

**Prepaid Power Energy Management  
System  
V2.0  
Manual**

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## Abstract

‘Acrel Remote Prepaid Power Energy Management System ’ is the electricity selling management system newly developed by Acrel Co.,Ltd.

The system can connect single phase electronic prepaid energy meter DDSY-1352 and three phase prepaid electronic energy meter DTSY-1352.

The software is mainly for electricity management and automatic meter reading,including computer,DPU,printer and other integrated system.

The system is mainly used for electricity meters parameter settings,commercial electricity selling management and electricity use management.It has good human-computer interface,with simple and convenient operation. It can achieve the remote constant operating and monitoring of property management company. It can effectively count and manage data and take effective security measures for the data safety.It is easy to install. It is the ideal product for power management department,commercial plaza,residential area and other management department.It can improve the management level and solve the problem of difficult charging.

Besides the function of charge problem solution,the software can connect ‘Acrel’ energy measuring meters and provide the function of remote automatic meter reading and targeted energy consumption query report. It provides power basis for whole environment energy consumption analysis,energy use comparison and safety electricity use.

# 1. System configuration

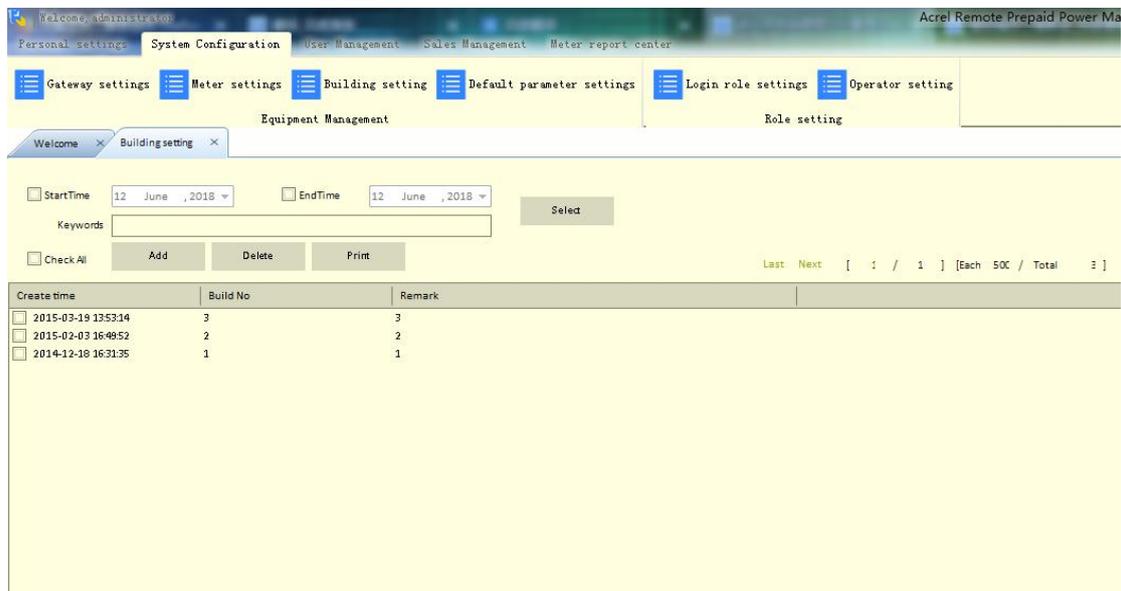
## 1.1. Equipment management

### 1.1.1. Buildings settings

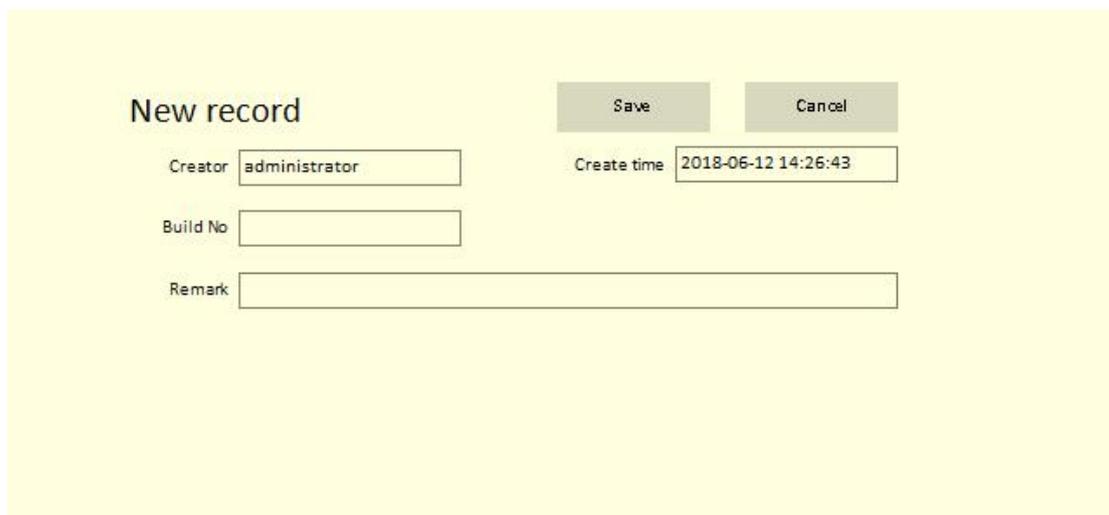
This function is for the maintenance of one or several electricity unit collections, like the unit taking buildings as collections. It provides ‘add’, ‘delete’, ‘query’, ‘export print’ and other operations.

Buildings settings page is shown as picture 1-1-1, the filling form of new building information shown as picture 1-1-2 will pop up when user clicks ‘add’ button, after filling in the building name and remark, the new buildings adding operation will be finished by clicking ‘save’ button.

It should be noticed that building name is only the code, and only digital data can be filled in, the building description can be written in the remark.



Picture1-1-1



New record

Creator administrator Create time 2018-06-12 14:26:43

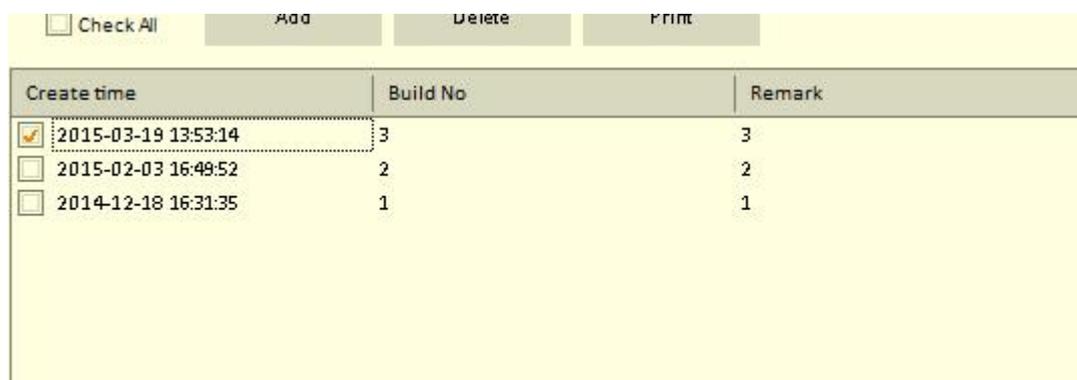
Build No

Remark

Picture1-1-2

If the existing buildings record needs to be modified,the user should double click the appointed record shown as picture 1-1-1 ,and then enter details page shown as picture 1-1-2,after modifying building name or remark,the modification operation will be finished by clicking ‘save’ button.

