

---

ABB MEASUREMENT & ANALYTICS | TECHNICAL BULLETIN 209

# **IEC Upgrade** XSeries<sup>G5</sup> and RMC-100

5 MARCH 2019 | 2106000



## Table of contents

<b>1</b>	<b>Upgrade IEC from Phase 1 to Phase 2</b>	<b>3</b>
1.1	Copy the new ini file to PCCU	4
1.2	Stop the Phase 1 IEC resource	5
1.3	Clear the IEC Phase 1 Resource	6
1.4	Delete the Phase 1 IEC Interfaces	6
1.5	Save the Config to TFCold	7
1.6	Work Around for bug 10692: 32-Bit Loader - Failed in warm starting the device	7
<b>2</b>	<b>Load the Phase 2 OS and Flash via 32-Bit Loader</b>	<b>8</b>
2.1	Load the Phase 2 Resource	10
2.2	Add the Phase 2 IEC licenses	11
2.3	Add Phase 2 IEC Interfaces	12
2.4	Run the Phase 2 IEC Resource	12

# 1 Upgrade IEC from Phase 1 to Phase 2

Due to changes in the software architecture of RMC, Phase 2 flash (v2.x.x) is not backward-compatible with Phase 1 (v1.x.x) IEC resources. Phase 1 IEC resources will not run on Phase 2 flash. IEC resources have been re-compiled to run on Phase 2 flash.

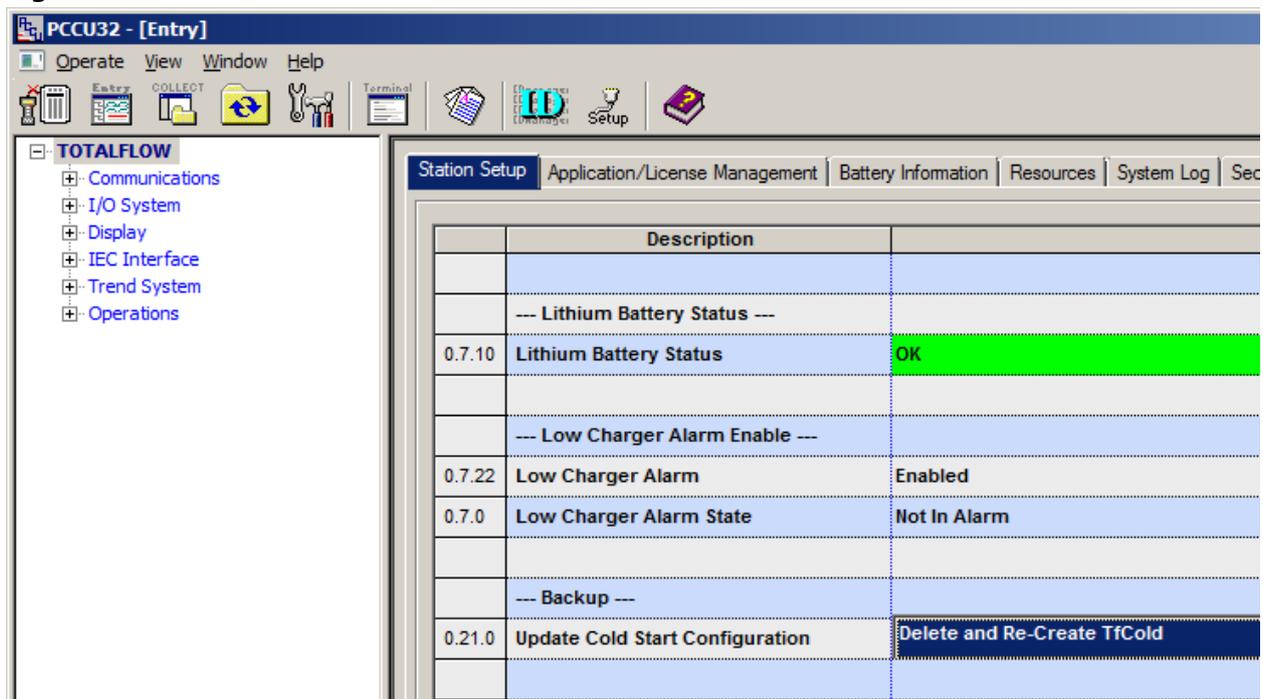
Customers need the new Phase 2 versions of IEC resources:

- Liquid Transfer
- Pump Control
- Well Management / Chemical Injection
- Well Test

Procedure:

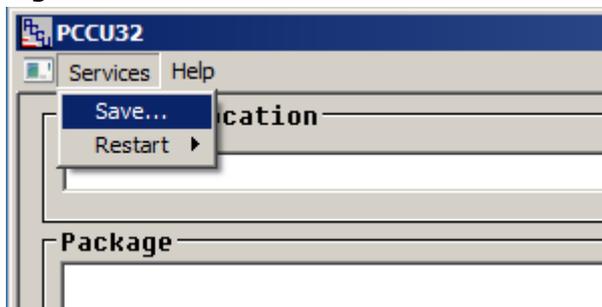
1. Save the configuration to TFCold:
  - a. Click **System App > Station Setup Tab**.
  - b. Click **Update Cold Start Configuration > Delete and Re-Crete TFCold**.

**Figure 1-1: Delete and Re-Crete TF Cold**



2. Save the Config via PCCU 32-Bit Loader:
  - a. Enter 32-Bit Loader and click **Services** in the top left corner.
  - b. From the dropdown, select **Save**.
  - c. Save the file.

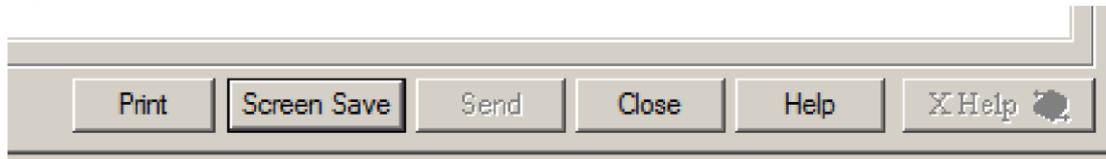
**Figure 1-2: Save**



**IMPORTANT NOTE:** Due to a limitation in the ISaGRAF persistence file, the IEC resource settings reset to default when installing a new version of the IEC resource (logic file).

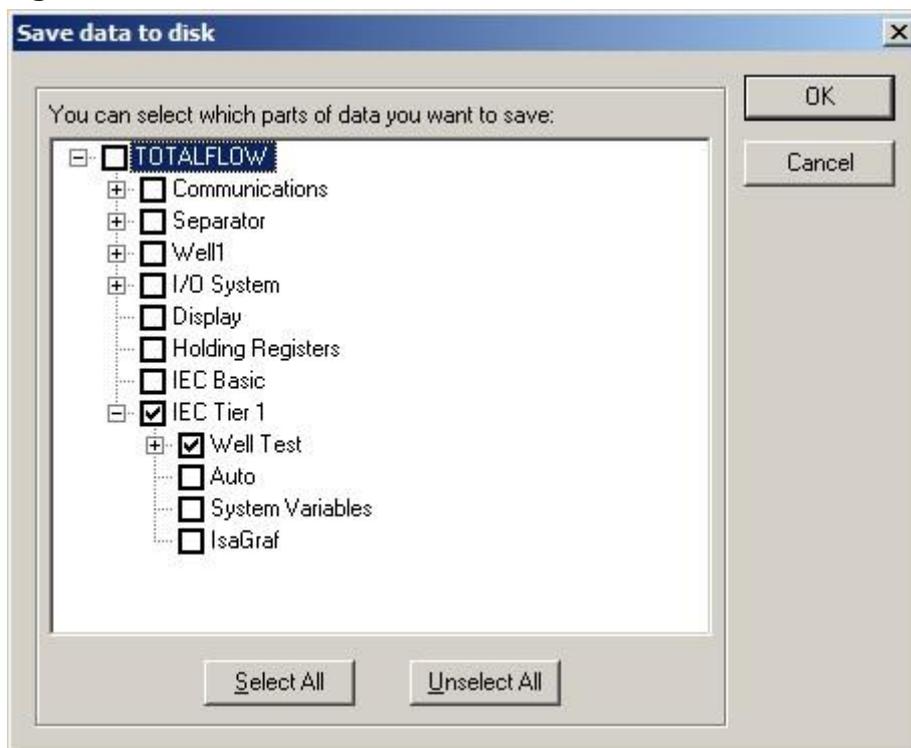
3. To save the IEC resource settings, use PCCU Screen Save:
  - a. Go to PCCU entry mode > **IEC Tier 1**.
  - b. Click **Screen Save**.

