

# **COMBAT RATION NETWORK FOR TECHNOLOGY IMPLEMENTATION**

## **Retort Upgrading for Surge**

**Final Technical Report STP#2008**

**Results and Accomplishments (May 2002 – December 2008)**

**Report No: FTR 210**

**CDRL Sequence: A003**

**November 2008**

**CORANET CONTRACT NO. SPO103-02-D-0024**

Sponsored by:  
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Fort Belvoir, VA 22060-6221

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<b>14. ABSTRACT</b> Four GFE Stock 1100 retort control systems were upgraded and validated for deployed at a ration producer. Various control systems were compared and evaluated. An important decision criterion was commercial off the shelf hardware and software. The control systems application needed to comply with FDA's 21 CFR Part 11 "Rule for Electronic Records and Electronic Signatures", and be able to support both a stand alone environment and a client-server environment, where multiple retort control systems can be managed from a single location. The control system that was selected was marketed by Stock America Inc, the vendor of the retort equipment. Their control system complied with all of our criteria.						
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## Abstract

Four GFE Stock 1100 retort control systems were upgraded and validated for deployment to a ration producer. Various control systems were compared and evaluated. An important decision criterion was commercial off the shelf hardware and software. The control systems application needed to comply with FDA's 21 CFR Part 11 "Rule for Electronic Records and Electronic Signatures", and be able to support both a stand alone environment and a client-server environment, where multiple retort control systems can be managed from a single location. We selected the control system that was marketed by Stock America, the vendor of the retort equipment. Their control system complied with all of our criteria.

At the end of the project, all four upgraded retorts were deployed and are currently running in a client server configuration.

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# **1 Results and Accomplishments**

## **1.1 Introduction and Background**

Under a DLA Mantech project for combat rations (CORANET), Rutgers Food Manufacturing Technology Facility (FMTF) has assembled, upgraded, and validated eight Stock Rotomat Model 1100 retorts and three Stock Rotomat Model 1300 retorts. Four more Stock 1100 retorts were shipped to Rutgers FMT Facility for inspection on August 15, 2001. One retort was assembled and installed in the retort room, while the other three retorts were assembled and stored in the warehouse. Rutgers inspected all four retorts and determined their deficiencies. To upgrade these retorts to a state of readiness, Rutgers identified all required improvements that needed to be made.

It was determined that the LOGTEC control systems used in these last four retorts can no longer be supported due to lack of available electronic components. Upgrading the control system, in order to support these retorts during production, was deemed an essential requirement to assure the long term operational status of the retorts.

In support of DSCP's Enduring Justice combat ration supply requirements, two of these retorts were shipped out for immediate deployment on September 24, 2001 to SOPAKCO Texas. The two other retorts remained at the FMT facility and this project would upgrade these retorts and make them operational.

After the upgrade of the first two retort would be completed, an exchange would take place and the two remaining retorts with the out dated control system would be sent back to the FMT facility for their upgrade and validation.

DSCP intends to make all retort equipment available to ration producers as Government Furnished Equipment (GFE) for limited peacetime use, but mainly to be available during surge.

## **1.2 Objectives**

- Manage and maintain Stock 1100 retorts that are located at the CORANET Demonstration Facility in Piscataway, NJ, and others that may be received. Maintenance will be in accordance with the Maintenance and Readiness Plan developed during STP#1011.
- Upgrade four Stock 1100 retorts from LogTec control systems to ICON 2000 version 4 control systems and validate their operational status.

## **1.3 Results and Conclusions**

The final four GFE Stock 1100 retorts were upgraded and validated for deployed to a ration producer. We compared a various control systems upgrades. A facilitate easy up keep, it was decided to install commercial off the shelf hardware and software and to require that the software application could run in both a stand alone environment and in a client-server environment. The control system selected from Stock America Inc. complied with these requirements and complied with FDA's 21 CFR Part 11 "Rule for Electronic Records and Electronic Signatures". All four retorts were deployed and are currently running in a client server configuration.

One GFE retort, with an old style control system (ICON 2000 version2), remains at the CORANET Demo facility in support of the CORANET activities. This retort is being maintained in a state of readiness and can be deployed on a moment notice.

## 2 Program Management

The project was awarded on May 7, 2002 under SPO103-02-D-0024, Delivery Order 0004 with a partial obligation of \$32,687.00 of the total requested amount of \$127,687.00. The initial performance period for this delivery order was set at 12 month (May 6, 2003). The initial contract award was to upgrade the two Stock Retorts with LogTec controllers located at the FMT facility.

The following modifications were issued:

July 30, 2002	0004/02	Increased funding, increasing total obligation to 53,088.85
August 1, 2002	0004/03	Increased funding, increasing total obligation to 139,659.85
August 20, 2002	0004/04	Correction the total obligation to 139,298.85
May 6, 2003	0004/05	No cost extension through to December 31, 2003
May 21, 2003	0004/06	Increased funding, increasing total obligation to \$146,720.85 to support additional maintenance and upgrade cost that will be incurred
Sept 30, 2003	0004/07	Upgrade of two additional retorts, extending period of performance to November 30 <sup>th</sup> 2004, increased funding, increasing total obligation to \$264,533.11 which was a partial incremental obligation
Feb 11, 2004	0004/08	Increased funding, increasing total obligation to \$301,327.85, the total amount that was requested
Feb 18, 2004	0004/09	Correction to block 14 information
Nov 29, 2004	0004/10	No cost extension to May 30, 2005
May 17, 2004	0004/11	No cost extension to November 30, 2005
Nov 29, 2005	0004/12	No cost extension to June 30, 2006
June 30, 2006	0004/13	No cost extension to June 30, 2007
Sep 16, 2006	0004/14	Increased funding, increasing total obligation to \$311,327.85 to fund continued preventative maintenance of the GFE retort as well as to ensure system readiness
June 20, 2007	0004/15	No cost extension to June 30 2008
June 10, 2008	0004/16	No cost extension to December 31, 2008

## 3 Short Term Project Activities

### 3.1 Retort Upgrades

#### 3.1.1 Retort Inventory

At the beginning of this project (May 2002) the FMT Facility had the following retorts in Inventory:

- Stock 1100, ICON 2000 version 2, serial number 64026
- Stock 1100, ICON 2000 version 2, serial number 64027
- Stock 1100, LOGTEC, serial number 39883
- Stock 1100, LOGTEC, serial number 39892

#### 3.1.2 Retort Evaluation

The Government acquired four Stock model 1100 retorts with LogTec control system (serial numbers 39882, 39883, 39992 and 39993). These retorts were initially stored at Vanee Foods in Chicago but shipped to the CORANET Demo Facility on 8/15/01 for the purpose to install and inspect their readiness. The retorts were purchased without a required host computer system and thus not operational unless the manufacturer integrated these retort into their own LogTec host system. Two of the retorts (#39882 & #39993) were temporarily shipped to SOPAKCO Texas on September 24, 2001 in support of Enduring Justice. SOPAKCO Texas uses LogTec controllers on their own retorts and was therefore able to integrate the two GFE retorts and make them operational.

The two other retorts remained at the FMT facility and were evaluated for their readiness under a previous project STP#2011. It was determined that the current LogTec control system was out dated and not longer

supported. Recommendations were made that the control systems should use Commercial off the Shelf Hardware and Software and that each retort should be configurable to run in a stand alone mode without required host computer, giving the equipment more flexibility as GFE equipment.

### **3.1.3 Retort Installation**

During this project retorts that needed to be used, upgraded and/or validated, were moved into the retort room and hooked up to the essential utilities. Once the upgrade and validation was completed, the retorts were disconnected, stored and readied for immediate deployment.

### **3.1.4 Control System Upgrade**

On August 22, 2002 Stock America submitted their proposal 2520A-02 (Appendix I), detailing the cost per unit control conversion/upgrade to their ICON-SE control system, a system that has the necessary components and features, functions and tools to operate the retorts and allowing manufacturers to implement electronic record keeping solutions that meet the requirements of FDA's 21 CFR Part 11 "Rule for Electronic Records and Electronic Signatures". The new control system gave the ration producer the flexibility to run it in either a stand-alone mode or in a network configuration in which one host computer manages various retorts. Two retorts with the serial #39883 & #39992 were upgraded under this proposal

On October 2, 2003 Stock America submitted their proposal 2617-03 (Appendix II) for the conversion of two additional Stock 1100 Retorts (serial #39882 & 39993) from the existing Log-Tec controls to same Stock America's ICON-SE Control System as used in the previous two systems.

### **3.1.5 Retort Startup and Validation**

The first two retorts (serial #39883 & 39992) were upgraded by Stock America starting January, 2003 with the replacement of the control system. Once the new control systems were in place, the retorts were hooked up to utilities and checked out for functionality. Final validation of both retorts was completed by March 2003, both in a stand-alone and host mode configuration.

The second set of retorts (serial #39882 & 39993) was upgraded by Stock America starting December 2003 with the replacement of the control system. Once the new control systems were in place, the retorts were hooked up to utilities and checked out for functionality. Final validation of both retorts was completed by March 2004, both in a stand-alone and host mode configuration.

An electronic version of the control system manual is included as Appendix III

### **3.1.6 Retort Storage and Maintenance**

After completion of the upgrade and validation, the retorts were drained from all water and readied for shipment. The following retorts were stored and maintained before they were shipped to SOPAKCO.

- Stock 1100, ICON 2000 version 2, serial number 64026
- Stock 1100, LOGTEC, serial number 39883
- Stock 1100, LOGTEC, serial number 39892

Retort #64027 has been maintained in operational mode, and used to support the needs of the CORANET program. The retort has been used on a monthly basis to check basic functionality of pumps, valves and control system. The following maintenance issues were resolved:

- August 2003: Computer hard disk crashed and was replaced.
- October 2003: Two I/P converter on steam valve and storage vessel pressure control valve malfunctioned and were replaced.
- December 2003: CMOS Battery in PC failed and was replaced.
- April 2004: Cold water valve malfunctioned, cams and relay adjusted and unit was cleaned.
- July 2004: a Burkert Solenoid valve shorted out and was replaced.