Before executing ‘delete’ and ‘export print’,please choose the record that needs to be deleted or export printed,the user only needs to click box when choosing the record and the system will automatically tick the box. (picture shown as below)



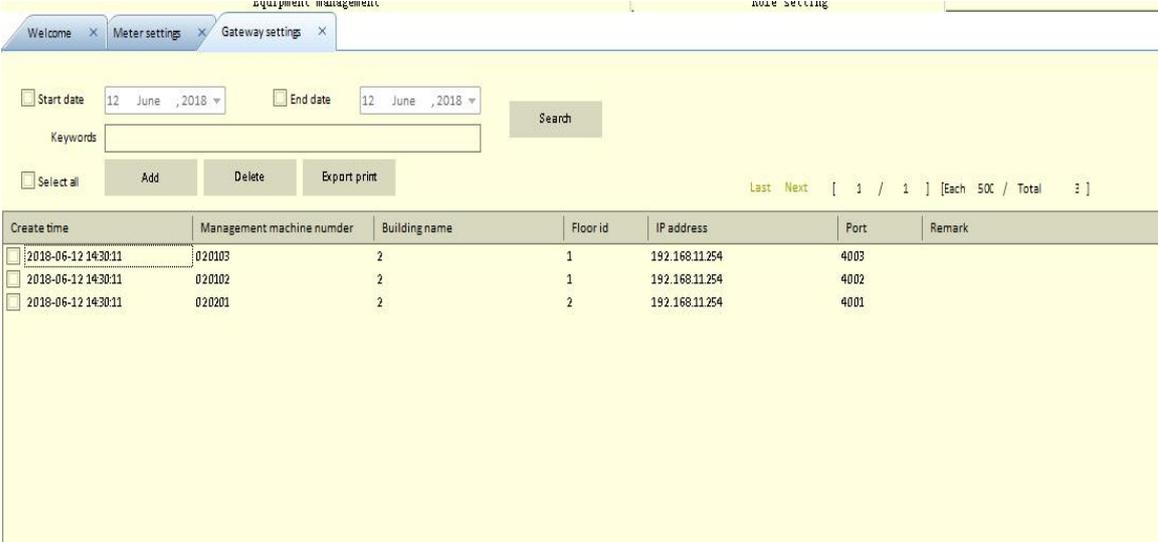
Create time	Build No	Remark
<input checked="" type="checkbox"/> 2015-03-19 13:53:14	3	3
<input type="checkbox"/> 2015-02-03 16:49:52	2	2
<input type="checkbox"/> 2014-12-18 16:31:35	1	1

Picture1-1-3

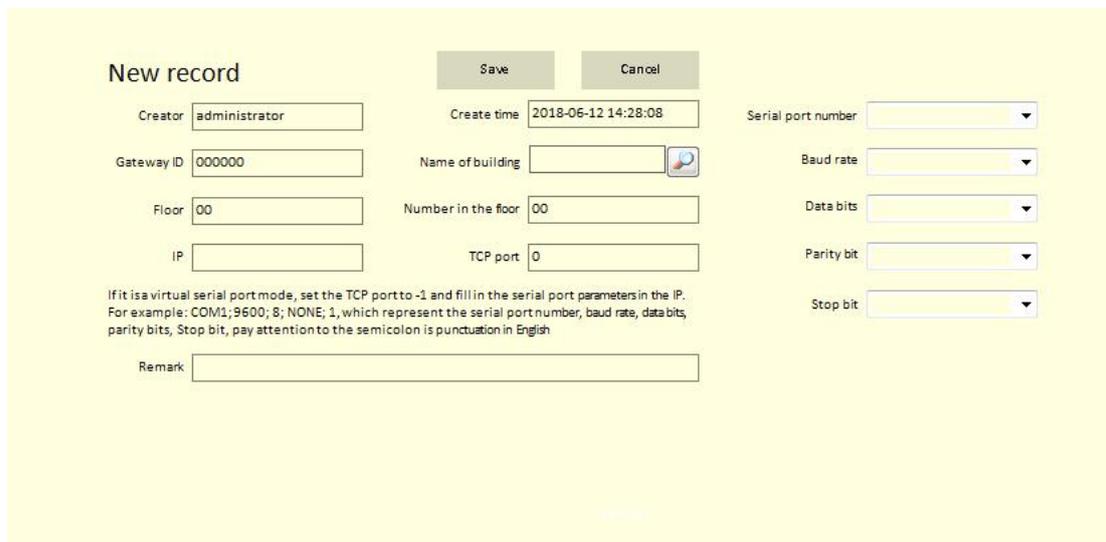
## 1.1.2. DPU settings

It can maintain all DPU information,including DPU ‘add’,’revise’,’delete’,’query’ and ‘export print’,the operating process can refer 1.1.1.

The user interface is as below picture:



Information maintenance page is shown as below,the properties include building name,floor,number in the floor ,IP,TCP port and remark,the user can click magnifying icon on the right of the building name,and choose buildings that need to be appointed in the pop-up building select list.It should be noticed that floor,number in the floor and TCP port can only be filled with integers.



**New record** Save Cancel

Creator  Create time  Serial port number

Gateway ID  Name of building  Baud rate

Floor  Number in the floor  Data bits

IP  TCP port  Parity bit

Stop bit

If it is a virtual serial port mode, set the TCP port to -1 and fill in the serial port parameters in the IP. For example: COM1;9600;8;NONE;1, which represent the serial port number, baud rate, data bits, parity bits, Stop bit, pay attention to the semicolon is punctuation in English

Remark

### 1. 1. 3. Electricity meter settings

This function is used for maintaining information of all electricity meters, equally also providing the function of 'add', 'delete', 'query' and 'export print', besides, considering there will be more electricity meters, it also supports 'batch import' operation and it will be more convenient for the operator to add electricity meters.

About 'Add', 'delete', 'query' and 'export print' operations, please refer operating process in 1.1.1.

About batch import operation, please see electricity meters settings page shown as below picture 1-1-4, the user only needs to click 'batch import' button above the list and then choose local excel about electricity meters that needs to be imported. It should be noticed that please fill in the excel in accordance with the template (picture 1-1-5 shown as below) and then import the excel.

Equipment Management      Role setting

Welcome   Meter settings   Gateway settings

Start date: 12 June, 2018   End date: 12 June, 2018   Search

Keywords: \_\_\_\_\_

Select all   Add   Delete   Export print   Batch Import   TestSMB

Last   Next   [ : / 1 ]   [Each 50C / Total 44]

Create time	MeterID	Communication management machine number	Room id	Model	Whether PostPay meter	CT transformation ratio	Remark
2018-06-12 14:30:11	020103031E	020103	453	DTSF1355	True	1	
2018-06-12 14:30:11	020103031D	020103	452	DTSF1354	True	1	
2018-06-12 14:30:11	020103031C	020103	451	DTSF1353	True	1	
2018-06-12 14:30:11	020103031B	020103	450	DTSF1352	True	1	
2018-06-12 14:30:11	020103031A	020103	449	ACR240	True	1	
2018-06-12 14:30:11	0201030319	020103	448	PZ42	True	1	
2018-06-12 14:30:11	0201030318	020103	447	DDSY	Fabe	1	
2018-06-12 14:30:11	0201030317	020103	446	DDSY	Fabe	1	
2018-06-12 14:30:11	0201030316	020103	445	DDSY	Fabe	1	
2018-06-12 14:30:11	0201030315	020103	444	DDSY	Fabe	1	
2018-06-12 14:30:11	020102020E	020102	336	DDSY	Fabe	1	
2018-06-12 14:30:11	020102020D	020102	335	DDSY	Fabe	1	

Picture1-1-4

导入.xls

H6

	A	B	C	D	E	F	G
1	通讯管理机编号	IP	通讯端口	串口号	表地址	户号	型号
2	020304	192.168.11.127	1111	1	1	301	DDSY
3	020304	192.168.11.127	1111	1	2	302	DDSY
4	020304	192.168.11.127	1111	1	3	303	DDSY
5	020304	192.168.11.127	1111	1	4	304	DDSY
6	020304	192.168.11.127	1111	1	5	305	DDSY
7	020304	192.168.11.127	1111	1	6	306	DDSY
8	020304	192.168.11.127	1111	1	7	307	DDSY
9	020304	192.168.11.127	1111	1	8	308	DDSY
10	020304	192.168.11.127	1111	1	9	309	DDSY
11	020304	192.168.11.127	1111	1	10	310	DDSY
12	020304	192.168.11.127	1111	1	11	311	DDSY
13	020304	192.168.11.127	1111	1	12	312	DDSY
14	020304	192.168.11.127	1111	1	13	313	DDSY
15	020304	192.168.11.127	1111	1	14	314	DDSY
16	020304	192.168.11.127	1111	1	15	315	DDSY
17	020304	192.168.11.127	1111	1	16	316	DDSY
18	020304	192.168.11.127	1111	1	17	317	DDSY
19	020304	192.168.11.127	1111	1	18	318	DDSY

Sheet1   Sheet2   Sheet3

Picture1-1-5

## 1.2. Default parameter settings

For the convenience of follow-up action, this function provides some default settings for general parameters, mainly including 'default power threshold', 'time interval of automatic meter reading', 'default alarm amount', 'hoarding amount upper limit',

'default electricity price' and so on. Page of the function is as below, click 'save' button after filling in all the information.