**Figure 1-3: Screen save button**



4. Select **IEC Tier 1**.
5. Clear:
  - Auto
  - System Variables
  - IsaGraf
6. Click **OK**.
7. Save the .fcu file to the PC hard drive.

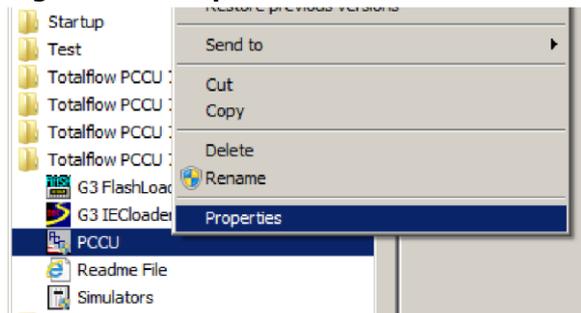
**Figure 1-4: Save data**



## 1.1 Copy the new ini file to PCCU

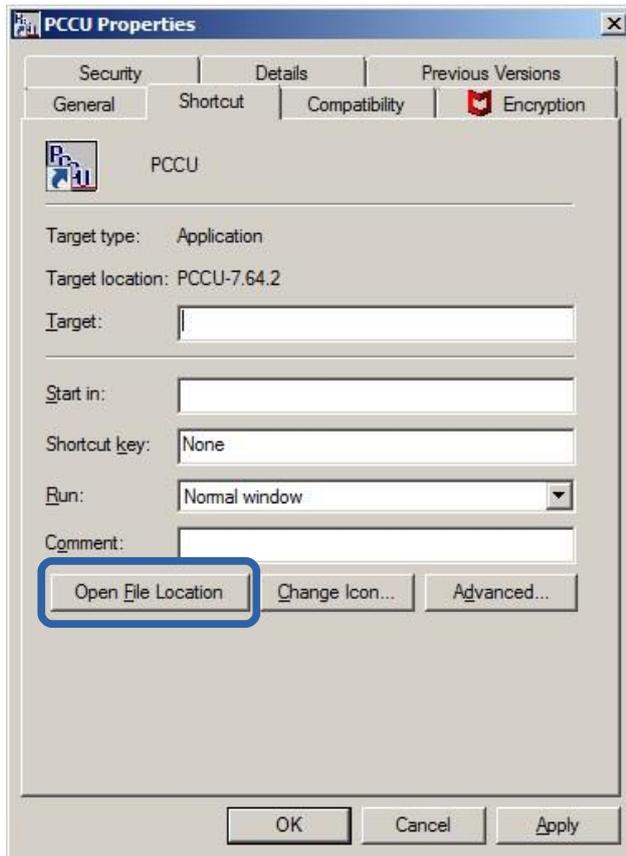
1. Right-click the PCCU shortcut and Select **Properties**.

**Figure 1-5: Properties menu**



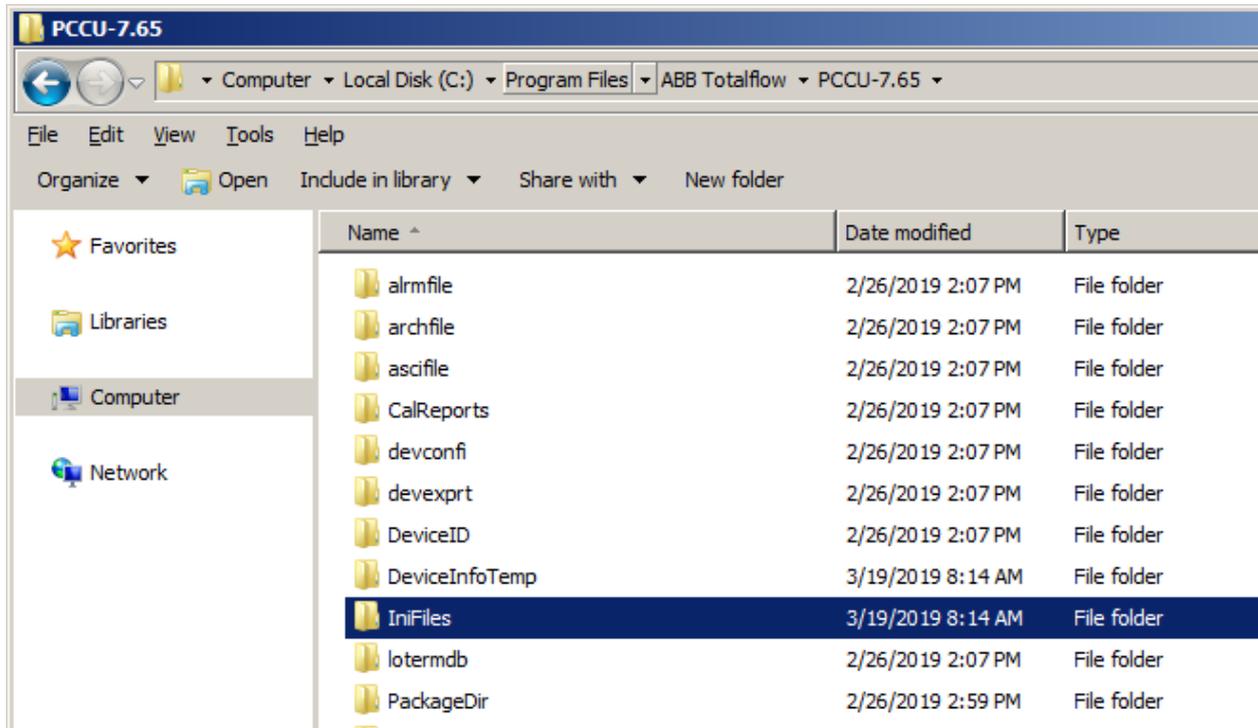
2. Click **Open File Location**.