- October 2004: The problem with the cold water valve did reoccur. A replacement motor was ordered and old motor was sent out for overhaul
- January 2005: Battery backup failure in PLC, Ladder Logic program was lost and needed to be reloaded after a new battery was installed.
- April 2005: Flapper valve did not open up fully, resulting in poor temperature distribution, water level control and temperature control. The drive motor was taken apart and realigned.
- October 2005: A problem was discovered during the heating phase of the storage drum. Upon inspection, steam sparger had broken off inside the vessel. Corroded piping and sparger were repaired/replaced.
- January 2006: A safety solenoid valve malfunctioned. This valve was replaced.
- April 2006: A problem was encountered with the UPS, causing the control system to suddenly shut down. The unit was replaced.
- August 2006: System battery of operator interface failed and was replaced causing loss of system configuration. New battery was obtained and system was reinitialized.
- September 2006: The motor on the Drain Valve failed to open and was sent to Stock America for repair.
- December 2007: A data corruption error occurred with the hard disk drive, causing the system to shutdown. A repair utility program was used to resolve this issue. A new hard disk drive might need to be installed if the problem reoccurs.
- February 2008: The Vent Valve malfunctioned. Motor and Valve were removed and overhauled by Stock America.
- February 2008: The battery backup of the PLC failed in February, causing the loss of the PLC program. New Battery was installed and the program was reloaded and retort re-validated
- March 2008: CMOS Battery in PC failed and was replaced.

### 3.1.7 Retort Shipment

Detailed information on the items shipped can be found in appendix IV. A summary is given below.

- On July 17 2002, one retort (serial number #64026) was shipped to SOPAKCO Texas, a system with an ICON 2000 version 2 control system. Included in this shipment were 96 retort racks (7333A) and 5 top plates (7333A)
- On April 15, 2003, two upgraded Stock 1100 retorts (serial #39883 & 39992) were shipped to SOPAKCO Bennettsville SC, included in this shipment was 16 baskets, 16 dollies
- On 11/19/03, two retorts #39882 and #39993 were received from SOPAKCO Mullins to the CAFT FMT Facility
- On April 6, 2004, two additional upgraded Stock 1100 retorts (serial #39882 & 39993), old LogTec Interfaces and a Callahan Seamer which was located at the FMT facility were shipped to SOPAKCO in Bennettsville SC.

### 3.1.8 Retort Inventory

On July 30<sup>th</sup> 2008 the following inventory of retorts remained at the Rutgers FMT facility

- Stock 1100, ICON 2000 version 2, serial number 64027

### 3.1.9 Licensed Software

The following licensed software was installed on the four upgraded retorts, including one host system that can manage all four retorts:

#### Host Computer:

- ❑ Microsoft 2000 Server 5.00.2195 SP2, key VRPQX-CMD48-WB74X-2YKWQ-MXHW8, License# 51876-OEM-0005045-20563
- ❑ Microsoft 2000 Professional BHY7Q-PDDTX-HJWW7-06CX9-KJMW8 (second label on PC???)
- ❑ RSView SE Client Rev 2.10.00 ser # 2524000449 9701VWSCWAENE
- ❑ RSView SE Server 100 Rev 2.00.01 ser# 2527000280 9701VWSS100AENE

- ❑ RSSQL Standard 5000                      Rev 5.00.00              ser#      2562000121              9356STD2350
- ❑ RSMACC                                      Ver 1.01.00              ser#      2418000104,              9515-MACCCD-10.16.02  
(not installed)
- ❑ Microsoft Office 2000 SBE,                                      lic#:      54188-OEM-1792691-89839
- ❑ Microsoft SQL Server 2000 Standard SP2 BHD87-9R9XR-97KFF-PTWVP-K7P3M

#### **Retort 882 (PC#M930100184)**

**Microsoft 2000 Professional, Version 5.00 2195, SP2, key THJRC-MPBJV-VWP4W-4PTJY-298JM, License #**

- ❑ View SE Client                              Rev 3.00.01              ser #      2524002405 , cat#: 9701VWSCWAENE
- ❑ RSView SE Server 25                      Rev 3.00.01              ser#      2526000889, cat#: 9701VWSS025AENE
- ❑ RSSQL Standard 1500                      Rev 6.00.02              ser#      1126000556, cat#: 9356STD2300
- ❑ Microsoft Office XP SBE, VDPTM-7HF9H-WR64P-R7FHR-TVT63
- ❑ Microsoft SQL Server 2000 Personal Edition, SP-3a B4X86-JGK67-FTFQJ-VKRKG-DXMMT

#### **Retort 993 (PC#M930100190)**

- ❑ Microsoft 2000 Professional, Version 5.00 2195, SP2, key FYP96-KHDWT-HB8J9-MDBJX-Y2DJ, License # 51873-OEM-0011577-07407
- ❑ RSView SE Client                              Rev 3.00.01              ser #      2524002406, cat#: 9701VWSCWAENE
- ❑ RSView SE Server 25                      Rev 3.00.01              ser#      2526000890, cat#: 9701VWSS025AENE
- ❑ RSSQL Standard 1500                      Rev 6.00.02              ser#      1126000557, cat# 9356STD2300
- ❑ Microsoft Office XP SBE, GTGT6-VPQGC-77326-37FKW-DGX2M
- ❑ Microsoft SQL Server 2000 Personal Edition, SP-3a GHXDG=H74RV-JKJX4-9HTKH-QH6QY

#### **Retort 883**

- ❑ Microsoft 2000 Professional, Version 5.00 2195 SP 3, key FC9FD-9DRGV-GX4X7-FJPD8-VRMQJ, License # 51837-OEM-0009955-23195
- ❑ RSView SE Client                              Rev 2.10.00              ser #      2524001131 , 9701VWSCWAENE
- ❑ RSView SE Server 25                      Rev 2.00.01              ser#      2526000236, 9701VWSS025AENE
- ❑ RSSQL Professional 1500                      Rev 5.00.00              ser#      1131000765,
- ❑ Microsoft Office XP 2000 SBE, DWMD4-4YYHR-BDRGJ-6J2WF-TCD2J
- ❑ Microsoft SQL Server 2000 Personal Edition, F7769-PCT2R-9MP4C-2HCWG-DQJBT
- ❑ Microsoft Internet Explorer, Version 6.0.2800.1106, SP 1

#### **Retort 992**

- ❑ Microsoft 2000 Professional, Version 5.00 2195 SP 3, key MHM4D-HPJK2-KVXMB-HQQVY-8MYQG, License # 51837-OEM-0009955-23194
- ❑ RSView SE Client                              Rev 2.10.00              ser #      2524000448, 9701VWSCWAENE
- ❑ RSView SE Server 25                      Rev 2.00.01              ser#      2526000235, 9701VWSS025AENE
- ❑ RSSQL Professional 1500                      Rev 5.00.00              ser#      1131000766, 9356PRO2300
- ❑ Microsoft Office XP 2000 SBE, QT343-8H63D-CGMMQ-2VDR4-8KXF6
- ❑ Microsoft SQL Server 2000 Personal Edition, QXC83-XVKDY-KCPH3-K4YRF-FCX73
- ❑ Microsoft Internet Explorer, Version 6.0.2800.1106, SP 1

### **3.1.10 Technology Support**

After completing the upgrades of the final four GFE retorts and giving initial support to SOPAKCO in getting the upgraded GFE retorts installed and operational, we continued to support the GFE retort equipment by making our expertise available to DSCP and the ration industry.

- **October 2004:** The host computer with related software was send to Stock America beginning of July for an upgrade. Stock America completed the software development and installation by October 14, 2004 after which the host computer was send to SOPAKCO. SOPAKCO used the host system to run all four retorts in a client server mode.
- **September 2006:** Ameriquel personnel visited the Demo facility to become familiar with the ICON control system in preparation to DSCP planned relocation of three Stock 1300 GFE retorts

to Ameriqua. Additional technology transfer and assistance was given towards the end of the month once the retorts had been received and identification of a few parts was required.

- **October 2006:** Technology transfer and assistance was given to Ameriqua during the installation and start-up of the GFE-Stock-1300 retorts. List of parts and software backups were provided as well as passwords for both the OI and PLC program.

## **4 Appendix:**

**Appendix I: Stock America Proposal #2520A-02**

**Appendix II: Stock America Proposal # 2617-03**

**Appendix III: ICON-SE Operating Manual**

**Appendix IV: Retort Shipment Information**

## **Appendix I: Stock America Proposal #2520A-02**

**STOCK AMERICA INC.  
STERILIZATION SYSTEMS DIVISION**

1935 Evans Road  
Cary, NC 27513

**PROPOSAL # 2520A-02**

Prepared by T. Schurr

PH. (919) 678-8201  
FX. (919) 678-8204

**TO: RUTGERS UNIVERSITY  
120 NEW ENGLAND AVENUE  
PISCATAWAY, NJ 08854**

**DATE: AUGUST 22, 2002**

**REFERENCE: STOCK CONTROL CONVERSION**

**ATTENTION: RIEKS BRUINS**

We are pleased to provide the following firm quotation for the conversion of 2 (two) Stock Retorts to our ICON Control System. This quote is valid for 45 days from the date of issue.

**Stock Retort Control Upgrade – ICON Intelligent Control Network**

1. Hardware conversion including:
  - a. Removal of existing Logic Controller and Log-Tec Interface
  - b. Modification or replacement of front panel door with appropriate cutouts, switches and legend plates
  - c. Substitution of Allen-Bradley SLC500 5/05 processor and Windows 2000 Industrial PC Operator Interface
  - d. Retention of all transmitters, transducers, sensors, switches and level sensors unless itemized below.
    - i. New Minco temperature transmitters for SV and PV control
  - e. Retention of motor control components, I/P transducers, relays and contacts.
  - f. Add UPS – uninterruptible power supply/battery back up system
  - g. Shielded analog cable for all analog inputs
  - h. Installation, wiring, start up and operational validation
  - i. Conduit and utility services to machine by customer– termination and validation by Stock
2. Software conversion, including:
  - a. Implementation of Stock America developed and maintained ICON Automated Batch Retort software code for both Operator Interface and SLC500 processor
  - b. Installation, validation and training
  - c. ICON user manuals
3. On-site Time and Expenses, including;
  - a. All travel and living expenses for service and process validation personnel
  - b. Temperature Distribution and Heat Penetration testing is not included.

**PRICE, PER UNIT**

**... \$ 25,495.00**

4. ICON Host/Supervisory System, including;
  - a. All PC hardware, software and printer
  - b. Capacity for 2 retorts (Maximum of 10 with license upgrade)
  - c. ICON Automated Batch Retort software, consisting of:
    - i. Recipe Management, incl. Embedded Ball Formula Calculation

**STOCK AMERICA INC.**  
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- ii. Process Data Logging with Retort Status Screen and FDA accepted batch report printouts
- iii. Tools to view and re-print past batch reports
- iv. Security Administration
- d. Compliance with 21 CFR Part 11 electronic record keeping requirements
- e. Process Data is stored in an ODBC compliant database.

