scenario.

*Scenario 1: Changes are required for additional processes to occur the same day.*

From the Meter Reading module, open the MDMR Programs table.

*Meter Reading > MDMR > MDMR Programs*



Click the Run Flex Sync button.

Allow the NorthStar and EnergyIP systems approximately 20 minutes to complete the updates prior to reviewing the meter in EnergyIP.

*Scenario 2: Updated account information is not required for additional processing that same day.*

Allow the nightly flex sync process to pick up the file and apply the changes to EnergyIP.  
The changes will be available for review the following day.

# NORTHSTAR METER READING/BILLING PROCESS CHECKLIST

*This document outlines the recommended steps for billing using NorthStar.*

## **Benefits of Using NorthStar Billing Process**

Using a standard billing process each month will help the utility to maintain integrity of data and accuracy of utility bills. The Checklist provided will help ensure the standard billing process in these areas:

- Obtaining reads
- Verifying data
- Applying rates
- Calculating bills
- PCAC updates
- Reviewing bills
- Bill print
- Posting
- Reports

## Pre-Billing Checklist

Each of these steps is critical. You can begin some of these steps well before the day you want to run your bills. Be sure you are considering these issues throughout the billing cycle so that you are prepared on billing day.

- 1 Clear Readings from Previous Cycle
  - Check Meter Reading Entry or Reading Control
  - Confirm everything from previous billing period has been processed
  - Delete all entries
- 2 Check Billing Journals / Check for Final Bills
  - Make sure there are no open batches for that cycle in Billing Journal
- 3 Rate Changes
  - Confirm all rate changes since previous billing cycle have been entered into NorthStar
  - Verify effective date matches first day of new billing cycle (if applicable)
  - Update streetlights Hours of Operation Table if necessary
- 4 Cross Apply
  - Run Cross Apply prior to billing
- 5 Late Payment Journal
  - Verify the LP Journal was run and posted the day after the due date
  - If LP runs via Automation Platform, confirm that all batches have been posted prior to billing
- 6 Cash and Outstanding Journals
  - Verify all Cash and any outstanding Journals have been posted
- 7 AMI Meters: Check EnergyIP for any outstanding VEE Issues
  - Meter Data Operations → VEE Issues tab → Search button
  - Make sure all VEE Service Requests are resolved & closed before running Billing Requests
- 8 Meter Exchanges
  - Verify all Meter Exchanges/Installs are completed

## Meter Reading Checklist

The order of these steps is critical EXCEPT you can run Export File Translation before OR after the AMI reading process.

- 1 Load routes
  - Meter Reading → Reading Load (metered services only)  
Load E, W, and S services
- 2 Handheld import
  - Meter Reading → Import File Creation
  - Always check “Exclude AMI” and always run this before beginning AMI reading
- 3 Handheld export
  - Meter Reading → Export File Translation
- 4 Begin AMI reading
  - Meter Reading → MDMR Programs → Run Billing Request
- 5 Monitor EnergyIP for billing requests
  - Meter Data Operations → Billing Requests → expand “More Fields”
  - Read End Time: end date of current billing period
  - Request Status: READ\_WAIT
  - Hit “Search” button
  - Troubleshoot all billing requests that get stuck in READ\_WAIT
- 6 Complete AMI reading
  - Meter Reading → MDMR Programs → Run Billing Request (responses auto-return)
- 7 Reading verification
  - Meter Reading → Reading Entry Verification (run report)
  - In Meter Reading, complete searches for 1 and 0 for each verification test you run
  - Search using Advanced Finds for any usage greater than XXX amount (kwh or Water)
  - Search using Advanced Finds for all Status greater than 4
  - Review Status = 4 for missing reads
- 8 Transfer to billing
  - Meter Reading → Reading Transfer to Billing

## Batches and Routes

If you are combining routes in billing, note the Batch# and Routes:

BATCH	_____	ROUTES	_____
BATCH	_____	ROUTES	_____
BATCH	_____	ROUTES	_____
BATCH	_____	ROUTES	_____

## Billing Checklist

Run these procedures for each batch.

- 1 Check Error Logs in Billing Journal
  - Billing Journal → Error Log
  - Billing Load for Non-Metered Services
    - Journals → Billing Preparation → Billing Load  
(Pulls from the account & looks for services not yet loaded to the Billing Journal)
    - Verify read date matches Meter Reading
  - Run Reading Verification in Billing Journal
  - Check for:
    - Credit Balances
    - Rollovers
    - Estimations
    - No Bills
    - Final Bills (Meter Reading Verification process for removed meters that were not in Meter Reading)
- 2 Calculation
  - Billing Journal → Calculate
- 3 Verification Listing
  - Billing Journal → Verification Listing → Check Dollar Variance
  - Correct accounts in the list as appropriate
  - Re-run Calculation for corrected entries
  - Re-run Verification Listing → Check Dollar Variance with 200 in dollar variance field
- 4 Re-Run Verification Listing
  - Billing Journal → Verification Listing → Open Search
  - Check for any accounts that have gone to suspense
  - Re-run Calculation for corrected entries
  - Re-run Verification listing → Open Search
- 5 Run Journal Statistics
  - Billing Journal → Journal Statistics
  - Profile = Electric Usage
  - Report by = choose Category *OR* Bill Code
  - Report Level = Statistic Code
  - Summary By = Category/Bill Code
  - Review number of bills and total dollars
  - Review total consumption is in line with history

- 6 Calculate New PCAC
  - Setups → Setups → Electric → Rates → Electric Rate Adjustments
  - Just-like, enter new effective date, enter new PCAC rate (verify the latest record is updated)
- 7 Final Calculation
  - Billing Journal → Calculate → Confirm bill date and due date

## Bill Print and Review

Follow these steps when you are ready to print bills.