**Figure 1-6: Open File Location button**



3. Copy the new ini file to the \IniFiles\ ....

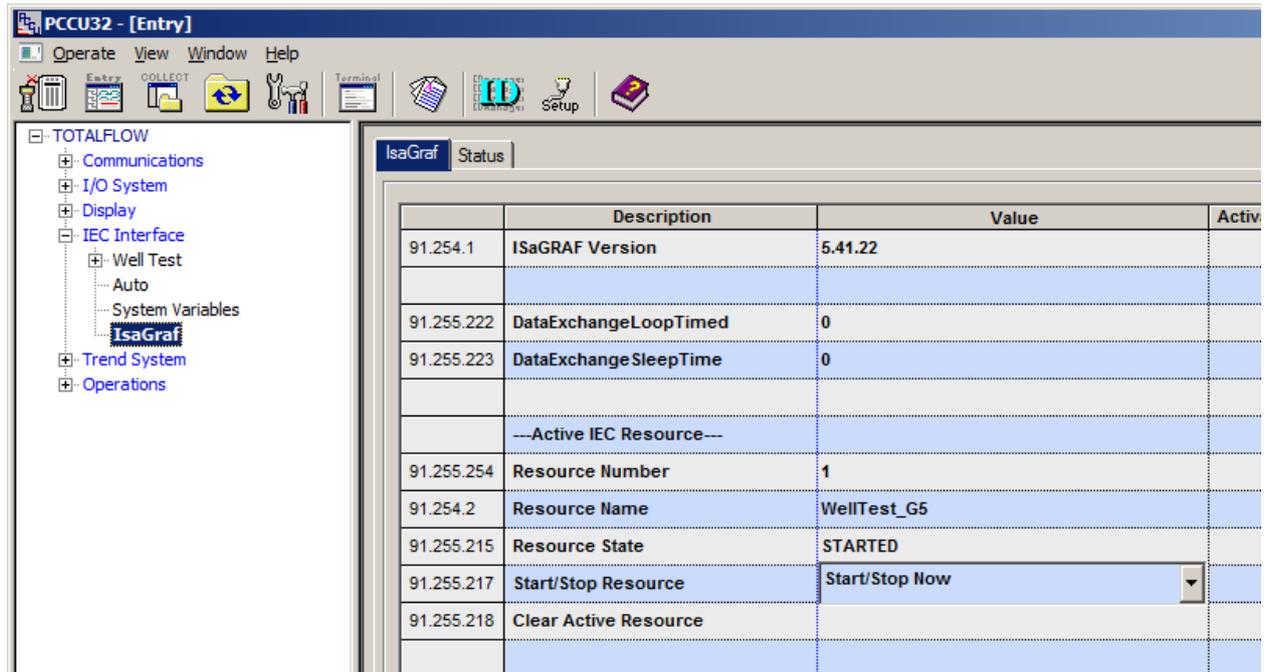
Figure 1-7: IniFiles Directory



## 1.2 Stop the Phase 1 IEC resource

1. In the IEC Interface, go to **IsaGraf > IsaGraf Tab**
2. Click **Start/Stop Resource > Start/Stop Now**

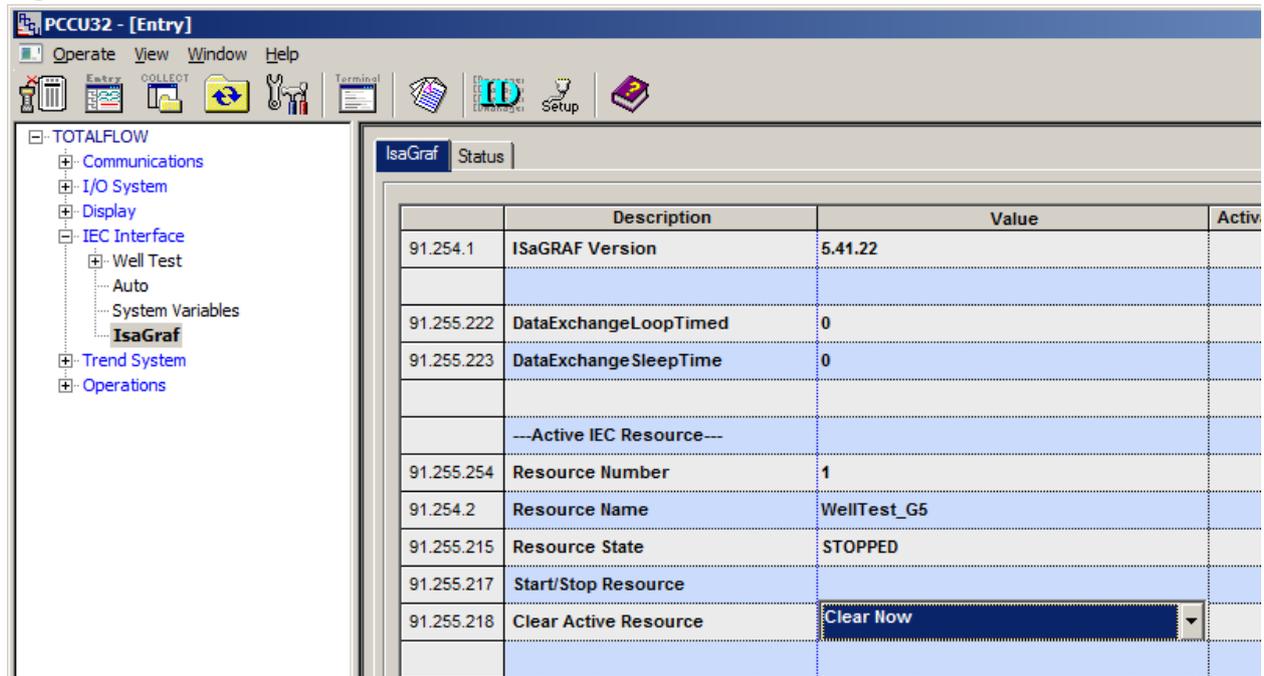
**Figure 1-8: Start/Stop Now**



### 1.3 Clear the IEC Phase 1 Resource

1. Go to the IEC Interface > **IsaGraf** > **IsaGraf** Tab
2. Clear **Active Resource** > **Clear Now**