**PRICE, PER HOST SYSTEM**

**... \$ 11,875.00**

**5. Change Management Software**

- a. Manufacturers who seek to achieve compliance with the FDA's 21 CFR Part 11 Rule for Electronic Records and Electronic Signatures must implement Best Practices, Corporate Policies, or Standard Operating Procedures (SOPs) to enforce security measures and ensure the safeguard of electronic record and signature information. The manufacturer must also institute qualified training to individuals responsible for these systems.
- b. The ICON Automated Batch Retort System is comprised of components that include the necessary features, functions and tools to assist in allowing manufacturers to implement electronic record keeping solutions that meet the requirements of the FDA's 21 CFR Part 11 Rule for Electronic Records and Electronic Signatures.
- c. Change Management Software provides security, version control, audit trails, central storage and automated backup and compare.

**PRICE, for CHANGE MANAGEMENT SYSTEM**

**... \$ 5,000.00**

**6. Optional Upgrades, per unit additional pricing**

- |   |     |    |          |
|---|-----|----|----------|
| a. ES Mode piping and ES Mode valves, inc. installation   | ... | \$ | 3,180.00 |
| b. Barksdale Steam Pressure Switch – install by customer  | ... | \$ | 108.00   |
| c. VFD Conversions, 5 hp, inc. polychain conversion and installation  | ... | \$ | 2,540.00 |
| d. Analog Drain Valve, for water level control, w/ DIN flanges, inc. wiring, configuration and validation                     | ... | \$ | 2,585.00 |
| e. Additional rotor position proximity switch, configured and wired   | ... | \$ | 140.00   |
| f. Temperature Distribution verification, per unit, including all travel and Living expenses (based on 2 trips for 4 retorts) | ... | \$ | 2,150.00 |

**7. Conversion from ICON v.4 Distributed Server-Client to "Stand-alone", including**

- |  |     |    |          |
|--|-----|----|----------|
| a. Upgrade R.A.C. 6181 to Server Version (Pentium III, 256 MB) | ... | \$ | 807.00   |
| b. Add MS Office 2000 Pro                                      | ... | \$ | 408.00   |
| c. Add One (1) RSView SE Server (25 Display)                   | ... | \$ | 2,800.00 |
| d. SAI Engineering Support                                     | ... | \$ | 1,000.00 |

**Total, Without Options                      \$    5,015.00**

- |                             |     |    |          |
|-----------------------------|-----|----|----------|
| e. Optional SQL Server 2000 | ... | \$ | 1,607.00 |
| f. Optional Crystal Reports | ... | \$ | 552.00   |

**STOCK AMERICA INC.  
STERILIZATION SYSTEMS DIVISION**

1935 Evans Road  
Cary, NC 27513

**PROPOSAL # 2520A-02**

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Assumptions:

1. Original components, including I/P transducers, pressure switches, level sensors, motor starters, relays and other components are retained unless specifically listed. ***If necessary, Stock will repair, replace or upgrade existing retort components, valves or field devices at additional cost.***
2. The ICON Automated Batch Retort System is FDA accepted and U.S.D.A. approved and year 2000 compliant. Compliance with 21 CFR Part 11 requires implementing the Change Management software solution in conjunction with the ICON system. Validation for 21 CFR Part 11 compliance is available at extra cost.
3. Additional ICON Host Systems are available for \$10,950.00.
4. Additional Change Management systems are available for \$11,675.00
5. Additional Operator Interface systems are available for \$9,875.00
6. Additional SLC500 systems are available for \$8,475.00

Contributions:

This proposal contains contributions offered by Stock America to offer a price effective control solution to Rutgers University. Below is a table that details the amount of these contributions Stock America has offered within this proposal.

Price Reduction for Project Engineering and Software Development	Savings of \$8,800.00
Price reduction for ICON Automated Batch Retort System	Savings of \$1,475.00
Price reduction for Operator Interface	Savings of \$4,800.00 each
Price reduction for Change Management Software	Savings of \$6,675.00

Delivery: Approximately 8 - 10 weeks after receipt of down payment

Payment Terms: 50% down-payment with firm order  
40% Upon Shipment  
10% After Start Up, Not to exceed 60 days after shipment

Shipping: F.O.B. Cary, NC. Shipping costs will be pre-paid and added to the final invoice.

## **Appendix II: Stock America Proposal # 2617-03**

**STOCK AMERICA INC.  
STERILIZATION SYSTEMS DIVISION**

1935 Evans Road  
Cary, NC 27513

**PROPOSAL # 2617-03**

Prepared by T. Schurr

PH. (919) 678-8201  
FX. (919) 678-8204

**TO: RUTGERS UNIVERSITY  
120 NEW ENGLAND AVENUE  
PISCATAWAY, NJ 08854**

**DATE: OCTOBER 2, 2003**

**REFERENCE: STOCK CONTROL CONVERSION**

**ATTENTION: RIEKS BRUINS**

We are pleased to provide the following proposal for the conversion of 2 (two) Stock 1100 Retorts currently located at SOPAKCO in Mullins, SC from existing Log-Tec controls to Stock America's ICON<sup>SE</sup> Control System.. This quote is valid for 60 days from the date of issue.

### **Stock Retort Log-Tec Control Upgrade – ICON<sup>SE</sup> Secure Control Network**

1. Hardware conversion including:
  - a. Removal of existing Log-Tec controls
  - b. Acquisition, assembly and installation of new control back panel in existing front enclosure, including mounted relays, contacts and terminal blocks, with interconnections pre-wired
  - c. Modification of front panel door with appropriate cutouts, switches and legend plates
  - d. Allen-Bradley SLC500 5/05 processor and Windows 2000 Industrial PC Operator Interface
  - e. Retention of all transmitters, transducers, sensors, switches and level sensors unless itemized below
    - i. New Minco temperature transmitters for SV and PV control (32-302 Deg F)
  - f. Retention of motor control components, I/P transducers, relays and contacts
  - g. UPS (for Industrial PC only)
  - h. 16 AWG blue wire and shielded analog, control power transformer, DC power supply, terminal blocks, relays, fuses Etc.
  - i. Copper tubing, fittings, flex conduit Etc.
  - j. Installation, wiring, start up and operational validation
  - k. Conduit and utility services to machine by customer– termination and validation by Stock America
2. Software conversion, including:
  - a. Implementation of Stock America developed and maintained ICON<sup>SE</sup> Stand-alone Automated Batch Retort software for both Operator Interface and SLC500 processor
  - b. Installation, IQ and OQ validation and training
  - c. ICON<sup>SE</sup> user manual
3. On-site Time and Expenses, including;
  - a. 2 (two) weeks of time, travel and living expenses for a Stock America Service Technician
  - b. 1 (one) week of time, travel and living expenses for a Stock America Controls Engineer
  - c. ½ (one half) week of time, travel and living expenses for a Stock America Process Technologist (temperature distribution and heat penetration testing is not included)

**STOCK AMERICA INC.**  
**STERILIZATION SYSTEMS DIVISION**

1935 Evans Road  
Cary, NC 27513

**PROPOSAL # 2617-03**

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PH. (919) 678-8201  
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**PRICE, PER UNIT**

○ <b>ICON<sup>SE</sup> conversion, including Client Software</b>	...	\$	<b>28,140.00</b>
○ <b>add upgrade to 'Standalone' ICON<sup>SE</sup></b>	...	\$	<b>5,015.00</b>
○ <b>add validation for Distributed Client – Server deployment</b>	...	\$	<b>4,100.00</b>

**4. Optional Upgrades (per Retort)**

a. ES Mode valves including installation	...	\$	3,180.00
b. Barksdale steam pressure switch (installation by customer)	...	\$	95.00
c. VFD conversion including poly-chain, SLC RIO module & enclosure	...	\$	3,275.00
d. Analog Drain valve for water level control, w/ DIN flanges, including I/P transducer, wiring, configuration and validation	...	\$	2,585.00
e. Additional rotor position proximity switch, configured and wired	...	\$	75.00
f. Analog PV level transmitter and stand-pipe	...	\$	1,815.00
g. 1 (one) Manual SV temperature gage	...	\$	250.00
h. 2 (two) Ashcroft pressure transmitters	...	\$	1,065.00

**Assumptions:**

1. Original components, including I/P transducers, pressure switches, level sensors, motor starters, relays and other components are retained unless specifically listed. ***If necessary, Stock will repair, replace or upgrade existing retort components, valves or field devices at additional cost.***
2. The ICON Automated Batch Retort System is FDA accepted and U.S.D.A. approved and year 2000 compliant. Validation for 21 CFR Part 11 compliance is available at extra cost.
3. It is assumed that the Retorts will be brought from SOPAKCO to the CAF.T. facility in New Jersey for performing this conversion (Stock America is not responsible for transportation of the Retorts).

**STOCK AMERICA INC.  
STERILIZATION SYSTEMS DIVISION**

1935 Evans Road  
Cary, NC 27513

**PROPOSAL # 2617-03**

PH. (919) 678-8201  
FX. (919) 678-8204

Prepared by T. Schurr

**Contributions:**

This proposal contains contributions offered by Stock America to offer a price effective control solution to Rutgers University. Below is a table that details the amount of these contributions Stock America has offered within this proposal.

Price Reduction – discount on services	Savings of \$4,025.00 (per Retort)
Price Reduction – discount on software	Savings of \$4,510.00 (per Retort)
Price Reduction – discount on hardware	Savings of \$3,375.00 (per Retort)

Delivery: To Be Determined

Payment Terms: 50% down-payment with firm order  
40% upon Shipment  
10% after Start-up, not to exceed 60 days after shipment

Shipping: F.O.B. Cary, NC. Shipping costs will be pre-paid and added to the final invoice

## **Appendix III: ICON-SE Operating Manual**

# *OPERATIONS*

## *MANUAL*

### *ICON<sup>SE</sup>*

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# SECTION 1 - GENERAL OVERVIEW

## a. Sequence of Events – Pre-start up

Each project involving a new retort purchase or a controls retrofit is traceable to a Technical Description, Control / Electrical Specification and Installation Qualification Document that is provided in written form by STOCK America, Inc. If there are any questions regarding installation, start up or technical detail, the Technical Description and Control Specification as well as the Installation Qualification Document should be consulted. For additional copies or questions regarding this information, please contact your STOCK America, Inc. Project Manager.

Installation assistance is available from the STOCK America, Inc. technical department in the form of utility recommendations, layout options / drawings and relevant electrical schematics as defined in the project documentation summary. Phone support is included for an agreed upon time frame at no extra charge; on-site assistance may be requested and would be quoted at prevailing service rates.

## b. Sequence of Events – Start Up

After retort and control installation is complete, the following steps need to be taken to insure a safe and efficient start up. This information is recorded on the STOCK *Installation Qualification* document.