Default power threshold: this value will be taken in for overload threshold alarm settings when user opens the account.

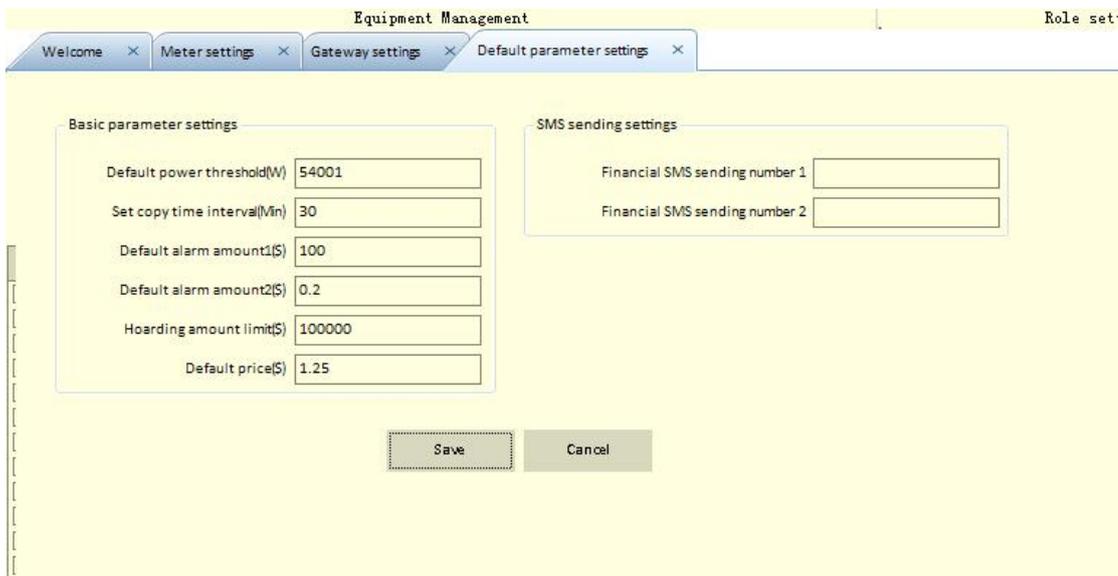
Time interval of collecting meter reading: it is used for setting time interval of automatic meter reading in meter reading system and it is measured by minutes.

Default alarm amount: this value will be taken in for meter remaining amount alarm settings;

Hoarding amount upper limit: this value will be taken in for setting upper limit of recharge amount.

Default electricity price: this value will be taken in for electricity price settings when user opens the account.

SMS sending settings: Financial No. 1 will receive SMS of alarm amount, arrearages of every user after financial SMS number is filled in.



Section	Parameter	Value
Basic parameter settings	Default power threshold(W)	54001
	Set copy time interval(Min)	30
	Default alarm amount1(\$)	100
	Default alarm amount2(\$)	0.2
	Hoarding amount limit(\$)	100000
	Default price(\$)	1.25
SMS sending settings	Financial SMS sending number 1	
	Financial SMS sending number 2	

## 1. 3. Permission settings

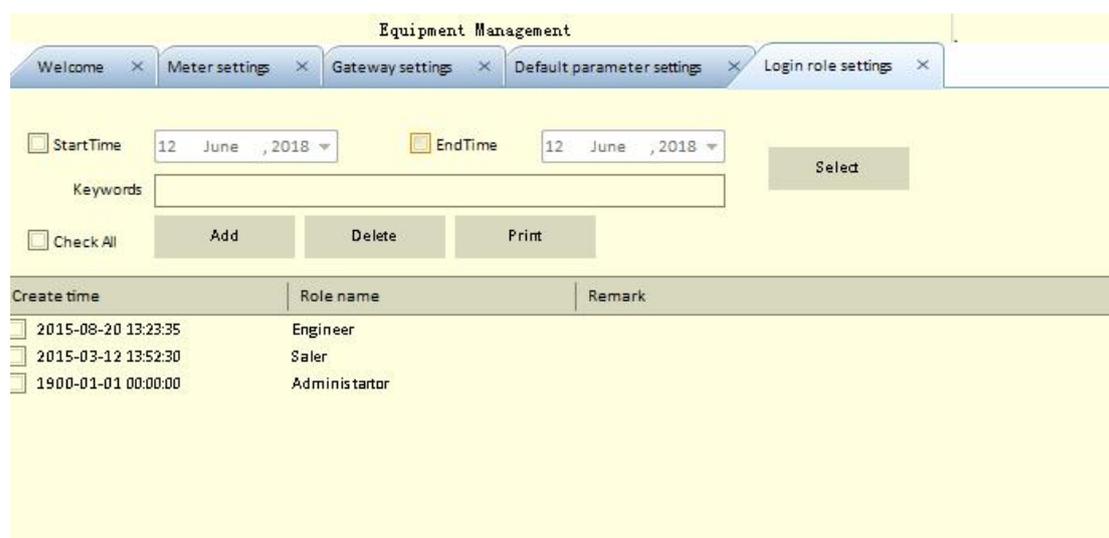
### 1. 3. 1. Role settings

This function consists of two parts: ‘login role settings’ and ‘operator settings’.

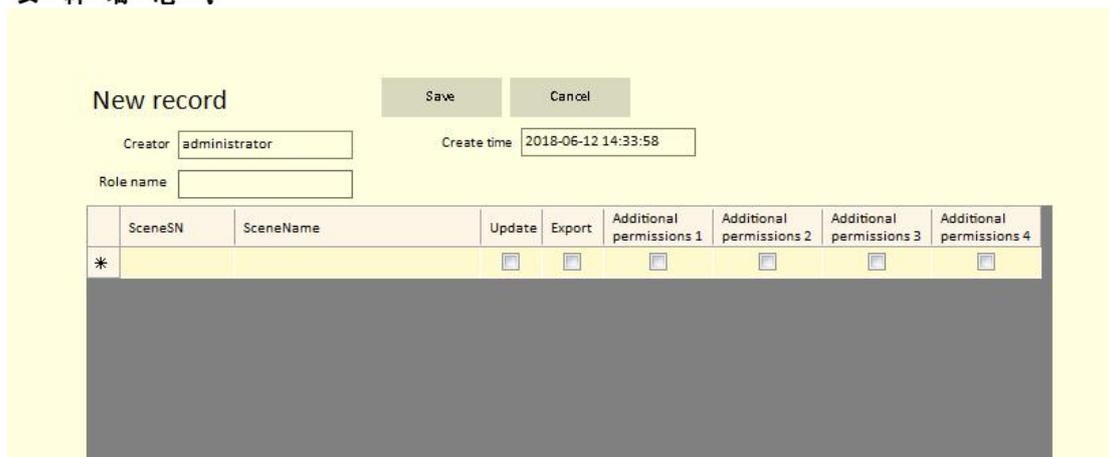
Login role settings is mainly for maintaining different properties or responsibilities of different operators, like ‘electricity seller’, ‘system administrator’ and other roles. And different operators have different permissions, this function page is as below picture 1-3-1.

Click ‘add’ button entering page shown as below picture 1-3-2, scene number and name in the picture represent responsibility and authority of the role, all the information can be added by means of custom and manual. Click ‘save’ or ‘modify’ button after filling in all information.