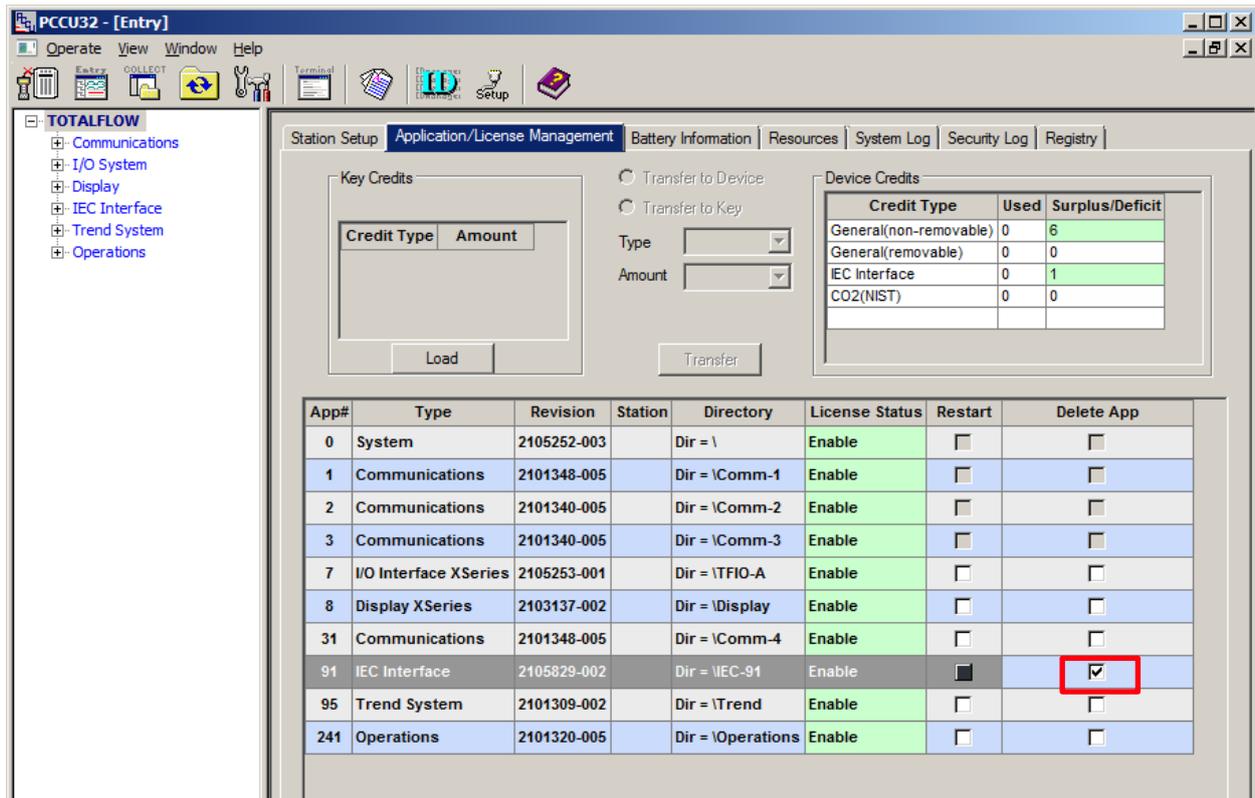
**Figure 1-9: Clear Now**



### 1.4 Delete the Phase 1 IEC Interfaces.

1. Go to **Station App** > **Application/License Management** tab
2. Select the **Delete App** checkbox.

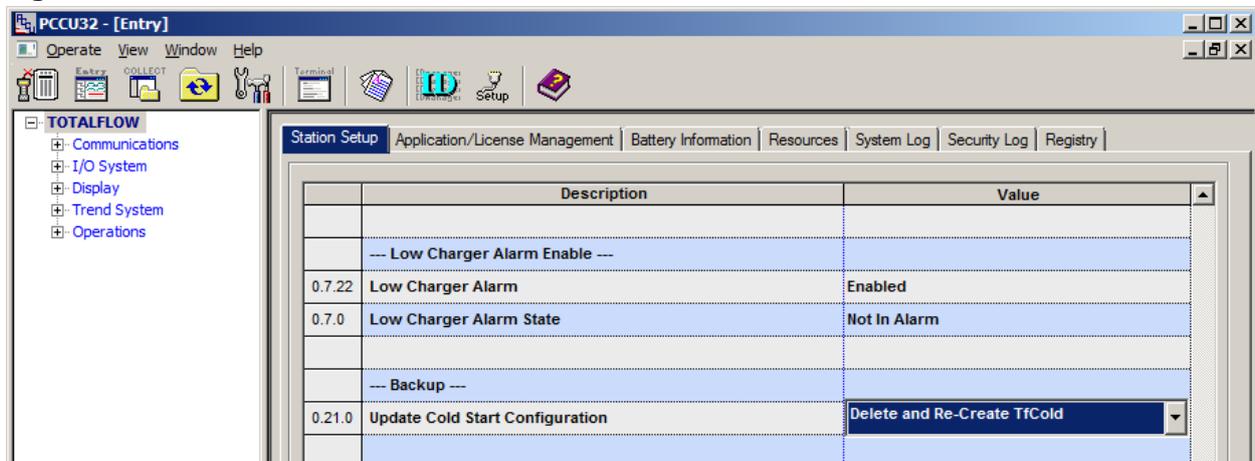
**Figure 1-10: Delete App checkbox**



## 1.5 Save the Config to TFCold.

1. Go to **Station App > Station Setup** Tab
2. Click **Update Cold Start Configuration > Delete and Re-Create TFCold.**

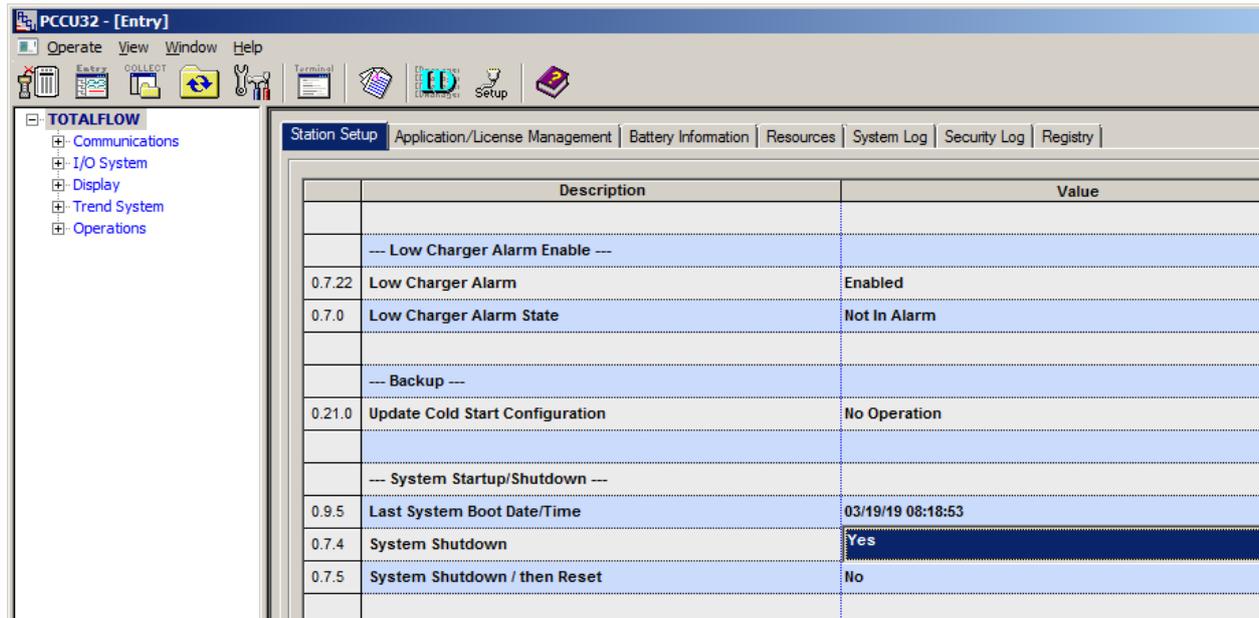
Figure 1-11: Delete and Re-Create TFCold