### Typical start up sequence:

1. I/O and Electrical check out.
2. Retort Survey
3. Mechanical and Dry Test of valves and controls.
4. Wet Test of valves and controls requires completion of proper utility connections:
  - a. Electrical, Steam, Water, Air and Drain.
5. Initial Testing and Control Optimization with recipe.
6. Temperature Distribution testing.
7. Heat Penetration testing.
8. Operation and Maintenance training.
9. Retort Validation.
10. Initial Product Run.
  - a. A minimum of one retort charge of baskets with ballast (preferably actual product containers filled with water) will be need after wet testing in order to properly set machine operating parameters. If diverse containers and/or product should be considered, representative containers from each product will need to be available.

Stock personnel will make every effort to verify proper operation of the equipment prior to releasing the unit to the customer. It is the customers' responsibility to determine when function and operating experience is sufficient to release the equipment for production purposes.

## SECTION 2 - SYSTEM SECURITY

---

### a. General

- **ICON<sup>SE</sup>** Control Systems are designed to be compliant with CFR 21 Part 11 regulations concerning “Electronic Records: Electronic Signatures”
- **ICON<sup>SE</sup>** Control Systems require a *User Name & Password* to be entered each time there is a user input that requires saving the change to a field.
- It is the responsibility of the “Individual User” to protect the security of their password and change them on a routine basis.
- It is also the responsibility of the customer to determine which level of access should be granted to personnel. Stock will configure passwords initially and train the customers Administrator on adding, deleting and changing user privileges.

### b. Security Levels

- **Administrator** - has the ability to make the highest level changes to Windows, **ICON<sup>SE</sup>** user password information, manage the installed PC software and hardware.
  - Unlimited access
- **Manager** - has the ability to completely operate the **ICON<sup>SE</sup>** system including making modifications to and creating new *recipes*.
  - No access to SQL Server Database or changes to Windows
- **Operator** - has the ability to run the retort, place holds on, pauses on and abort the process
  - No access to Recipe Management functions, SQL Server Database and changes to Windows
- **Guest** - has ability to view current screen only
  - No access beyond Logon

## c. Managing User Accounts

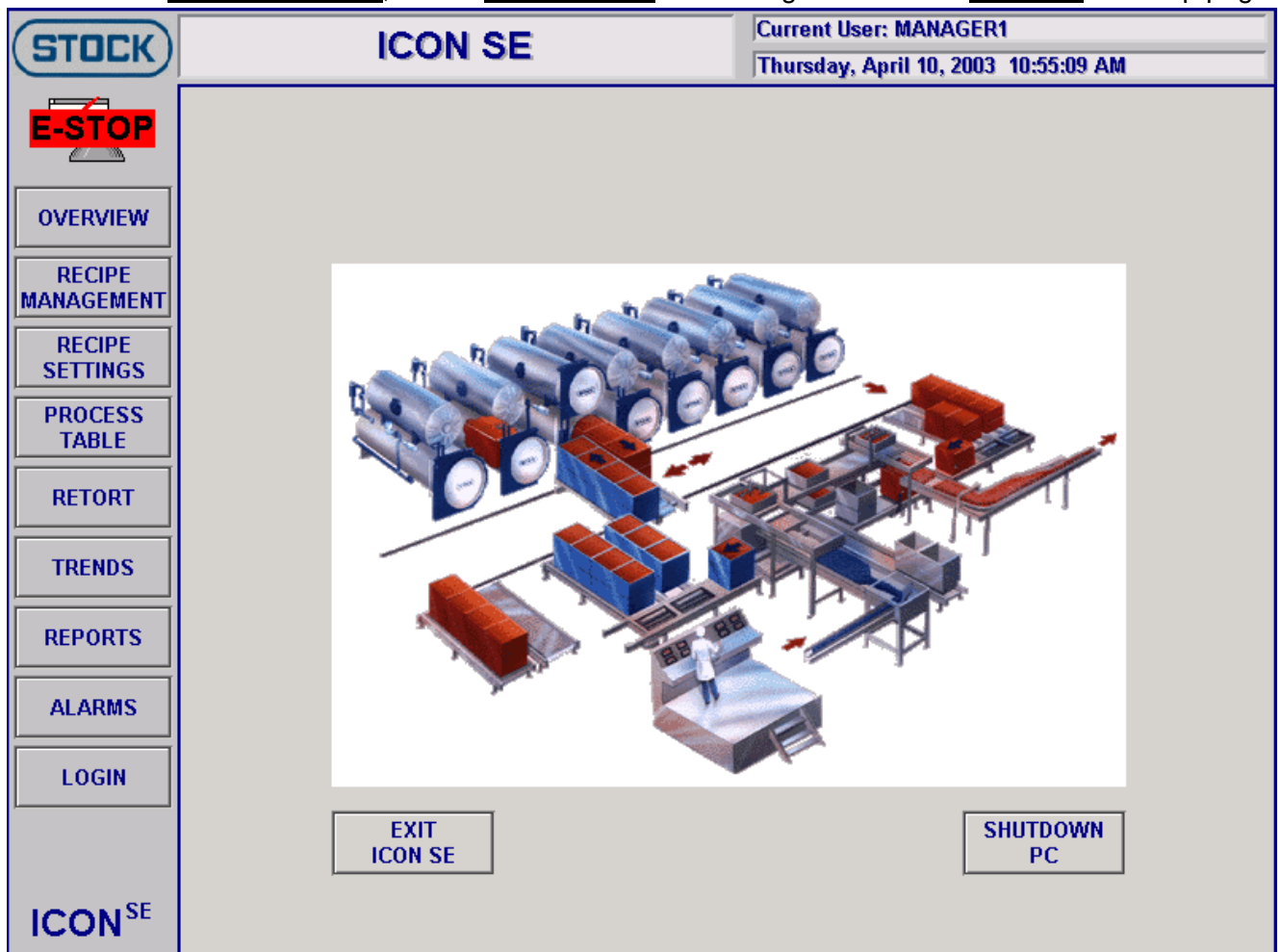
- System Administrator level access is required to manage user accounts.
- Accounts must be changed in both the ICON<sup>SE</sup> application and the Windows operating system.

### Step 1 – Shut down ICON SE and Windows system

- Select Shut Down PC button
- Power off PC
- Attach Windows Keyboard and Mouse to HOST PC
- Restart HOST PC See Section 4(d) for procedure

### Step 2– Exit ICON SE system

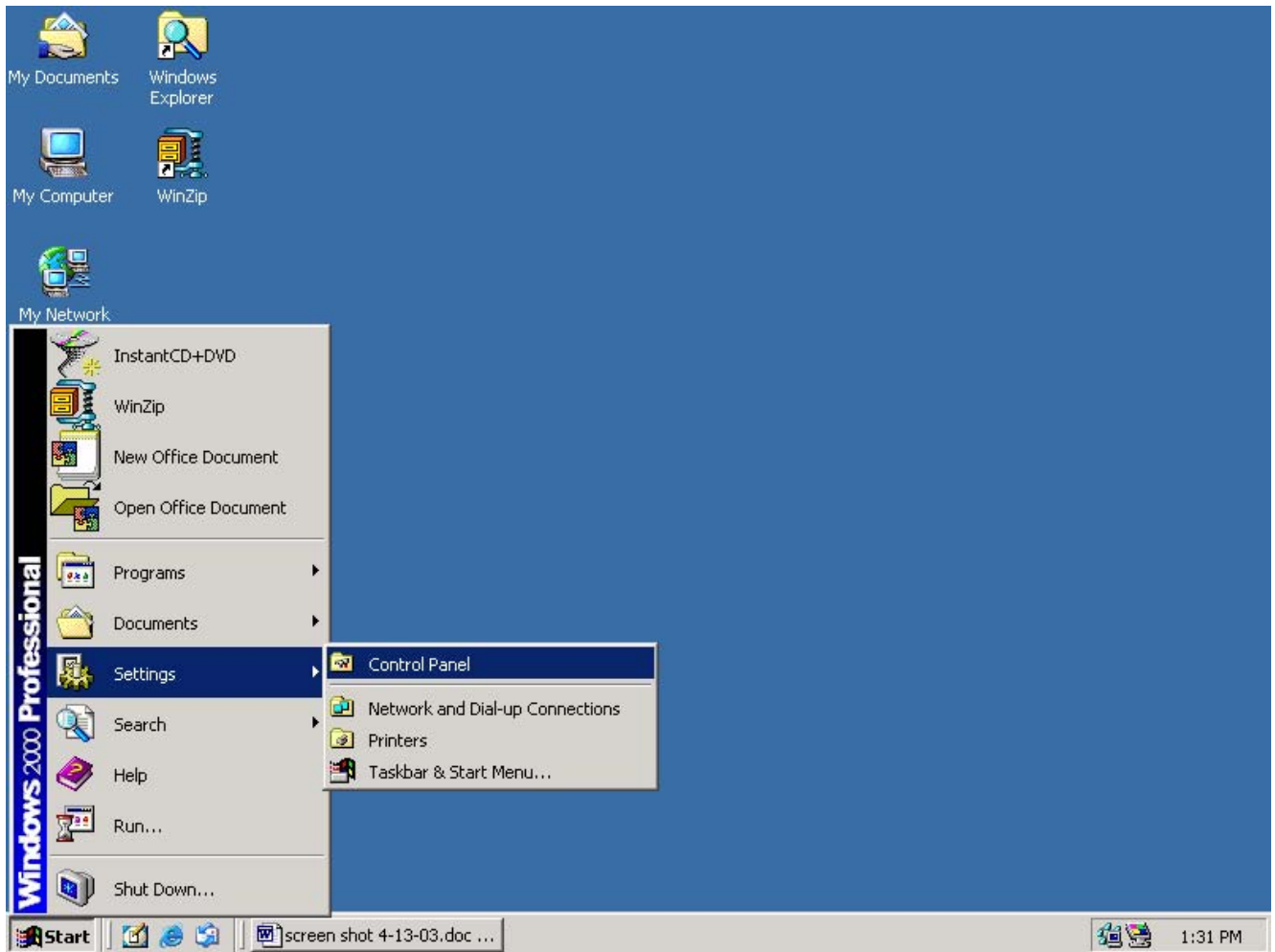
- Login as Administrator
- On Overview Screen, Select Exit ICON SE button to gain access to Windows desk top page



- Log off current windows user
- Login windows user with administrator privileges