- 1 Bill Print
  - Billing Journal → Bill Print → In-house or Flat file
  - Upload Flat File to InfoSend (if applicable)
  - Review InfoSend Process Summary Report file (first page of sample file) for:
    - Number of bills
    - Total \$ billed
  - Review InfoSend bills for each class of customer
  - Review PCAC to ensure it is correct
  - Review Budget and ACH customers and coupon is correct
  - Review the Coupon for accuracy
  - Review Late Payment calculations for accuracy
  - Review Streetlight accounts for number of lights and rate
  - Review Solar accounts
- 2  Approve InfoSend samples after reviewing the samples file
- 3  Wait for the InfoSend Confirmation Email

## Journal Print and Post

Follow these steps when you are ready to Journal Print and Post the batch.

- 1 Journal Print
  - Billing Journal → Journal Print
  - Look for anything posting to suspense
  - Save to shared folder or print/store per utility protocol
- 2 Post
  - Billing Journal → Post
  - Posting will update MyAccount for customers that have e-billing

## BILLING ENTRY STATISTIC SOURCE CODES

*Billing Journal > Billing Entry > Statistic Billing Entry > Statistic Billing Entry Details*

SOURCE	DESCRIPTION	SOURCE	DESCRIPTION
CD	Electric Consumption Discount	CO	Electric Consumption
PA	Electric Power Adjustments	PC	Electric Power Adjustments with Cap
CP	Electric Consumption \$ Percent	CM	Electric Consumption Minimum
FD	Electric Flat Per Day	CC	Electric Capacity Charge
PB	Electric Per Bill	CF	Electric kWh Factor
DM	Demand Minimum	DK	Peak Demand
DD	Demand Discount	DP	Demand \$ Percent
DE	Demand	DA	Transformer Allowance
DF	Demand Power Factor	DW	Demand kW Factor
LR	Sentinel Lights Rental	LF	Sentinel Lights Flat
HR	Water Heater Rental	HF	Water Heater Flat
HY	Water Heater Relay	HP	Water Heater Purchase
TR	Street Lights Rental	TF	Street Lights Flat
WP	Water Adjustment	WS	Water Service Charge
WU	Water Multiple Use Flat	FH	Fire Protection – Hydrants
FA	Fire Protection – Assessment	WM	Water Minimum
WB	Water Per Bill	WA	Water Consumption
WC	Water percent of Consumption	SF	Sewage Adjustment
SM	Sewage Minimum	SS	Sewage Service Charge
SU	Sewage Multiple Use Flat	SW	Sewage Consumption
SA	Sewage Assessment	SB	Sewage Per Bill
SP	Sewage % of Water	MS	Miscellaneous Billing
RQ	Deposit Required	RD	Deposit Refund
RI	Deposit Interest Refund	OC	Occupancy Charge
SO	Service Orders	FB	Flat Billing
OI	Overdue Interest	TX	Taxes
DI	Discounts	EU	Electric Rate Adjustments



KD	Peak Demand Always	VO	kVarh Consumption
VA	kVarh Power Adjustments	VC	kVarh Power Adjustments with Cap
VP	kVarh Consumption \$ Percent	VM	kVarh Consumption Minimum
VF	kVarh Factor	FG	Flat Grid Rates
GP	Gas Allowance/Day	GM	Gas Minimum
GS	Gas Service Charge	GB	Gas Per Bill
GA	Gas Consumption	GC	Gas percent of Consumption
GU	Gas Multiple User	SC	Sewage Capacity Fee

# BILLING RESPONSE COMPLETION RULES

Each AMI service point has a data delivery service (DDS) attached to it in energyIP that determines how a billing response completes. The DDS is assigned based on the NorthStar meter subgroup.

Each DDS has definitions in energyIP for on-cycle, off-cycle, and informational billing requests. Requests sent from NorthStar meter reading process as on-cycle requests. Below are the settings for on-cycle data delivery services.

## Residential Electric

*This DDS has a minimum read window of zero (0) and a maximum read window of two (2) days.*

**Usage Reads** Because the minimum read window is zero, the read end time will always align with the billing request end time.

**Register Reads** The read end time will be the closest and latest read to the request end time, up to two (2) days after the request time.

## Industrial Electric

*This DDS has a minimum and maximum read window of zero (0).*

*It also has a register tolerance with a minimum of four (4) hours and a maximum of one (1) day.*

**Usage Reads** Because the minimum read window is zero (0), the read end time will always align with the billing request end time.

**Register Reads** Because the maximum and minimum read window of zero (0), the register read tolerance is used. This results in selecting the closest and latest read to the request end time, up to four (4) hours prior and to one (1) day past.

## Water

*This DDS has a minimum read window of four (4) days and a maximum read window of four (4) days.*

**Register Reads** The read end time will be the closest and latest read to the request end time, up to four (4) days before or after the request time.