## 1.6 Work Around for bug 10692: 32-Bit Loader – Failed in warm starting the device.

1. Go to **Station App > Station Setup** Tab.
2. Scroll down to the System Shutdown/then Reset field. Click **YES.**

**Figure 1-12: System Shutdown / then Reset**



## 2 Load the Phase 2 OS and Flash via 32-Bit Loader

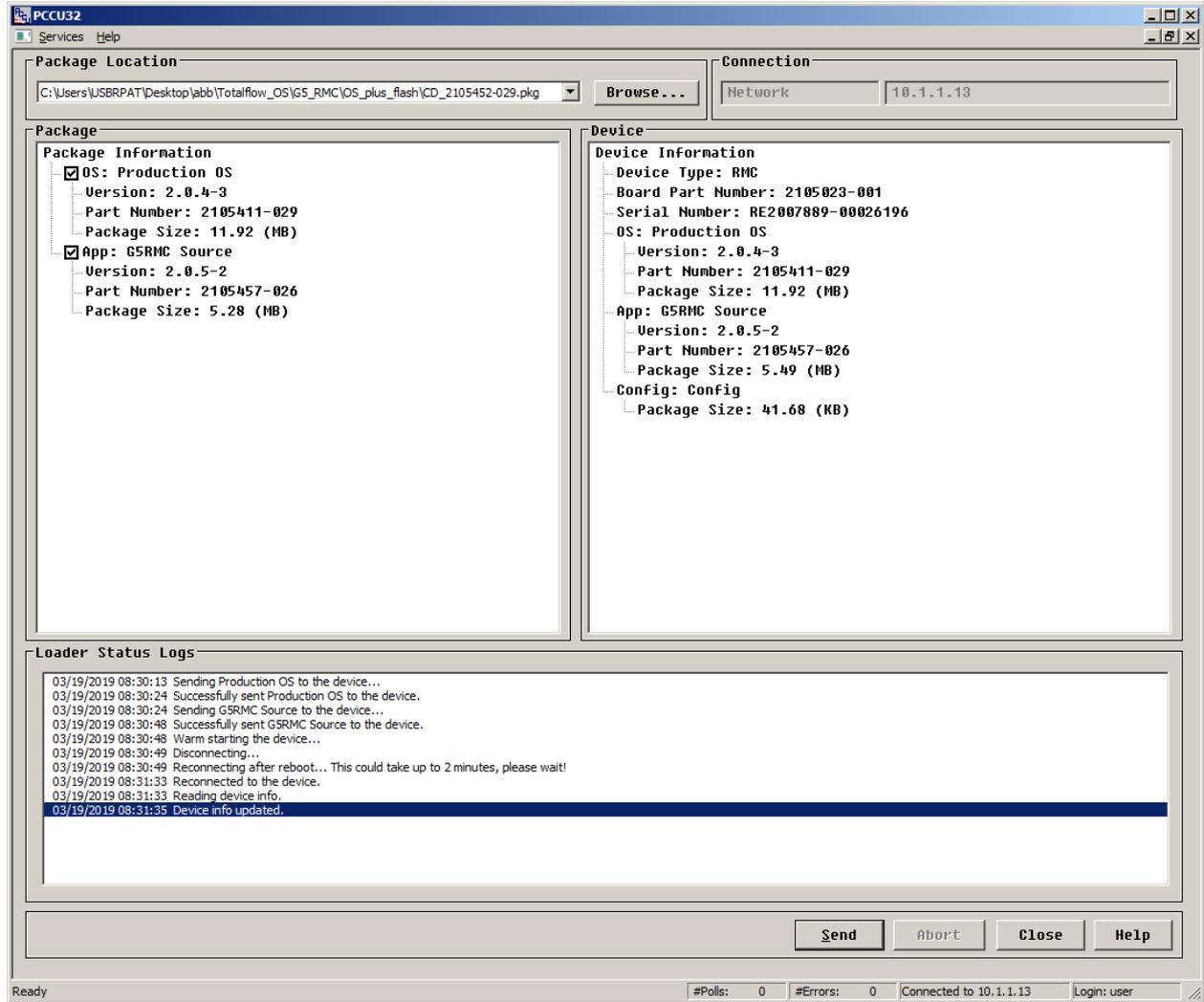
The IEC Phase 2 flash is not compatible with Phase 1 OS. The Phase 2 Flash and OS must be upgraded simultaneously. Use the CD package (part number: 2105452). Ensure both OS and Flash are selected before sending.

To load the Phase 2 OS and Flash:

1. Click the **32-Bit Loader** icon.
2. Click **Browse**.
3. Select **OS/Flash Package (2.0.2 or later)**.
4. Click **Send**.

After the upload is complete, ensure the correct versions are shown in the box on the right side of the screen. This can also be verified in the Status Logs. Find the lines that state "Successfully sent Production OS to device", and "Successfully sent G5RMC Source to device".

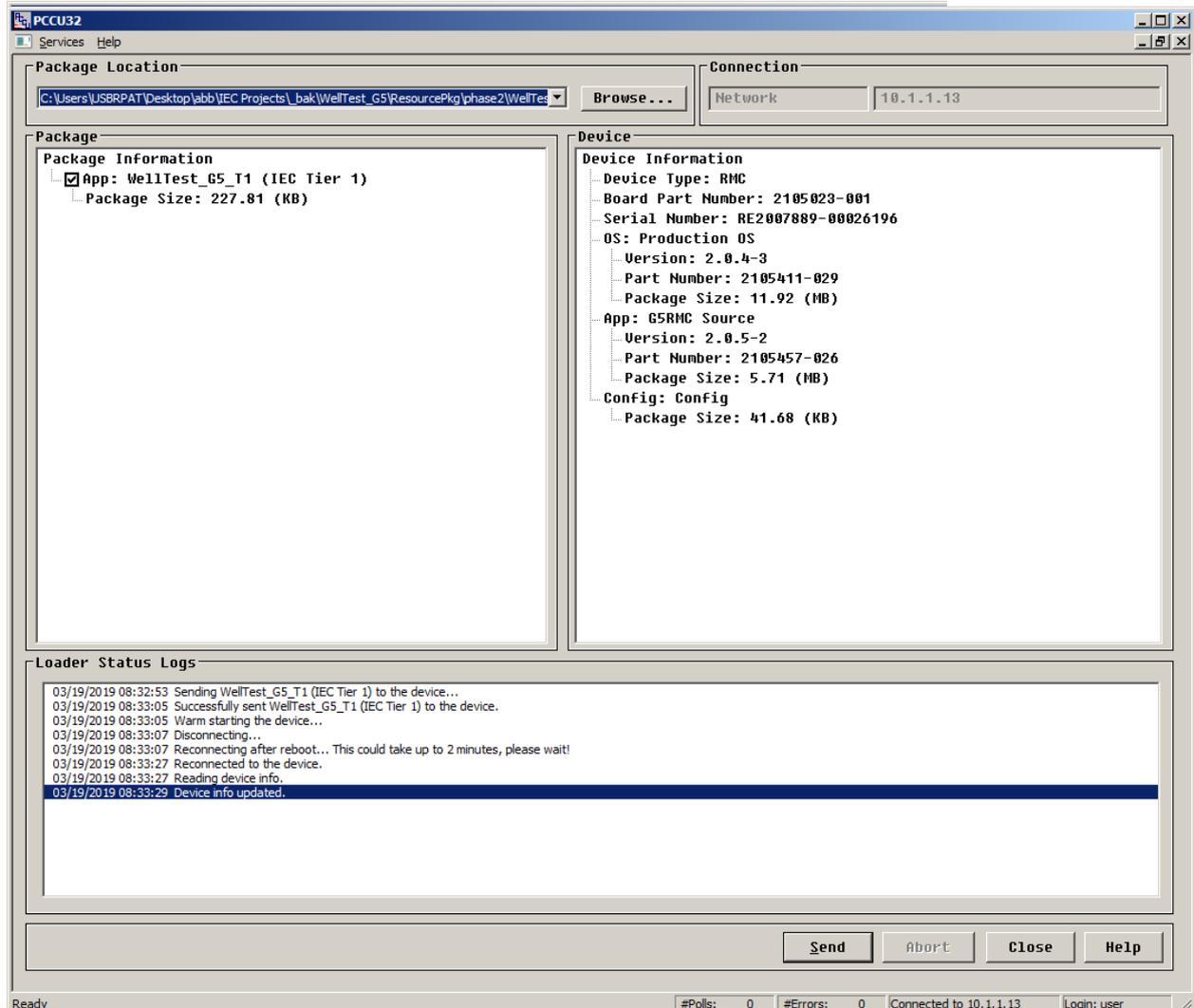
Figure 2-1: Loader status logs



## 2.1 Load the Phase 2 Resource.

1. Click the **32-Bit Loader** icon.
2. Click **Browse**.
3. Select **phase 2 resource**.
4. Click **Send**.
5. Verify the IEC resource loaded successfully by looking in the Status Log and finding the line that states "Successfully sent (Resource) to the Device."