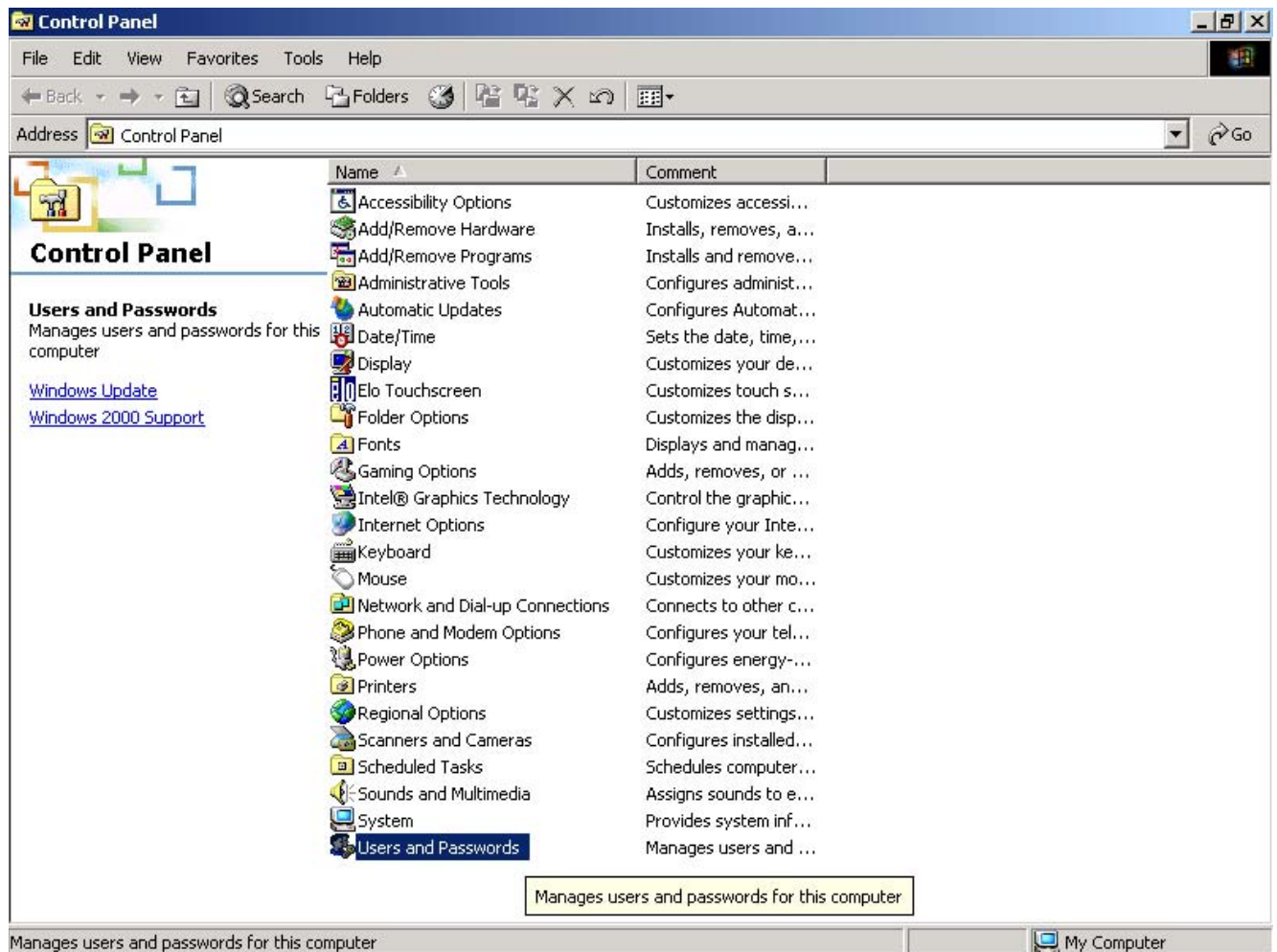
## Step 3 – Windows User Account Administration

- Select Windows Menu: Start → Settings → Control Panel



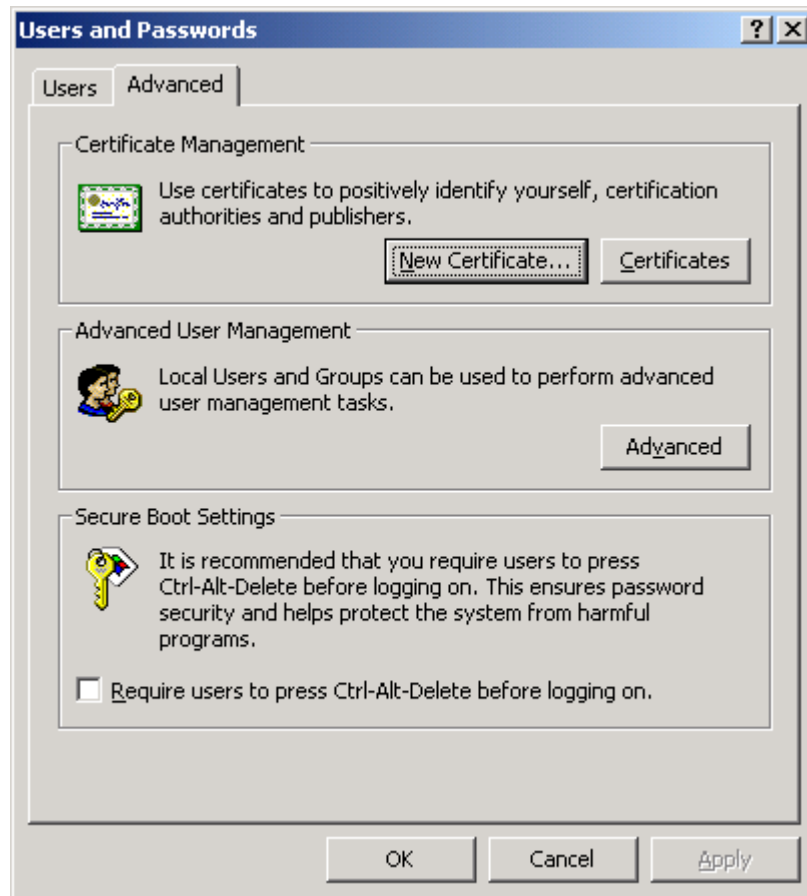
## Step 4 – Windows User Account Administration

- Select Windows Menu: Control Panel → Users and Passwords



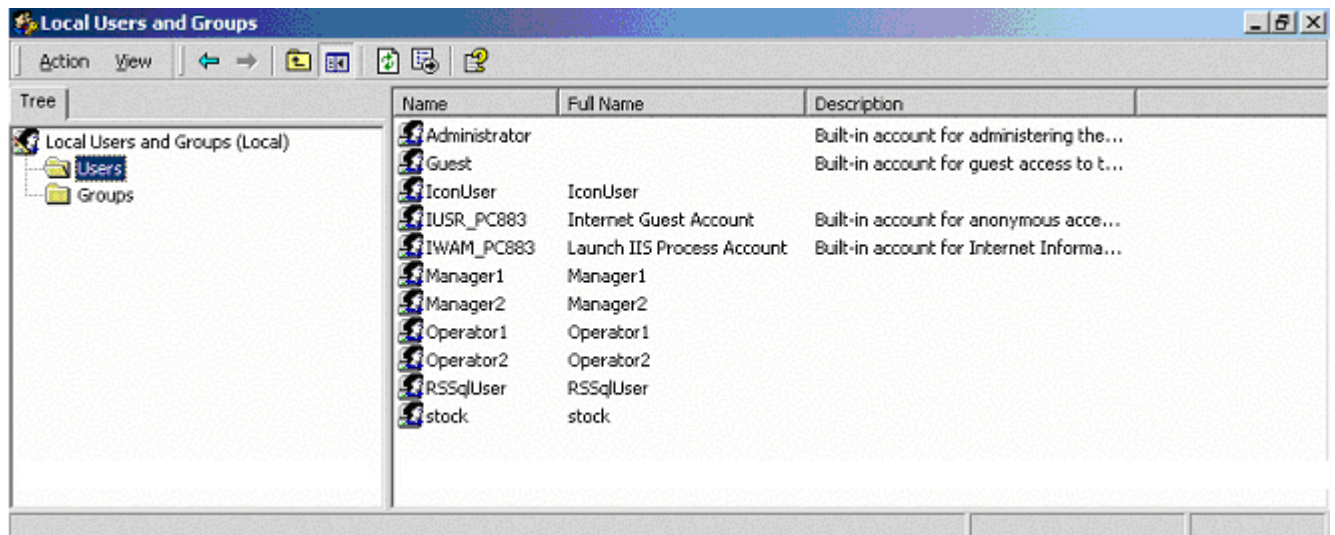
## Step 5 – Windows User Account Administration

- Select Windows Menu: Users and Passwords → Advanced Tab → Advanced button



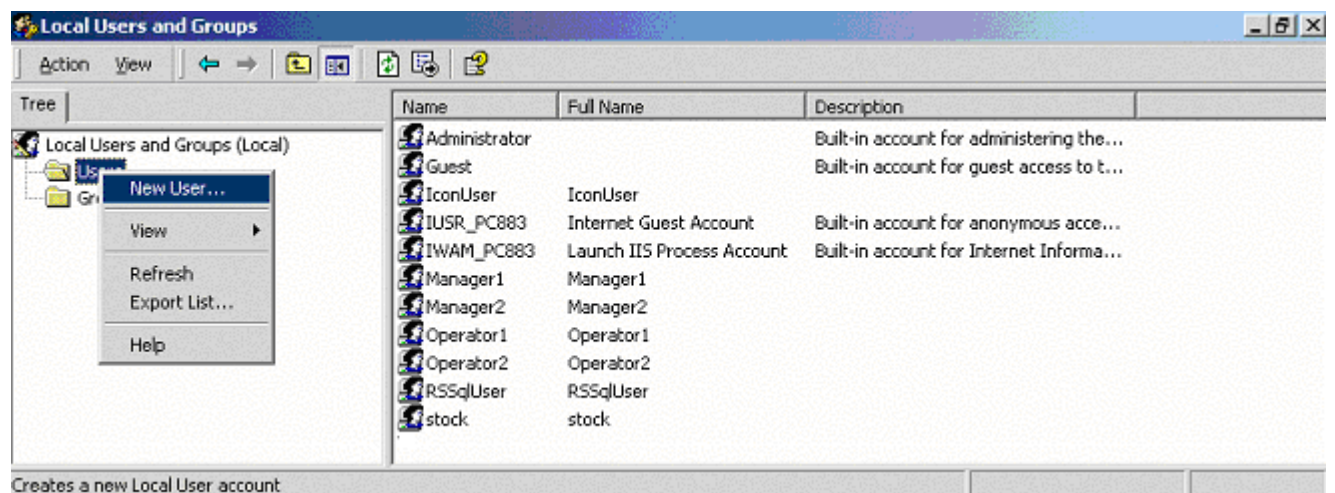
## Step 6 – Windows User Account Administration