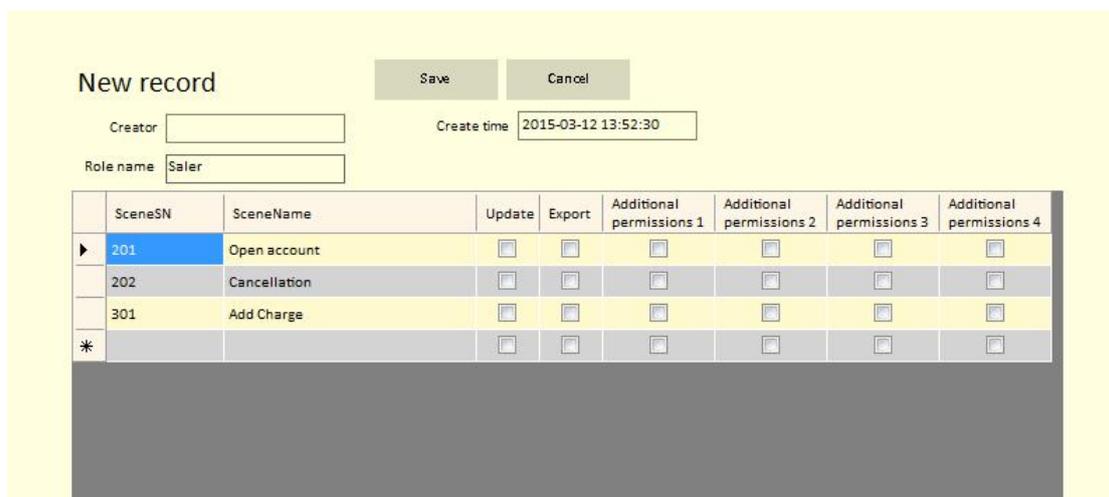
For ‘add’, ‘delete’, ‘query’ and ‘export print’ operation please refer to process in 1.1.1.



Picture1-3-1



Picture1-3-2



Picture1-3-3

Operator settings is used for maintaining information of the operators,the function includes operators' add,delete,query and export print operations.

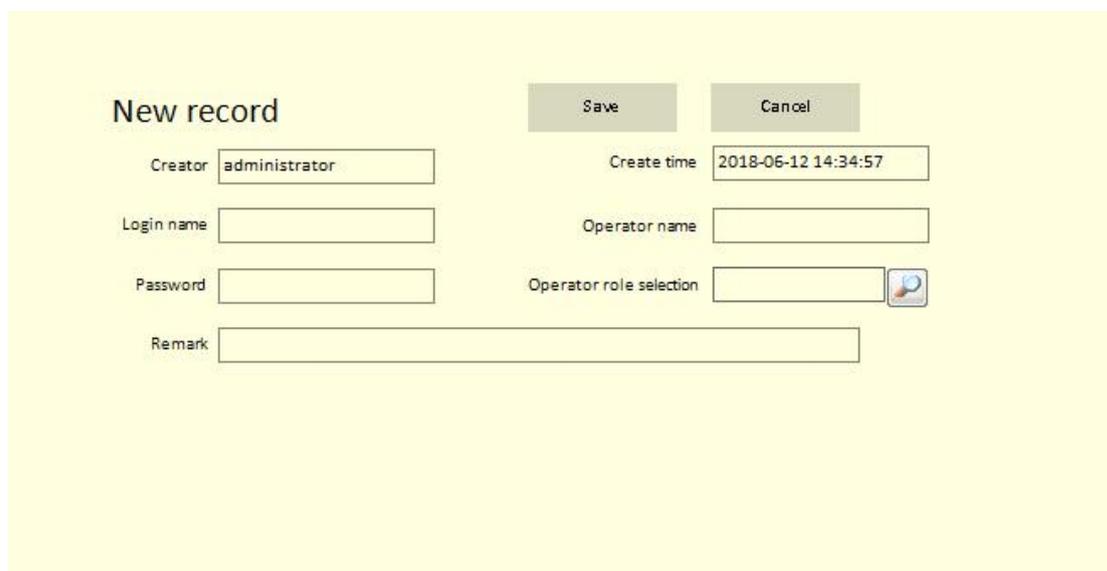
New add page is shown as below picture 1-3-5,login name,operator,name, password,operator role,selection,remark and other information can be filled in the table. Please maintain the login role before choosing the operator role. Click the magnifying icon and the role list appears. Role selection operation can be finished

by clicking appointed record in the list.

For ‘add’, ‘delete’, ‘query’ and ‘export print’ operation please refer to process in 1.1.1.



Picture1-3-4

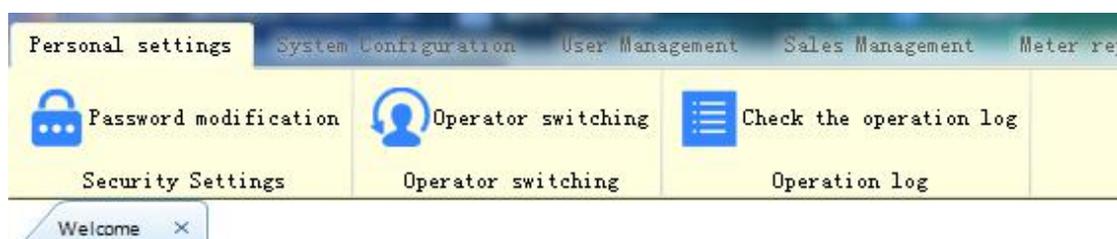


Picture1-3-5

RoleName	CreateTime	Remark
Administrator	1900-01-01 00:00:00	
Engineer	2015-08-20 13:23:35	
Saler	2015-03-12 13:52:30	

### 1. 3. 2. Personal settings

It mainly provides the operation of password change and user switch for current user. The password change is for the change of current login account. The personal operations interface is shown as below:

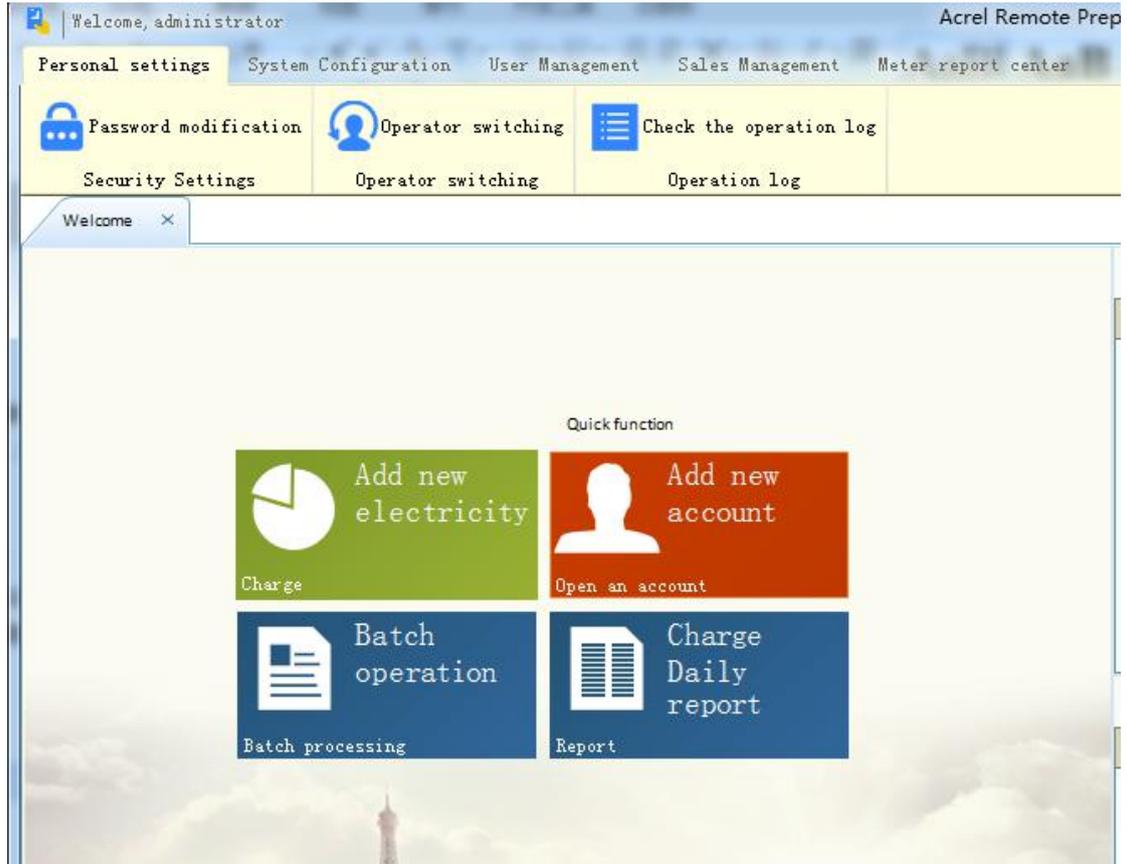


The interface of password revising is as below:

## 2. User management

### 2.1. User account opening

This function is mainly for user's information maintenance, including add, modify, user query and export print. For convenience, the system can enter user interface by two ways. Firstly, the user can enter account opening interface by clicking 'add new account' button in the shortcut function of welcome page, and the interface is shown as below picture 2-1. Secondly, the user can enter the account opening interface by clicking menu button on the top, as shown in below picture 2-2, user account opening menu of user management module, and the user can enter the account opening interface by clicking the button.