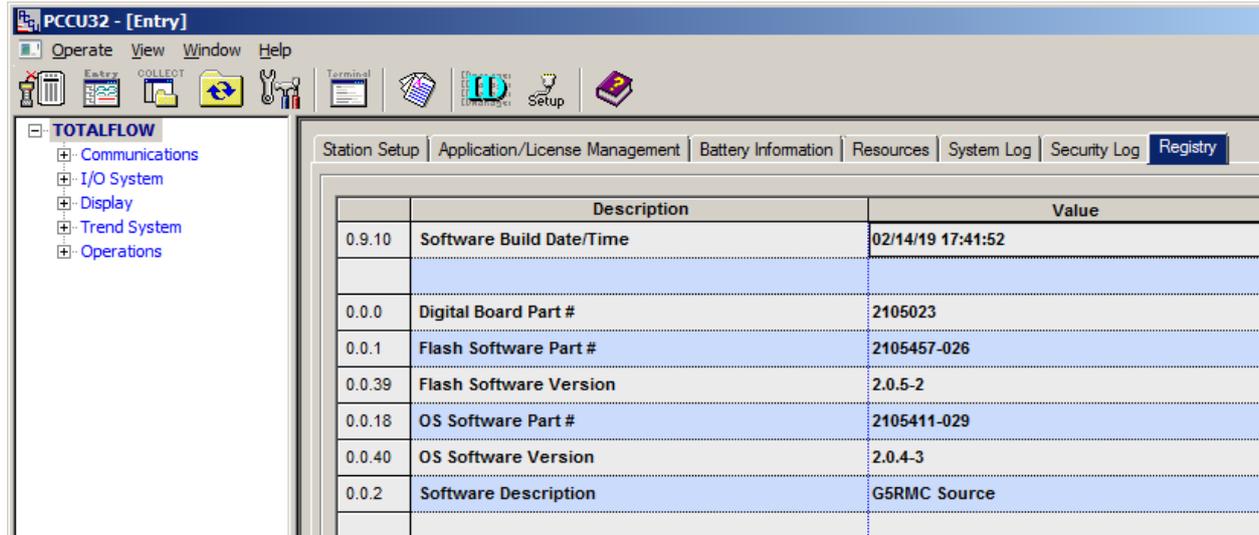
Figure 2-2: Loader status logs



Verify that the OS and Flash have updated:

1. Go to PCCU Entry Mode > **Station App** > **Registry** Tab
2. Verify the Flash software version and the OS software version show the correct version.

**Figure 2-3: Software versions**

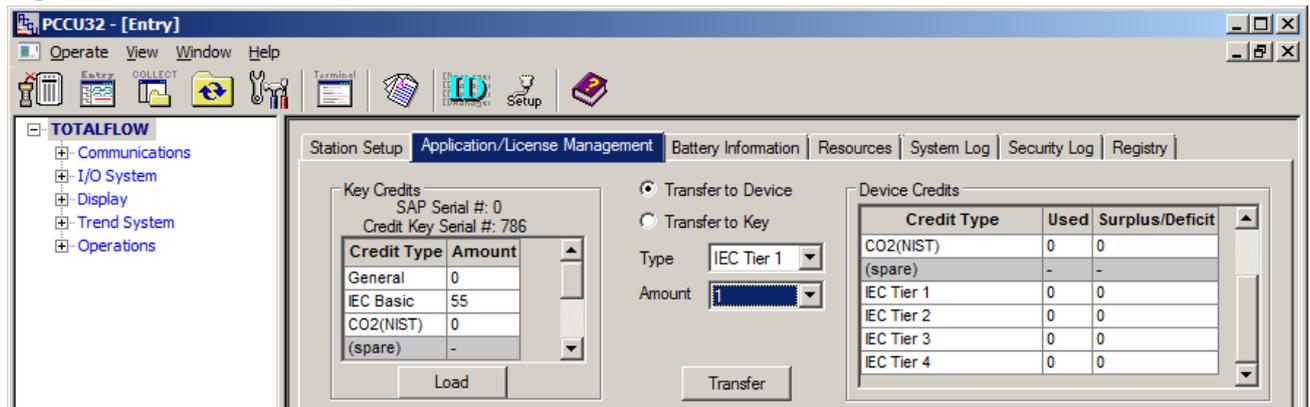


## 2.2 Add the Phase 2 IEC licenses

Licenses range from the Base IEC – Tier 4 IEC. Select the correct license and load it onto the RMC:

1. Go to Entry mode > **Application/License Management** tab.
2. Load Key Credits > type IEC Tier(x) > amount (X) >
3. Click **Transfer**.