- Select Users folder



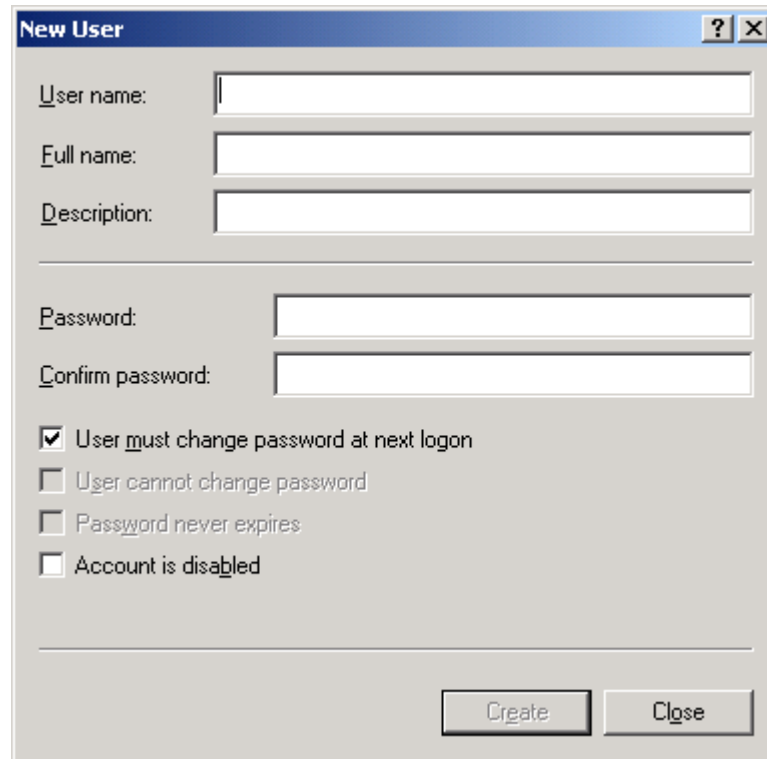
## Step 7 – Windows User Account Administration – Local Users & Groups

- Right Click on Users folder
- Select New User



## Step 8 – Windows User Account Administration – User Information

- Fill in all fields as per corporate IT standards
- When finished Select Create button



The image shows a Windows-style dialog box titled "New User". It contains several input fields and checkboxes. The fields are: "User name:", "Full name:", "Description:", "Password:", and "Confirm password:". Below these fields are four checkboxes: "User must change password at next logon" (checked), "User cannot change password", "Password never expires", and "Account is disabled". At the bottom right of the dialog are two buttons: "Create" and "Close".

**New User** [?] [X]

User name:

Full name:

Description:

Password:

Confirm password:

☒ User must change password at next logon

☐ User cannot change password

☐ Password never expires

☐ Account is disabled

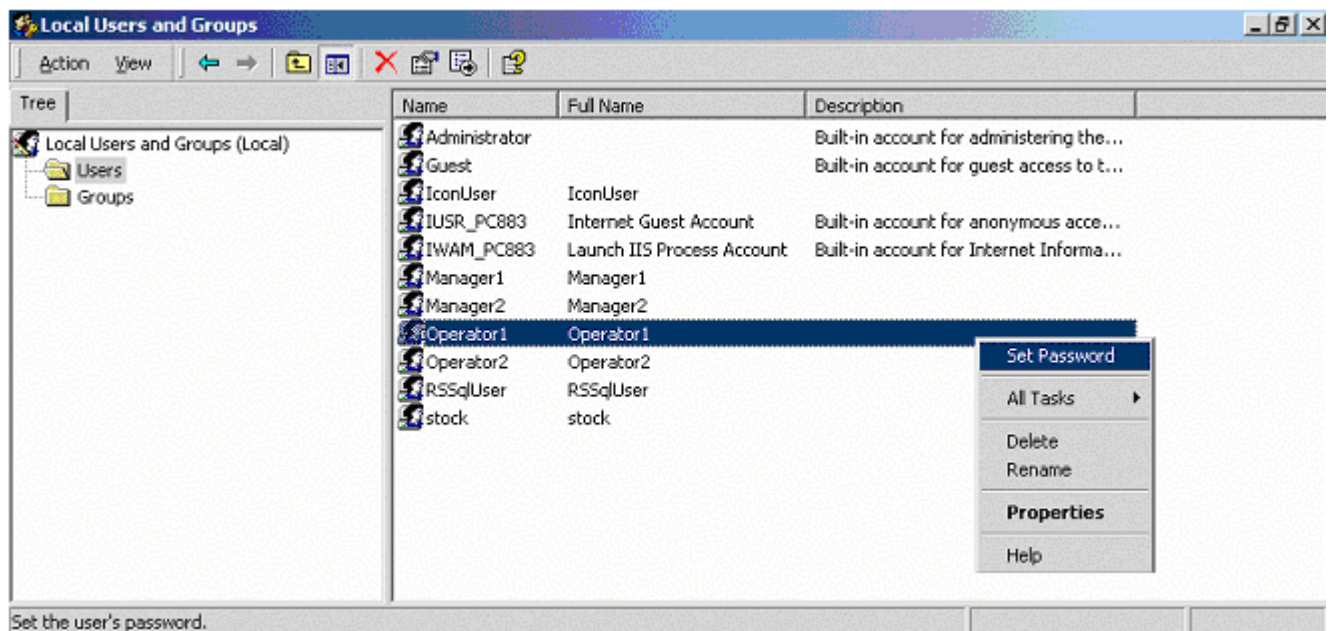
## d. Changing Windows User Account Passwords

### General

- See SECTION 2(c) to access this page

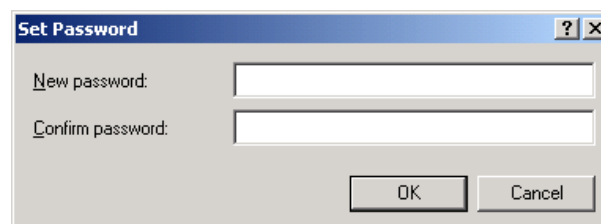
### Setting Password

- Right click on the windows user account you wish to modify.
- Select Set Password



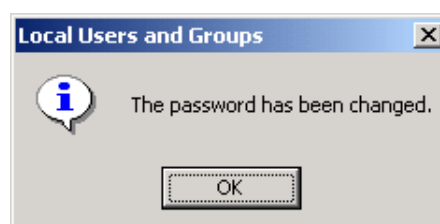
### Entering Password

- Enter information into each field right click OK



### Confirming Password Change

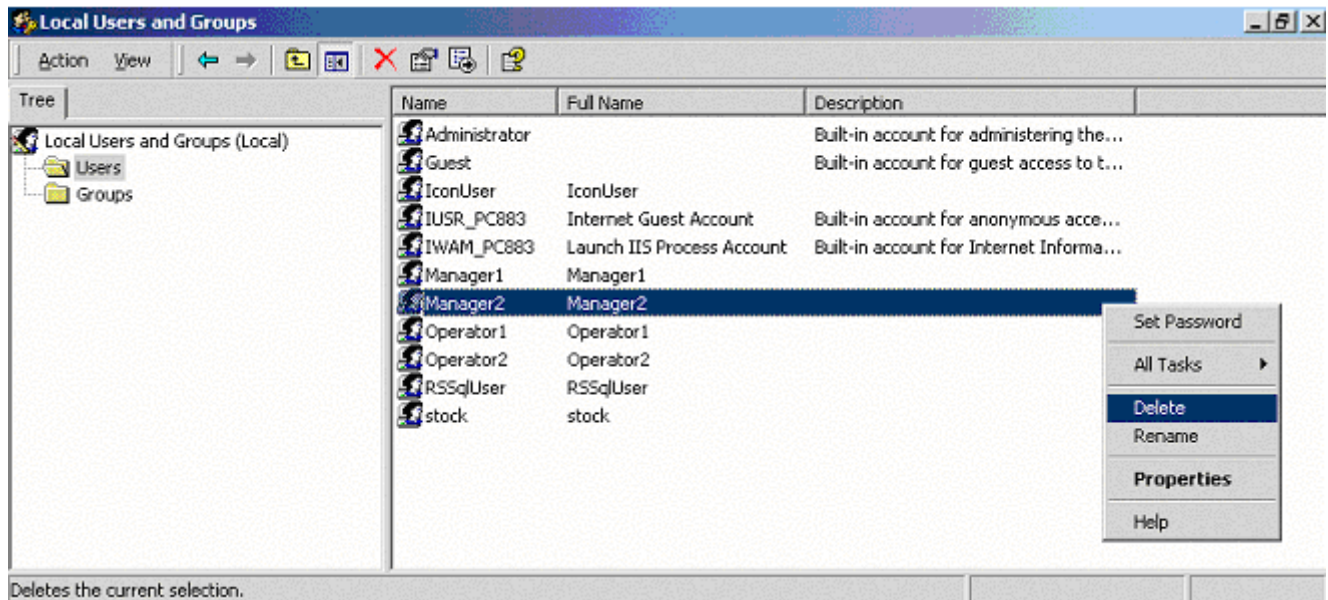
- Click OK



## e. Deleting Windows User Account

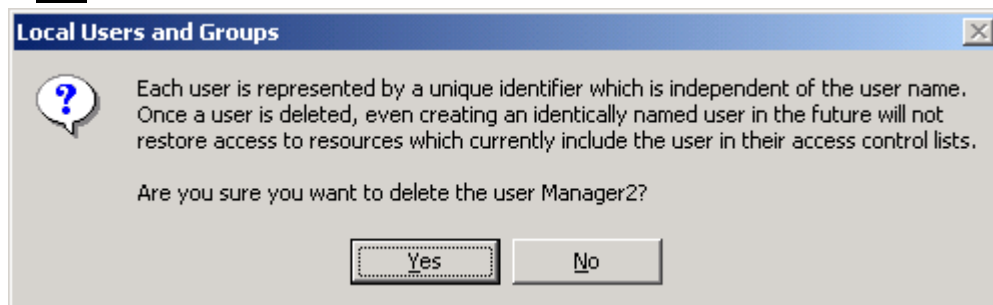
### General

- See SECTION 2(c) to access this page
- Select Users
- Right click on User to be removed
- Select Delete