Picture 2-1



Picture 2-2

New accounts interface is shown as below picture 2-3, user relative information can be filled in the table, including user number, user name, query password, telephone, address, remark and so on.

The user can also add and delete relative user meters, and the select box shown as

below picture 2-4 will pop up when user clicks ‘new user meter’ button. The meter select list will pop up when user clicks magnifying icon on the right of the meter id, and the user can choose meter id by clicking appointed record of meter select list,at last,the user can click ‘save’ button to finish ‘new user meter’ adding operation.

One user meter can be connected to one or several user meters,after filling in all information shown as picture 2-3,the user can click ‘save’ button to finish ‘account opening’,the page will pop up shown as below page and the account opening operation can be finished by clicking ‘confirm and download’ button.

**New record** Open account Cancel

Creator: administrator CreateTime: 2018-06-12 14:36:58

User ID: 000001 UserName:

Query password:  Tel:

Address:

Remark:

**New user meter**

Meter ID	RoomID	Accumulated electricity purchase/water amount	Electricity purchase/water	ectric/wate meter	See more

**Picture 2-3**

After clicking new user meter,the user can click ‘get the current amount of the meter’ reading the current remaining amount of the energy meter,it will be convenient for user to transfer current remaining amount to new meter before

opening account. Please notice that when the user needs to transfer the amount of original meter to the new meter, the recharge amount filling in ‘first time recharge(USD)’ table should be equal to ‘original table amount transferred’ plus actual payment amount.

‘Allowed maximum’, ‘electricity price’ and ‘power threshold’ are also from allocated parameters of ‘default parameter settings’, and every meter setting can be personalized.

Field Name	Value
Meter id	
RoomID	
First time recharge	0
Allowed maximum	0
Alarm amount 1 (\$)	100
Alarm amount 2 (\$)	0.2
Electricity type	Commercial electricity
Accumulated electricity p...	0
Accumulated power...	0
Original table amount transferred	0
Power threshold (W)	54001
Point price (\$)	1.25
Peak price (\$)	1.25
Flat price (\$)	1.25
Valley price (\$)	1.25
Alarm amount 1 prompt alarm	<input checked="" type="checkbox"/>
Automatically send alarm SMS	<input checked="" type="checkbox"/>
Alarm amount 2 prompt alarm	<input checked="" type="checkbox"/>

Picture 2-4

Table parameter confirmation to be downloaded

Confirm and download  
Return to edit

Meter id: 0202010105

RoomID: 125

First time recharge: 0

Allowed maximum: 0

Alarm amount 1(\$): 100

Alarm amount 2(\$): 0.2

Electricity type: Commercial electricity

Accumulated electricity p...: 0

Accumulated power...: 0

Get the current amount of the meter

Original table amount transferred: 0

Power threshold (W): 54001

Point price(\$): 1.25

Peak price(\$): 1.25

Flat price(\$): 1.25

Valley price(\$): 1.25

Alarm amount 1 prompt alarm

Alarm amount 2 prompt alarm

Automatically send alarm

Picture 2-5

The user list page will pop up when the user completes account opening or clicks ‘cancellation’ button, the picture is as shown below. It supports query and export print operations.

Batch setup | Cancellation | Open account

Welcome | Open account | Account record query

Start Time: 12 June, 2018 | End Time: 12 June, 2018 | Instrument number: | Search

User ID: | User Name: | Room ID: | Print

Last | Next | [ : / 0 ] [Each 50C / Total C]

Create time	Creator	User id	User name	Phone	Contact address	Remark	Account cancellation time

The account opening function supports one user with multiple meters, and the

user can add new user meter under the state of account opening.

## 2.2. Account opening record query

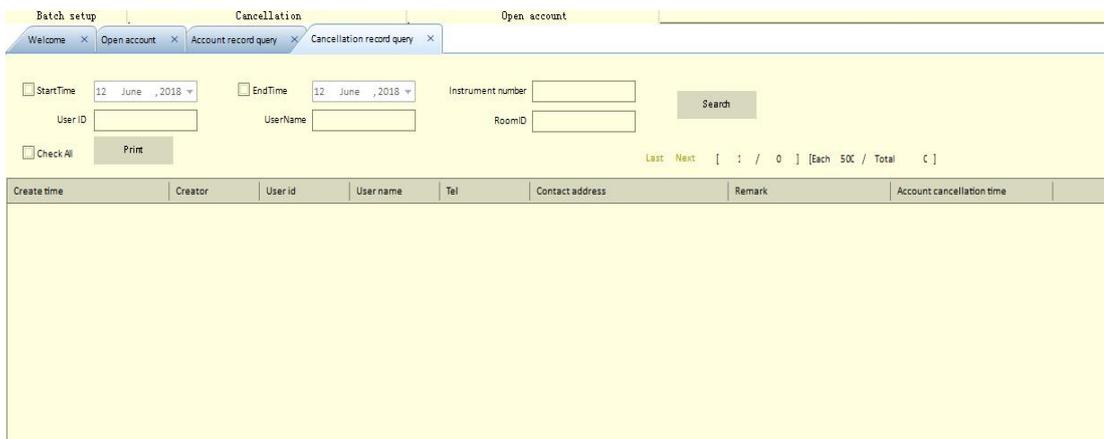
This function is mainly for account opening record operation, the picture is as below.

The user can choose start and stop date, user name and user ID, and click 'query' button to query relative record. This function also supports export print operation.



## 2.3. User account cancellation

This function is mainly for user account cancellation, the page is shown as picture 2-2-1, the user can double click the appointed record in the list and the cancellation function page will pop up. After carefully checking and confirming the record, the user can click 'cancellation' button, enter the confirm page, and click 'confirm and download' button, then the user can cancel the account.



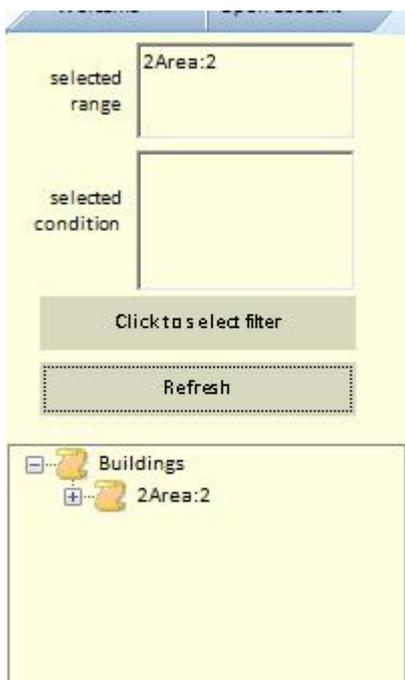
## 2.4. Electricity meters batch operation

This function provides batch power on, power off, issue settings, state selection, issue and query operations. It can provide 'electricity price issue', 'issue settings', 'enforced close', 'switch off', 'prepayment recovery' and 'power threshold' to some user or several users at the same time.