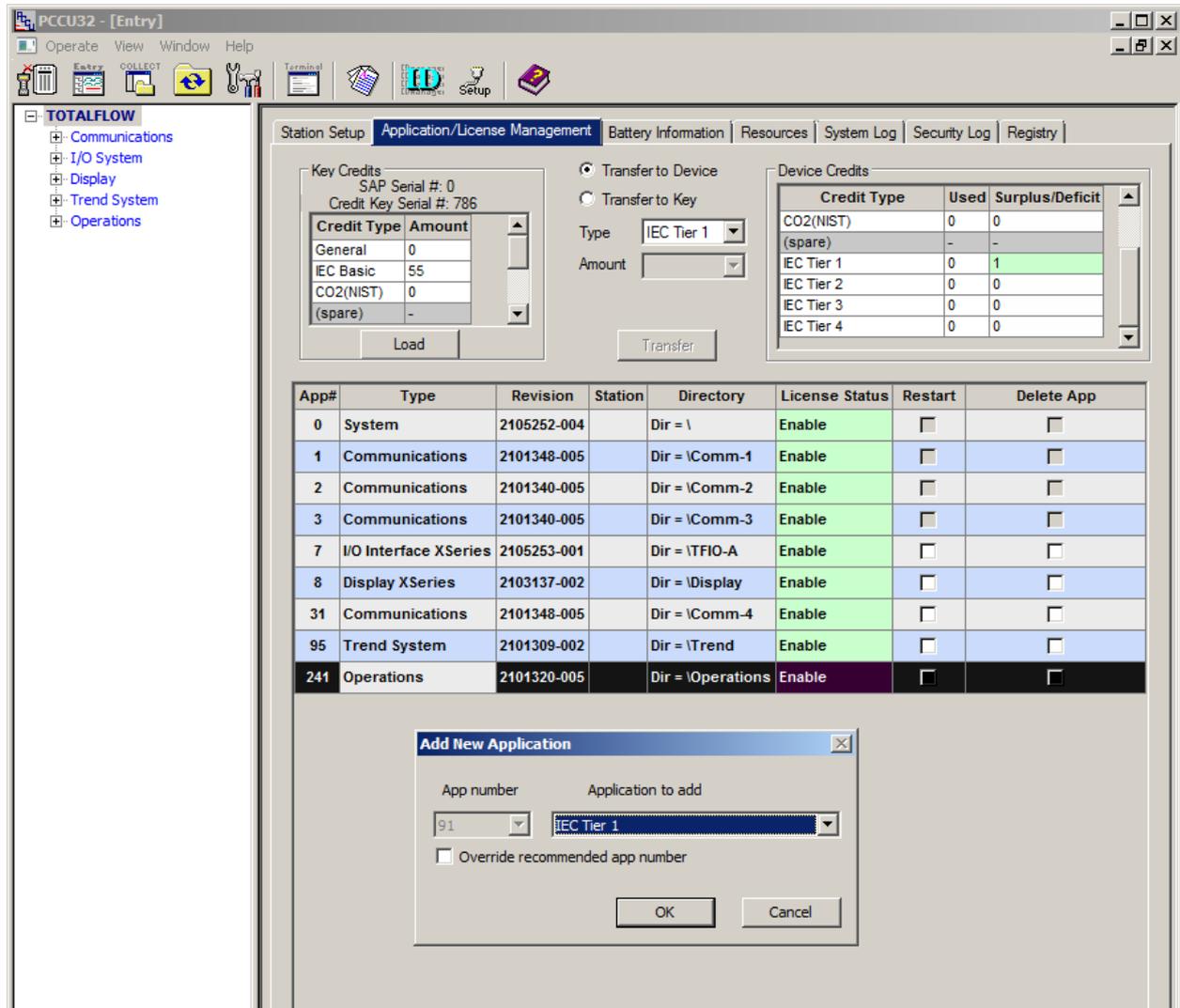
**Figure 2-4: Transfer**



## 2.3 Add Phase 2 IEC Interfaces

1. Go to the **Applications/License Management** tab.
2. Click **Add App > IEC Interface (TierX) > Ok > Send**.

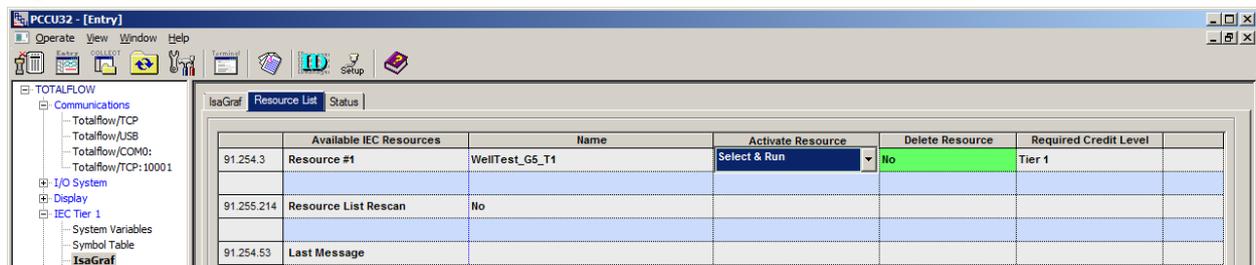
Figure 2-5: Add New Applications



## 2.4 Run the Phase 2 IEC Resource

1. Go to the IEC Interface > **IsaGraf > Resource List** tab.
2. Select the desired Resource > **Activate Resource** Dropdown Menu > **Select and run**.

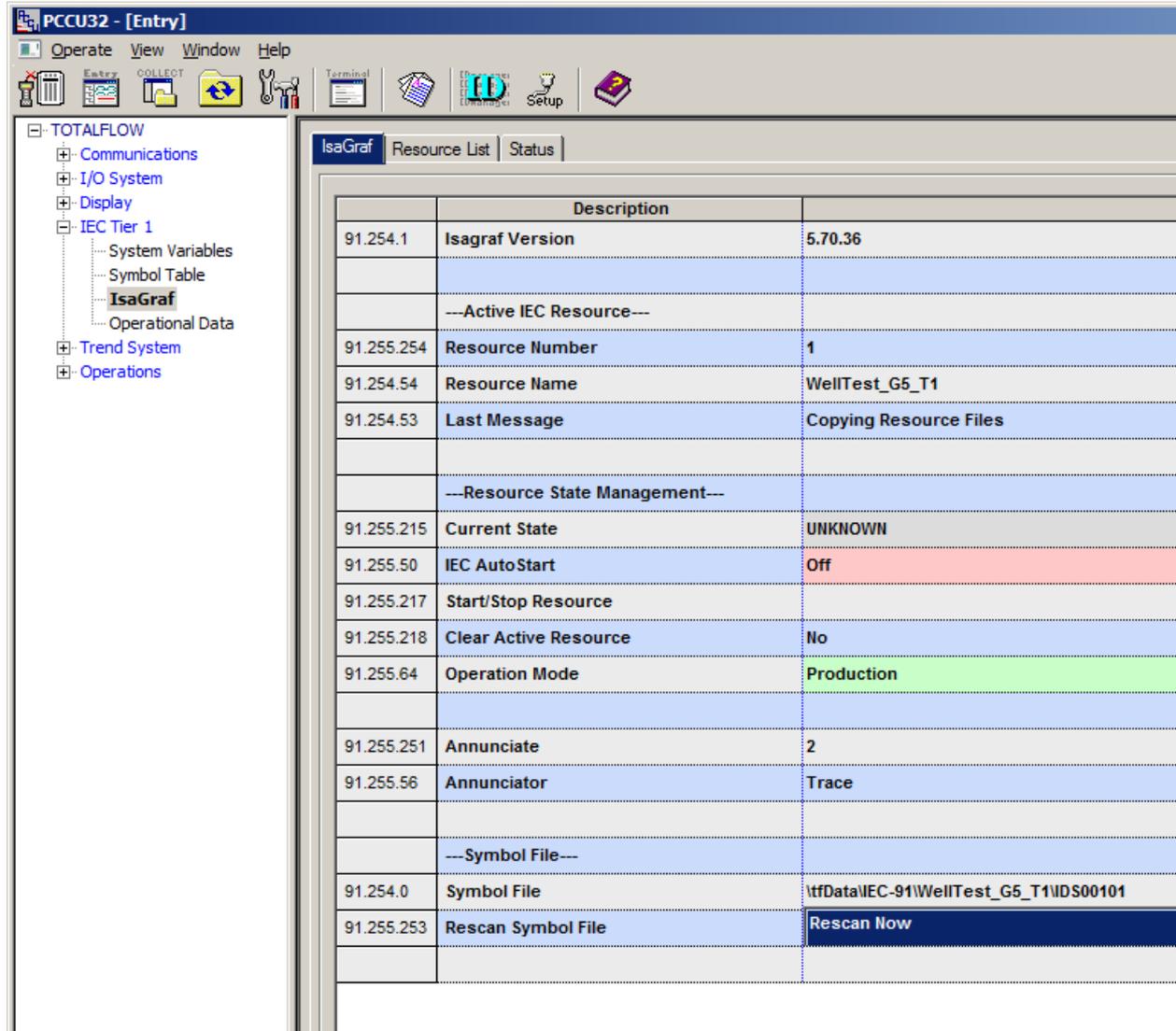
Figure 2-6: Select and run



After the Resource is running, return to the IsaGraf tab. The resource Name field should contain the resource that was just selected to run. The Current state should read "Started and the Resource running".

1. Select the Rescan Symbol file to load the Resource in the tree view.

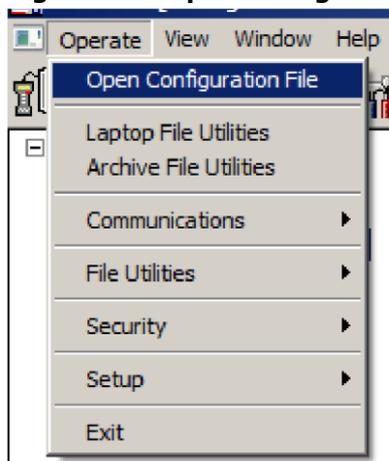
**Figure 2-7: Rescan symbol file**



After the Transition is complete, manually enter the configuration for the Phase 2 IEC Resource.