### Deletion Warning

- Click Yes to delete this user



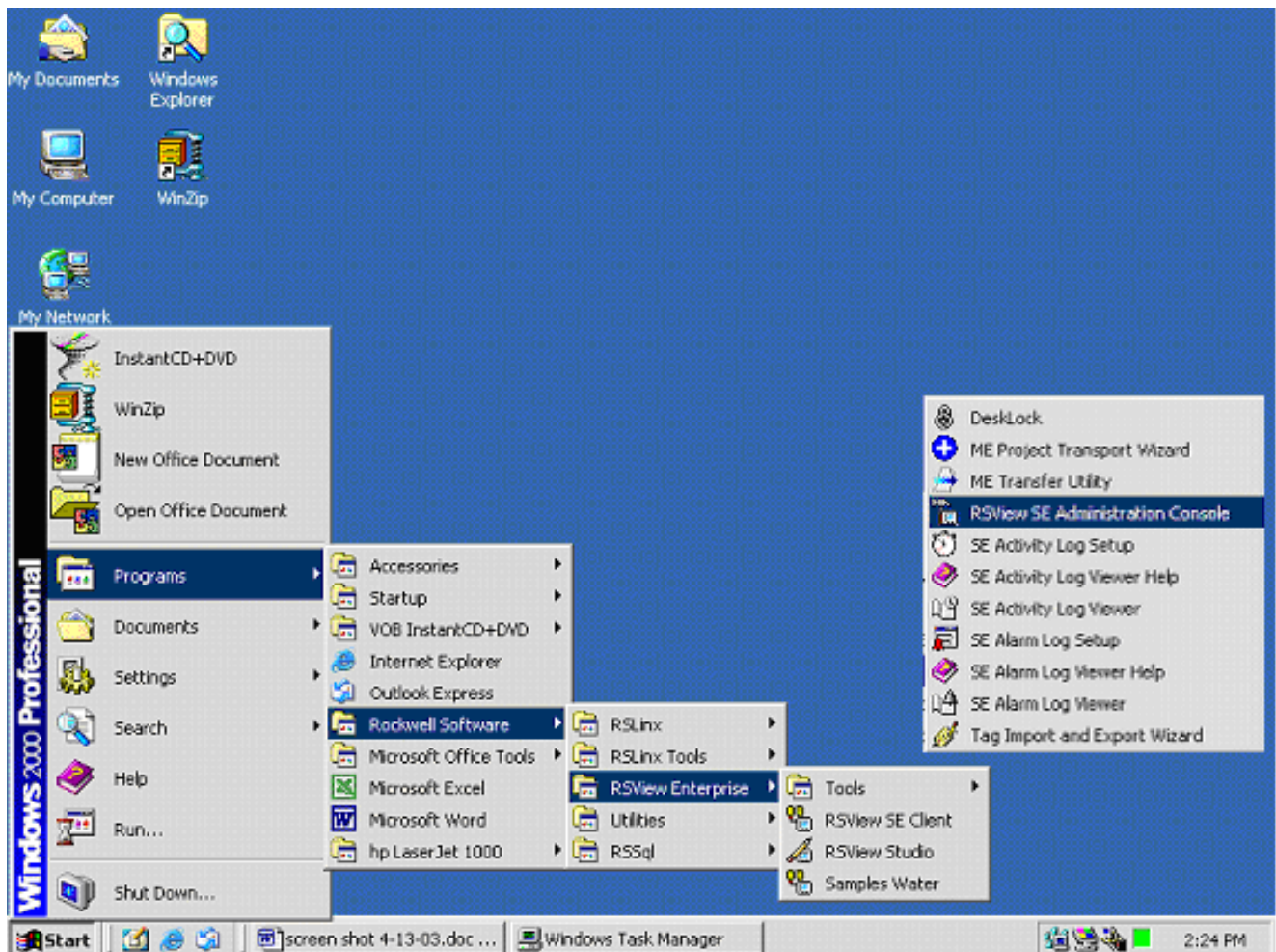
## f. Managing User Accounts in RS View

### General

- See SECTION 2(c) to access this page
- You must be logged into the PC as a user with Administrator privileges.

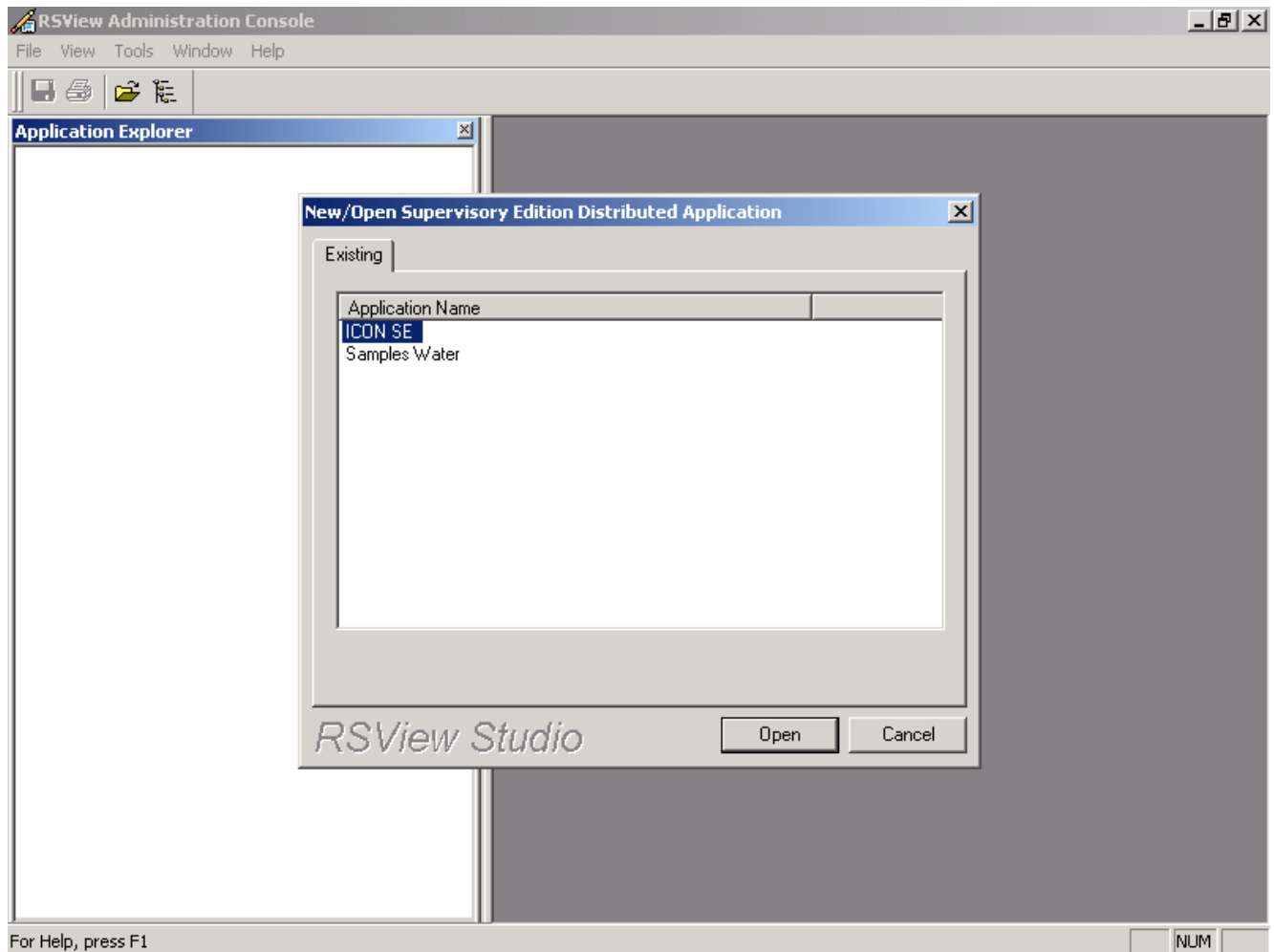
### Procedure

- Follow the path:
  - Select Windows Start → Programs → Rockwell Software → RSView Enterprise → Tools → RSView Administration Console.



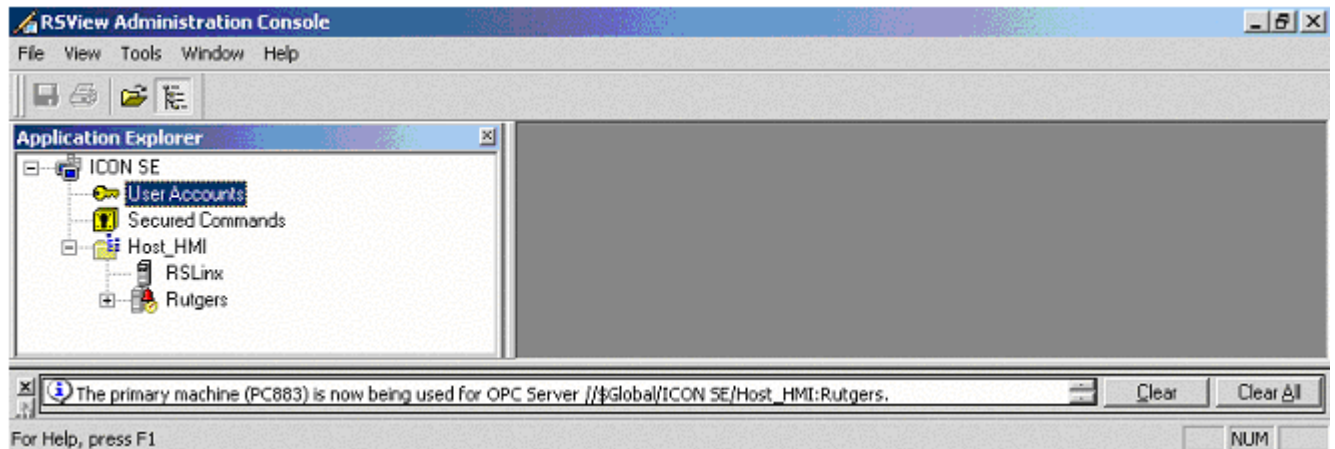
## Opening Application

- Open Application Explorer in RSView Administration Console
- Select New/Open Supervisory Edition Distributed Application
- Click on Existing tab
- Click on ICON SE