Select	Meter ID	Room ID	User ID	User Name	cumulative	Purchase times	Alarm amount1	Alarm amount2	Power threshold	Remaining amount(\$)	cumulative(h)	Real time power	Is arrears	Already opened	Forced mode	Closing state	Is unconnect	Collection time
<input type="checkbox"/>	0202010101	121		UnOpened														
<input type="checkbox"/>	0202010102	122		UnOpened														
<input type="checkbox"/>	0202010103	123		UnOpened														
<input type="checkbox"/>	0202010104	124		UnOpened														
<input type="checkbox"/>	0202010105	125		UnOpened														
<input type="checkbox"/>	0202010106	126		UnOpened														
<input type="checkbox"/>	0202010107	127		UnOpened														
<input type="checkbox"/>	0202010108	128		UnOpened														
<input type="checkbox"/>	0202010109	129		UnOpened														
<input type="checkbox"/>	020201010A	130		UnOpened														
<input type="checkbox"/>	020201010B	131		UnOpened														
<input type="checkbox"/>	020201010C	132		UnOpened														
<input type="checkbox"/>	020201010D	133		UnOpened														
<input type="checkbox"/>	020201010E	134		UnOpened														
<input type="checkbox"/>	020201010F	135		UnOpened														
<input type="checkbox"/>	0202010110	136		UnOpened														
<input type="checkbox"/>	0202010111	137		UnOpened														
<input type="checkbox"/>	0202010112	138		UnOpened														

Firstly, the user can choose one area required query, picture is as below:



selected range: 2Area:2

selected condition:

Click to select filter

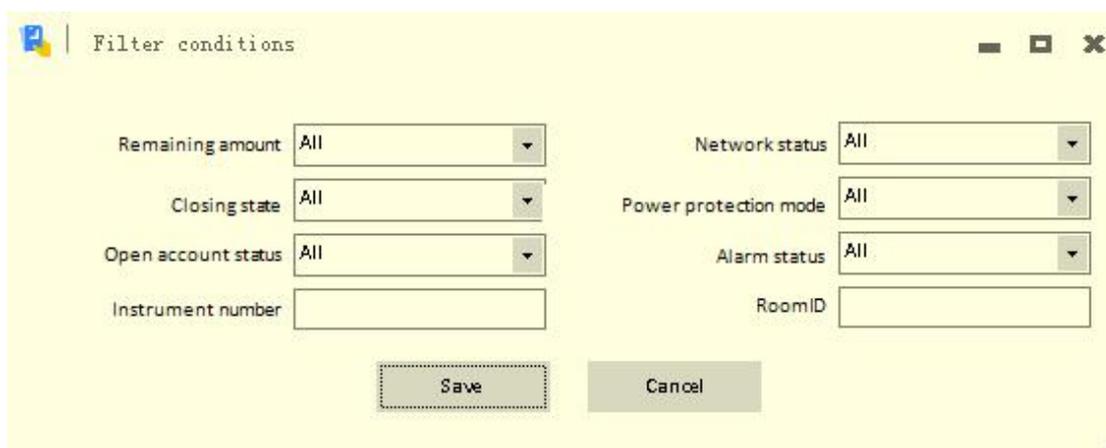
Refresh

Buildings

- 2Area:2



Then click and the window pops up and the user can select the following table under filter conditions:



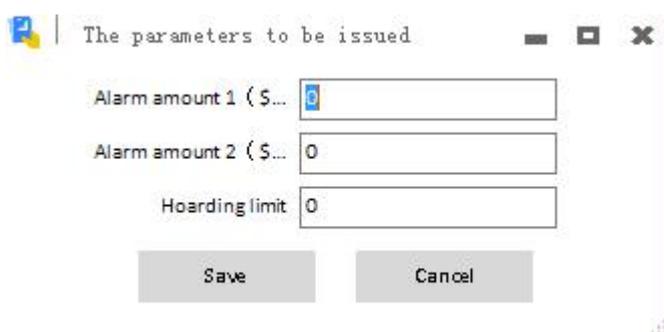
The user can click 'refresh' after clicking 'save' button, and can get current user meters list and state under filter conditions in the area, the following is the list mode:

The user can right-click on some record under list mode, and two right-click menu is provided as followings:

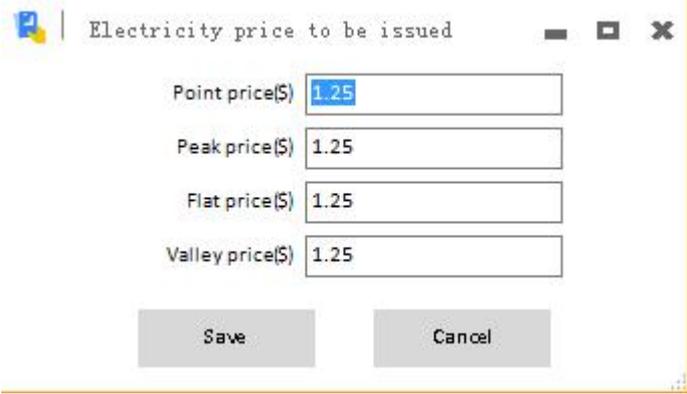
1. Refresh meter state: constant refreshment of single meter state.
2. Historical meter reading record: it provides input time period and query historical meter reading record of single meter.



1. Please set some parameter before issuing electricity price, the user can choose appointed user, click 'issue settings' button, and the information table pops up, then the user can click 'save' button after setting the relative information.



2. The user clicks 'electricity price issue', fills in electricity price and clicks 'save' button, the electricity issue operation will be completed. (see below picture)



Electricity price to be issued

Point price(\$)	<input type="text" value="1.25"/>
Peak price(\$)	<input type="text" value="1.25"/>
Flat price(\$)	<input type="text" value="1.25"/>
Valley price(\$)	<input type="text" value="1.25"/>

3. The user clicks ‘enforce close’, ‘enforce power cut’ and ‘prepayment recovery’, the instruction issue page will pop up, and the user needs to click ‘confirm and download’ button finishing the relative operation.

Confirm and download

Shut Down

Shop Number	Table number	Whether it is lost	Communication ...
E406	01010101BA	False	

Total:

Noun Note:

Firstly,the user should know what is prepayment mode defined in the system: prepayment mode means the electricity meters will automatically trip after arrearage;Conversely,when enforcing mode turned on,the prepayment mode will automatically close,and the electricity meters won't trip after arrearage,the electricity meters will continue to charge and the remaining amount will be negative.

The functions of 3 push buttons are as followings:

Enforced switch on:it can keep power-up mode,it will not trip after arrearages.

the meter will continue measure electricity when the amount is negative.

Enforced switch off:do switch off operation immediately,and the meter will not affected by other state,electricity will recover until the meter receive switch on or prepayment recovery command.

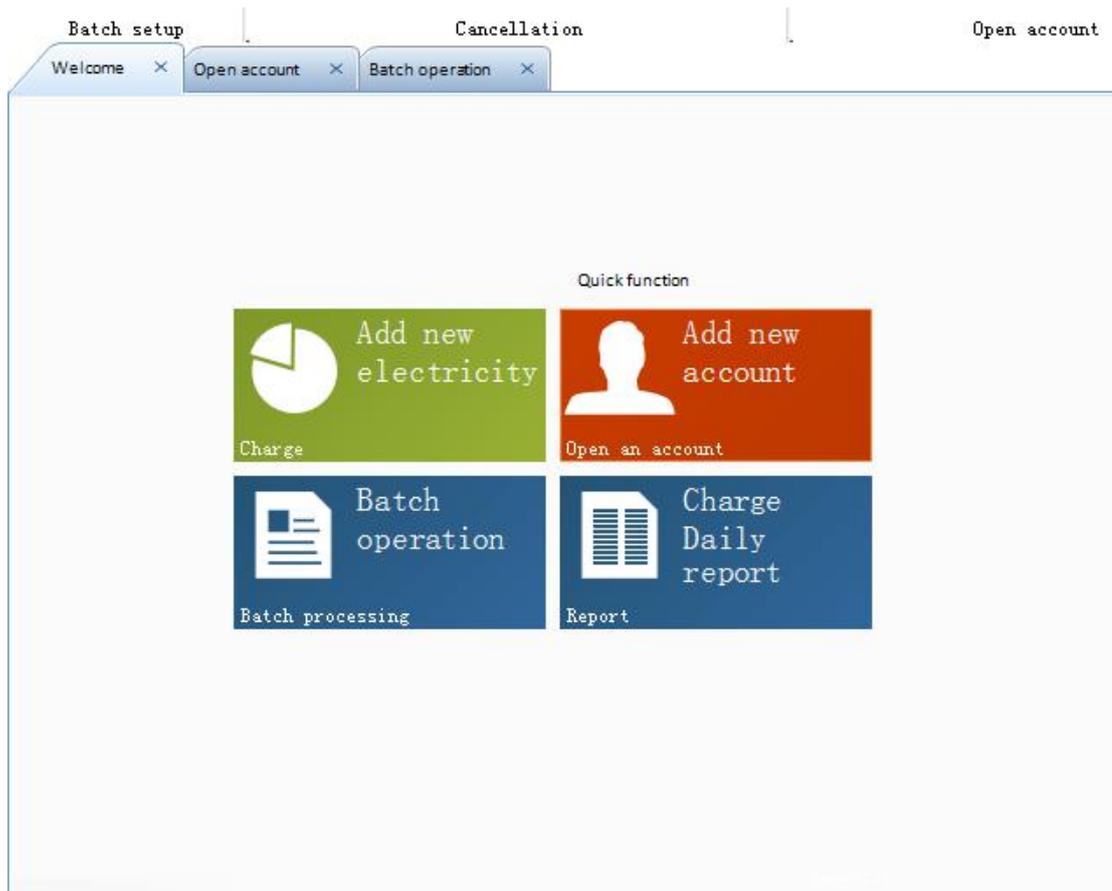
Prepayment recovery: recover the meter to prepayment mode ,and close the enforced mode,if the amount is positive,the meter will recover normal power state,if it is in the state of switch off it will also switch on immediately;if the amount is negative on the meter it will strip immediately.