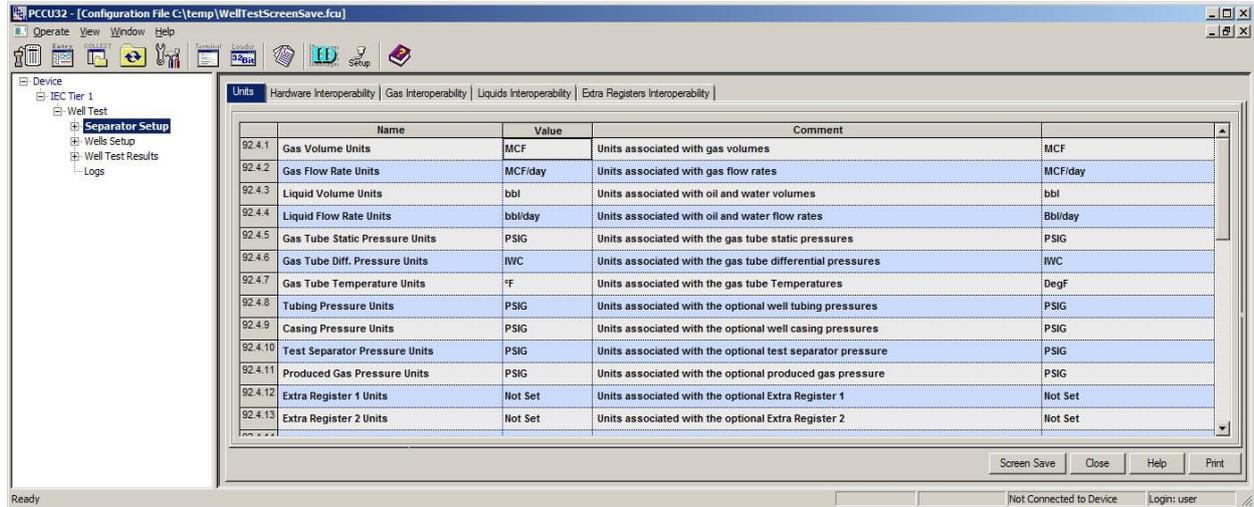
1. Open a second window of PCCU.
2. On the PCCU menu, click **Operate > Open Configuration File**.

**Figure 2-8: Open Configuration File**

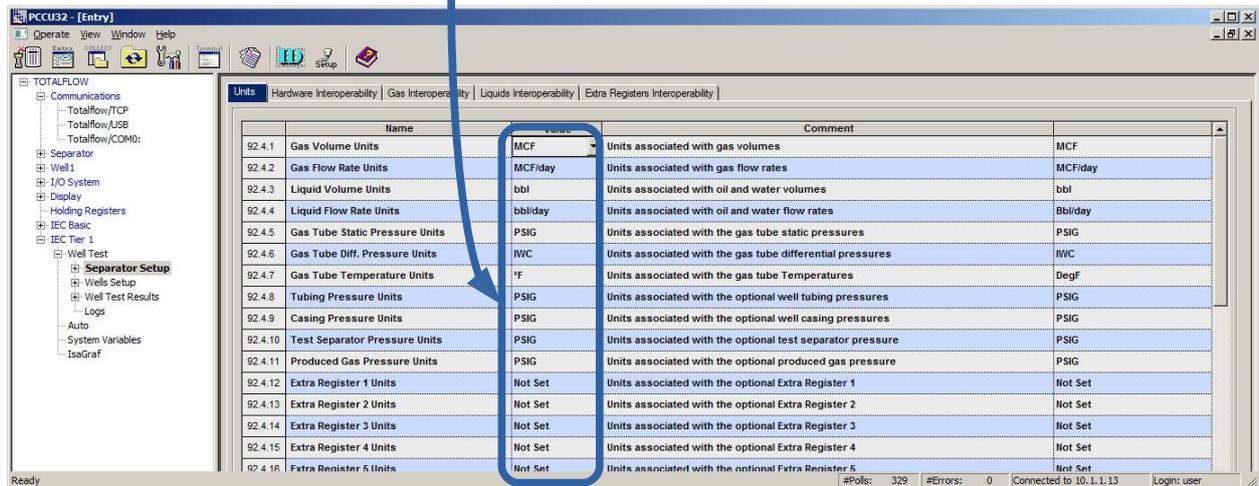
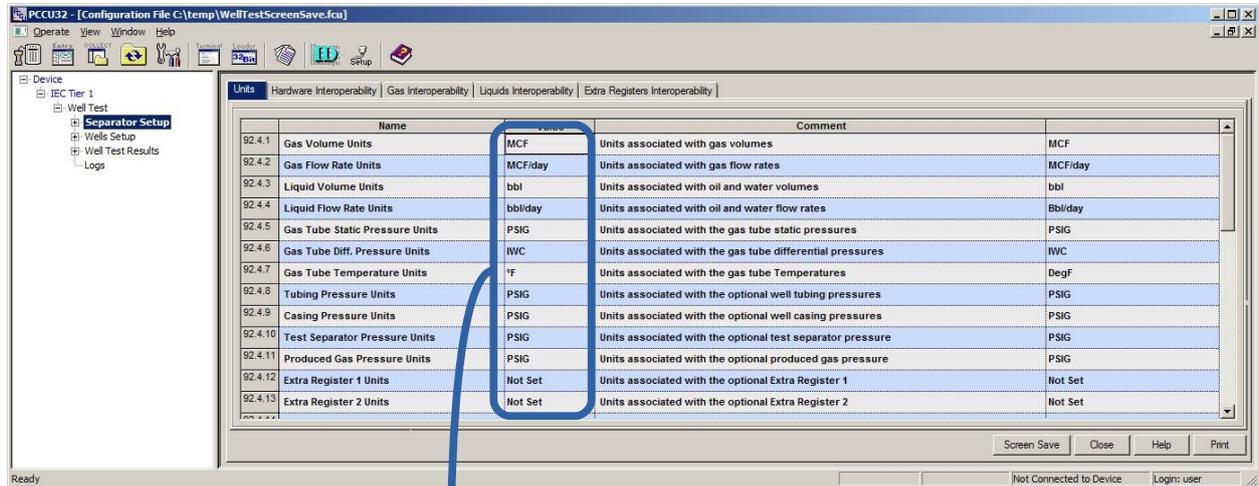


3. Open the Screen Save file in the first window of PCCU.
4. Open Entry Mode in the Second Window of PCCU.
5. Manually enter the settings into the Totalflow controller, duplicating the settings from the Screen Save file for each IEC settings tab.

**Figure 2-9: IEC settings tab**



**Figure 2-10: Configure the IEC application to match the screen save**



**IMPORTANT NOTE:** PCCU Version 7.65 and newer is required to run IEC Phase II applications. This version will have different registers than pictured above (Phase I).



---

**ABB Inc.**

Measurement & Analytics

Quotes: [totalflow.inquiry@us.abb.com](mailto:totalflow.inquiry@us.abb.com)

Orders: [totalflow.order@us.abb.com](mailto:totalflow.order@us.abb.com)

Training: [totalflow.training@us.abb.com](mailto:totalflow.training@us.abb.com)

Support: [upstream.support@us.abb.com](mailto:upstream.support@us.abb.com)

+1 800 442 3097 (opt. 2)

[www.abb.com/upstream](http://www.abb.com/upstream)

Additional free publications are available for download at:

[www.abb.com/totalflow](http://www.abb.com/totalflow)



Upstream oil & gas solutions

**Main Office - Bartlesville**

7051 Industrial Blvd  
Bartlesville, OK 74006  
Ph: +1 918 338 4888

**Kansas Office - Liberal**

2705 Centennial Blvd  
Liberal, KS 67901  
Ph: +1 620 626 4350

**Texas Office – Odessa**

8007 East Business 20  
Odessa, TX 79765  
Ph: +1 432 272 1173

**Texas Office - Houston**

3700 W. Sam Houston  
Parkway S., Suite 600  
Houston, TX 77042  
Ph: +1 713 587 8000

**Texas Office – Pleasanton**

150 Eagle Ford Road  
Pleasanton, TX 78064  
Ph: +1 830 569 8062



We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts - is forbidden without prior written consent of ABB.

2106000

Copyright© 2019 ABB all rights reserved