## **3. Electricity selling management**

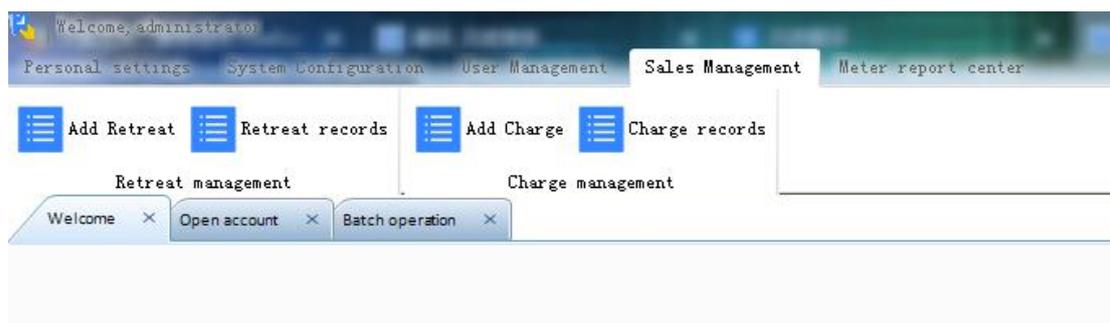
### **3. 1. Electricity selling**

This function is mainly for electricity selling by operators,the operators can enter the electricity selling page by clicking the shortcut for welcome page or clicking ‘add new electricity’ in the electricity selling management.Picture are shown as 3-1 and 3-2.

The electricity selling page is shown as picture 3-3,the user list page will pop up when user clicks the magnifier icon on the right of select meter text,user can be chosen by double clicking the user in the list and user’s detail information will be automatically filling in the user information table under the electricity selling page.After filling in the recharge amount,payment method and remark, the electricity selling operation will be finished by clicking ‘save’ button.



Picture 3-1



Picture 3-2

### New record

Creator:  CreateTime:

Select meter  

Recharge amount(\$)  Payment method

Remark

---

Room ID	<input type="text"/>	Meter ID	<input type="text"/>
User Name	<input type="text"/>	User ID	<input type="text"/>
Purchase times	<input type="text"/>	Accumulative(\$)	<input type="text"/>
Remaining amount(\$)	<input type="text"/>	Maximum amount(\$)	<input type="text"/>
Closing state	<input type="text"/>	Power threshold	<input type="text"/>
Alarm status1	<input type="text"/>	Forced mode	<input type="text"/>
Alarm amount1	<input type="text"/>	Alarm status2	<input type="text"/>
Is arrears	<input type="text"/>	Alarm amount2	<input type="text"/>

Picture 3-3





Picture 3-5

### 3.3. Electricity retreat

The function is mainly used for electricity retreat operation by operators, the operation can be referred to electricity query shown as 3.1, after filling in the retreat information, the electricity retreat operation can be finished by clicking 'retreat' button. (picture shown as below)

### New record

Creator:       CreateTime:

Select meter  

Refund amount(\$)       Payment method

Remark

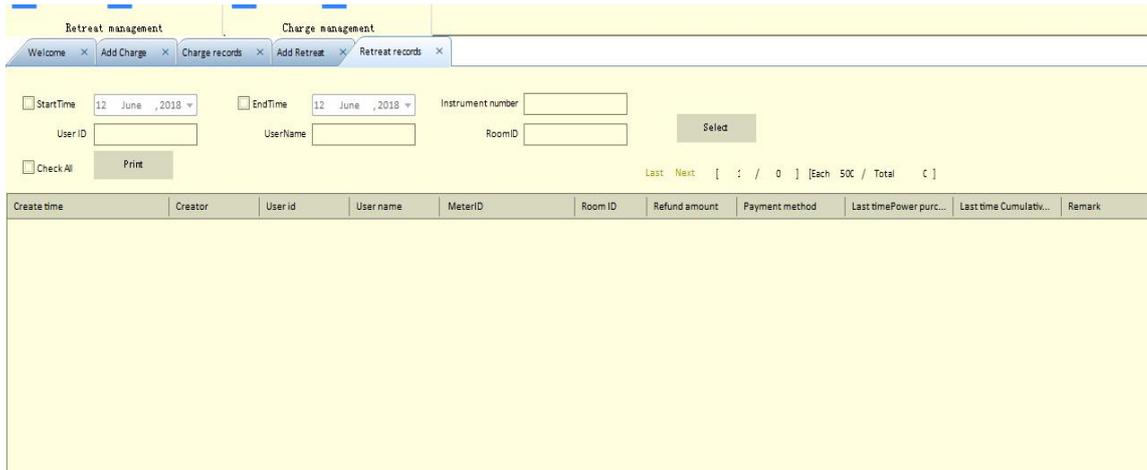
  

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Room ID <input type="text"/>	Meter ID <input type="text"/>
User Name <input type="text"/>	User ID <input type="text"/>
Purchase times <input type="text"/>	Accumulative(\$) <input type="text"/>
Remaining amount(\$) <input type="text"/>	Maximum amount(\$) <input type="text"/>
Closing state <input type="text"/>	Power threshold <input type="text"/>
Alarm status1 <input type="text"/>	Forced mode <input type="text"/>
Alarm amount1 <input type="text"/>	Alarm status2 <input type="text"/>
Is arrears <input type="text"/>	Alarm amount2 <input type="text"/>

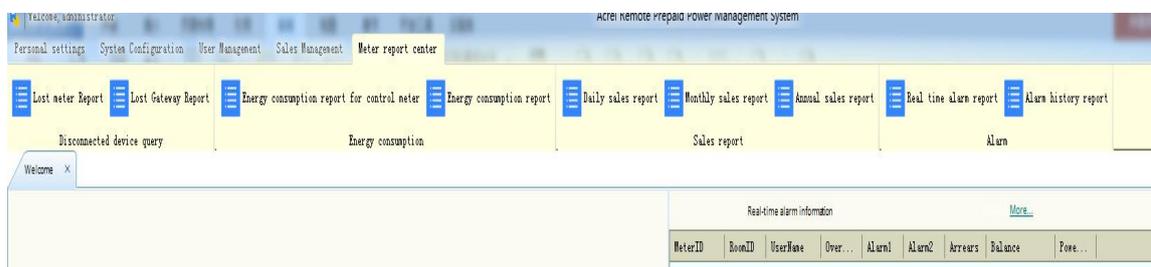
### 3.4. Electricity retreat query

It is mainly used for query the electricity selling record by operators, the operation can be referred to electricity query shown as 3.1 (picture shown as below). Equally this function also supports the export print operation.



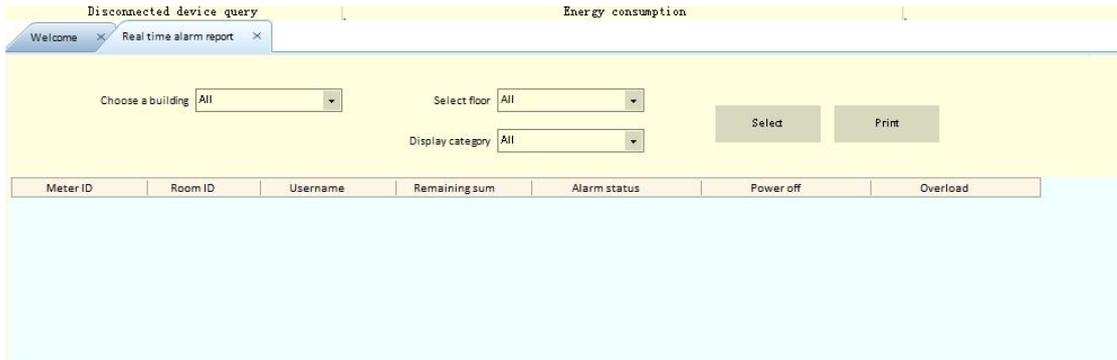
## 4. Electricity meters report centre

The report centre provides various statistical data of various time units, and it can also inquiry and export print the report. The report centre mainly consists of constant alarm record report, daily sales report, monthly sales report and annual sales report.



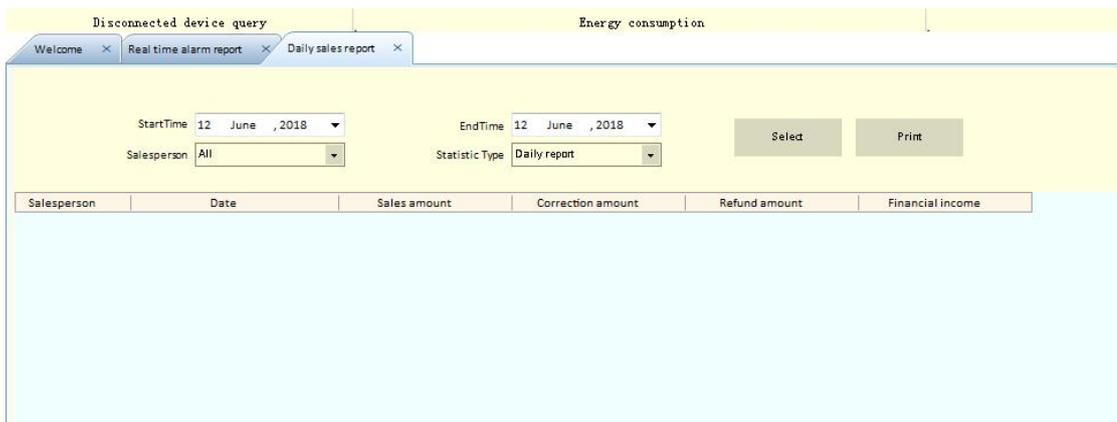
### 4. 1. Constant alarm record report

It is used for counting constant alarm record, picture as below, chose query buildings, floors and alarm category, all the data of some alarm category in the floor can be counted by clicking 'query' button. The data report can be printed by clicking 'export print' button.



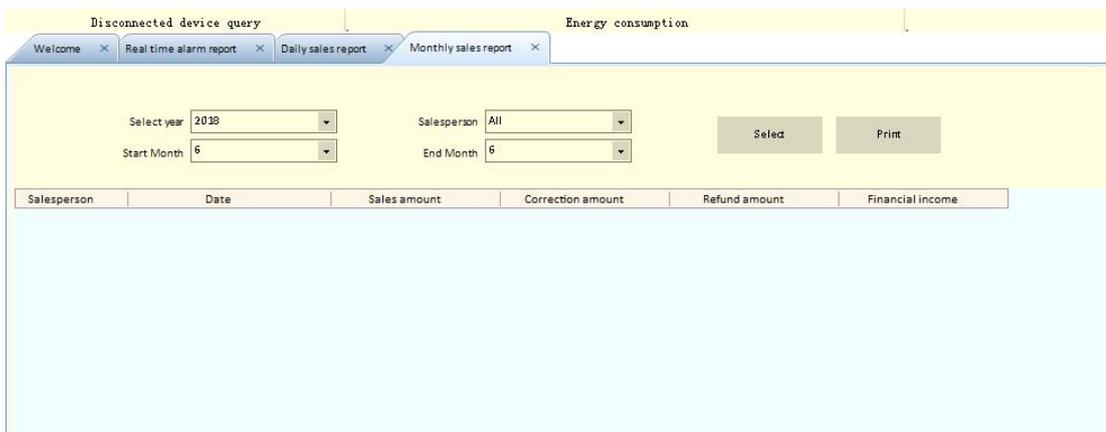
## 4.2. Daily sales report

It can provide data query and statistics of electricity selling and retreat, the data takes day as a statistical unit, chose start and stop date, electricity seller, all electricity selling and retreat record within a period of time can be counted by clicking ‘query’ button, and the data report can be printed by clicking ‘export print’ button. (picture is shown as below)



### 4. 3. Monthly sales report

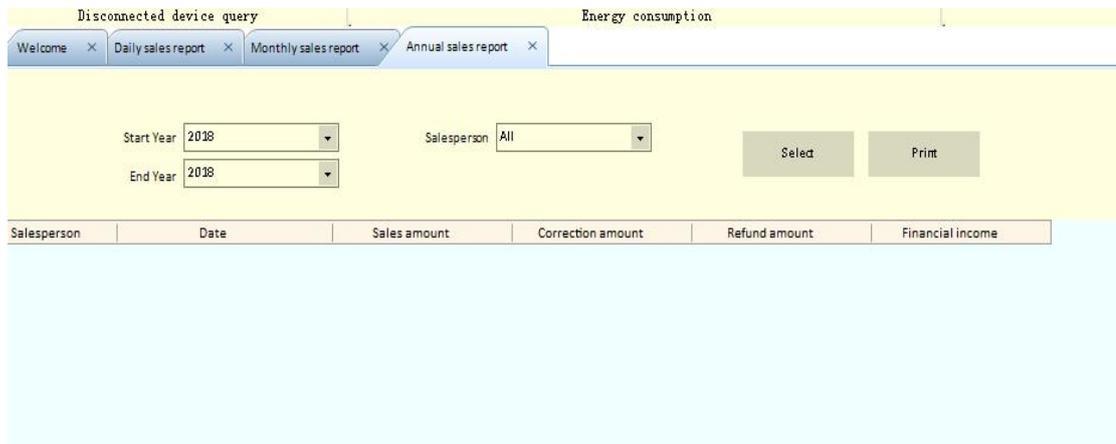
It can provide data query and statistics of electricity selling and retreat,the data takes month as a statistical unit,chose start and stop year,electricity seller,start and stop month,all electricity selling and retreat record within a period of time can be counted by clicking ‘query’ button,and the data report can be printed by clicking ‘export print’ button.(picture is shown as below)



Salesperson	Date	Sales amount	Correction amount	Refund amount	Financial income
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### 4. 4. Annual sales report

It can provide data query and statistics of electricity selling and retreat,the data takes year as a statistical unit,chose start and stop year,electricity seller,all electricity selling and retreat record within a period of time can be counted by clicking ‘query’ button,and the data report can be printed by clicking ‘export print’ button.(picture is shown as below)



Salesperson	Date	Sales amount	Correction amount	Refund amount	Financial income
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#### 4. 5. **Disconnected electricity meters report**

It can provide data query of disconnected electricity meters,the list can be refreshed by clicking ‘query’ button and the data report can be printed by clicking ‘export print’ button.

#### 4. 6. **Disconnected DUP report**

It can provide data query of DUP in the state of disconnection,the list can be refreshed by clicking ‘query’ button and the data report can be printed by clicking ‘export print’ button.

#### 4. 7. **Prepaid power consumption query report**

It can provide energy consumption report query within a period of time. The list can be refreshed by clicking ‘query’ button and the data report can be printed by clicking ‘export print’ button.



## 4.8. Historical alarm record report

Historical amount alarm or arrearage record can be selected by importing time slot, user, table information and other terms. Low current and low voltage alarm record of secondary wiring can be checked by selecting 'alarm record of secondary wiring'.