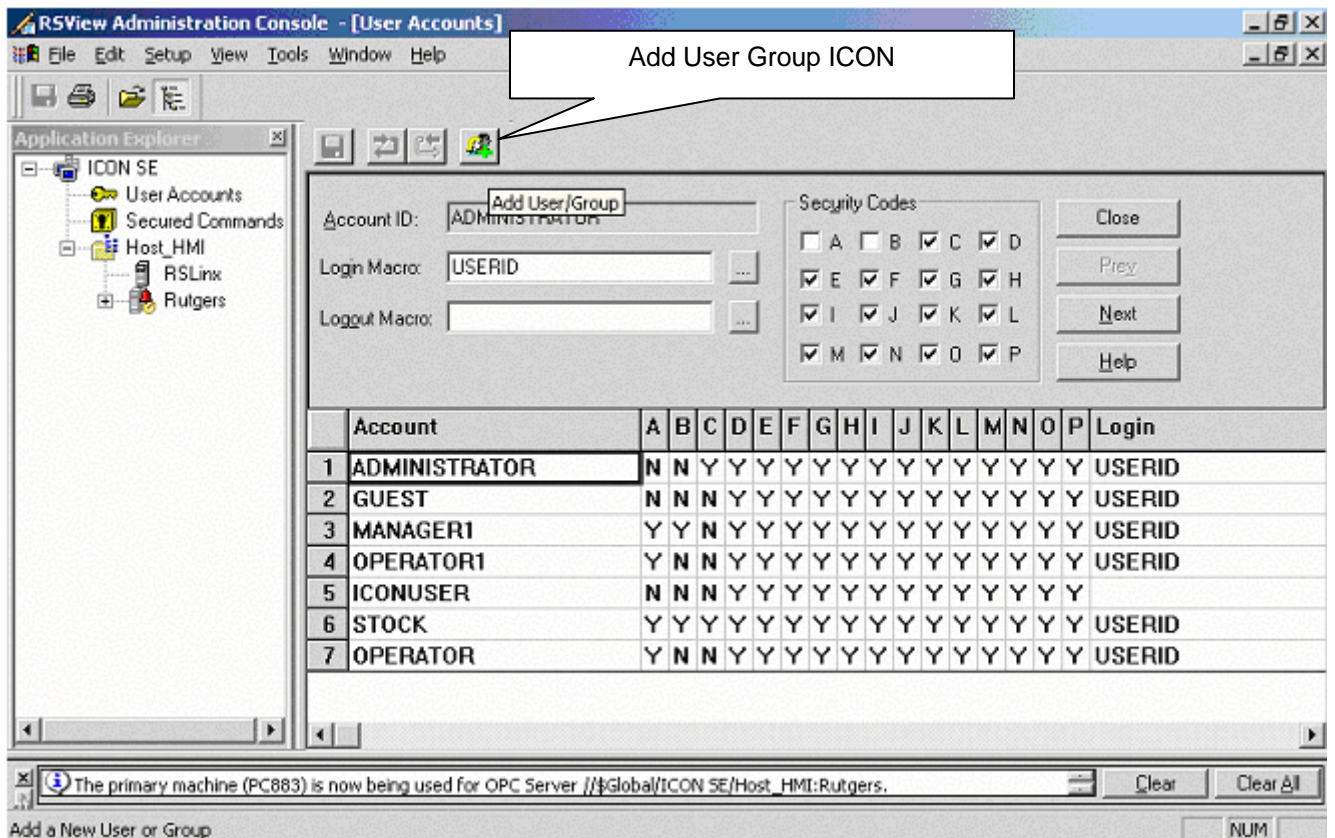
## Selecting User Accounts

- Double click on User accounts to open RS View User Accounts



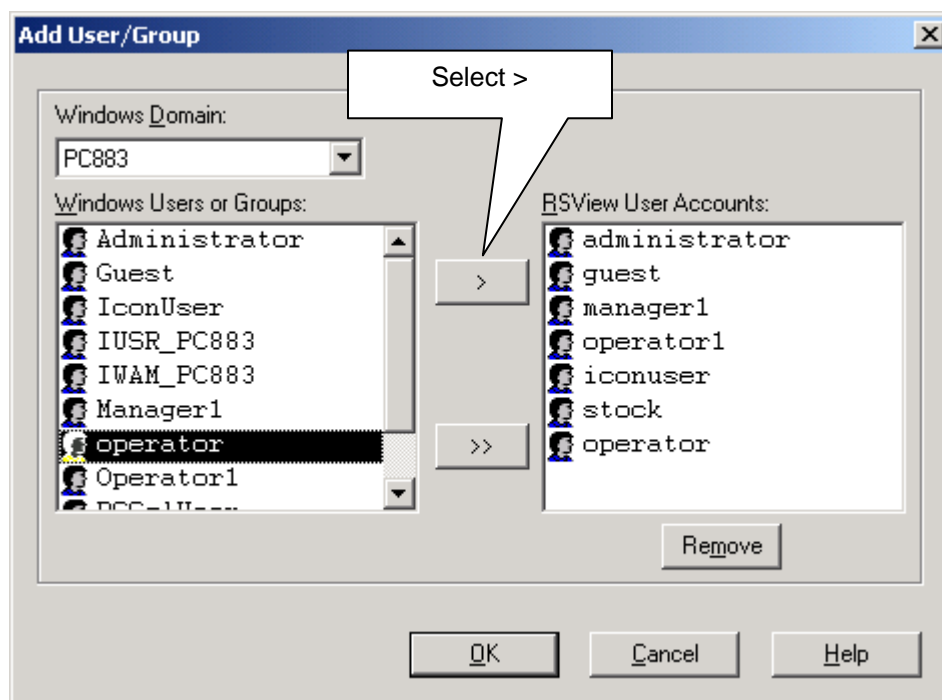
## Accessing User Accounts

- Left click on the Add User / Group button



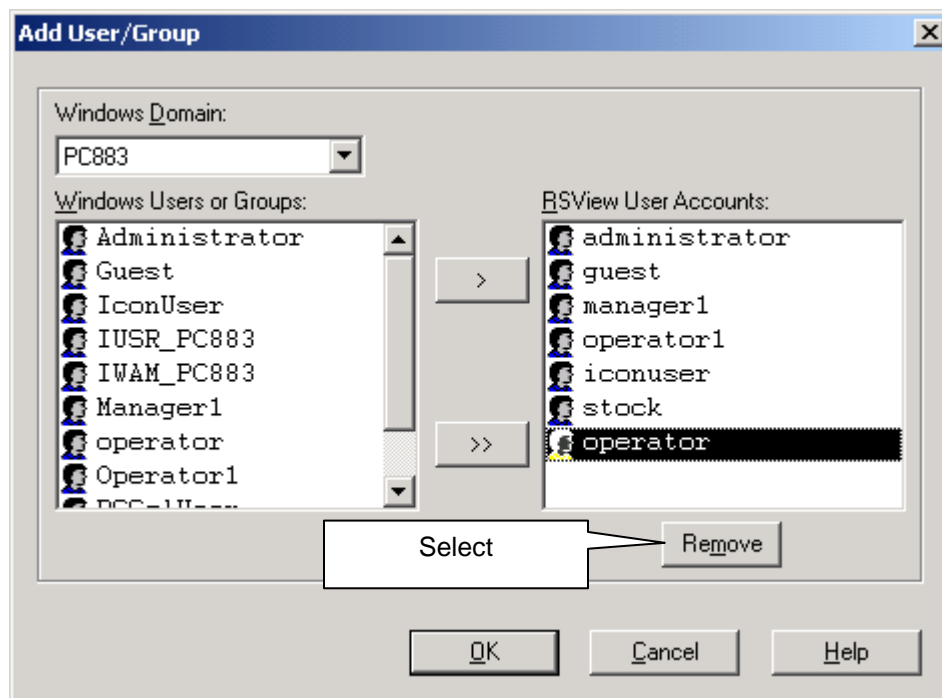
## Adding User Accounts

- Select (highlight) the user to be added
- Click the ">" button to add the selected user



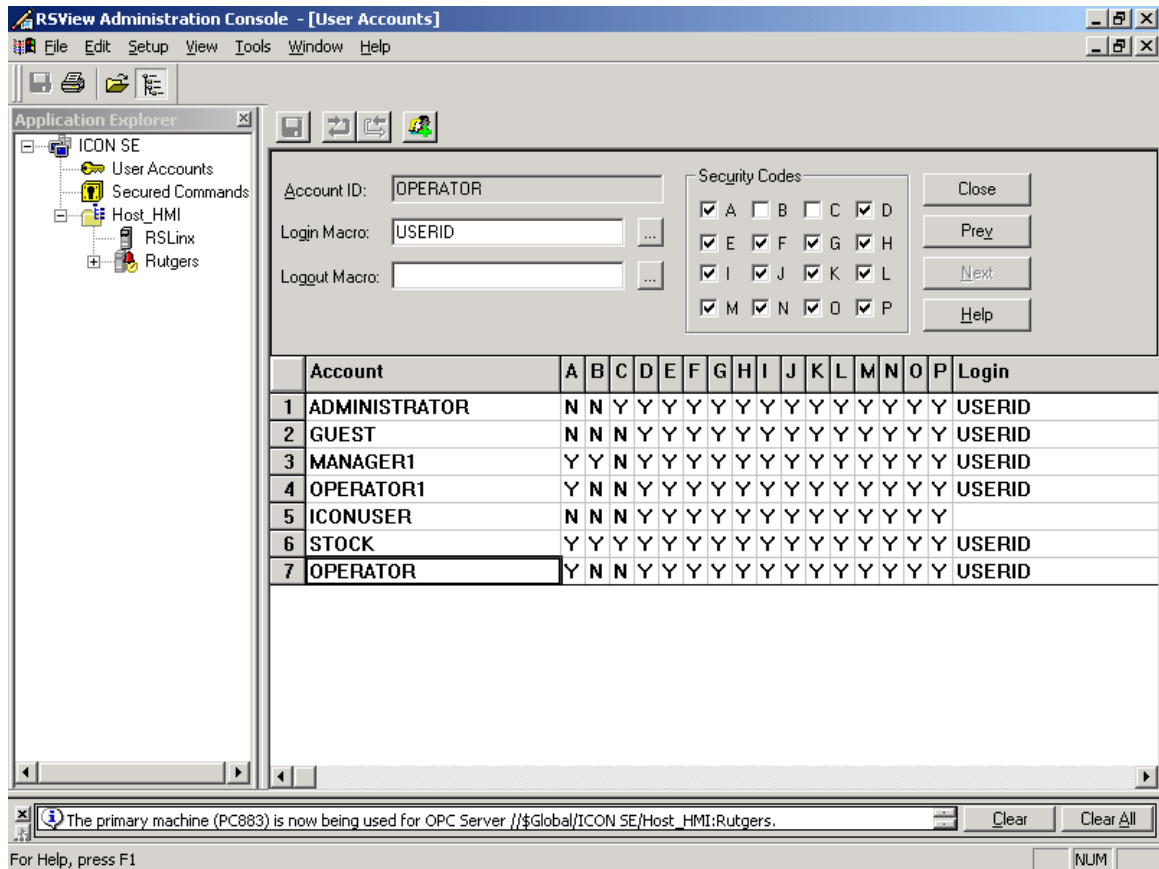
## Deleting User Accounts

- Select RSView User Accounts to be deleted
- Click Remove button



## Setting User Privileges

- Select User Account
- Check / Uncheck security codes as per note below
- Save and Close when finished



NOTES:		
Security Level	Active Codes	Setting
Operators	B & C	set to N
Managers	C	set to N
Administrators	A & B	set to N

## SECTION 3 – HOST COMPUTER

### a. Software and Hardware Requirements

#### Before You Begin

Before you begin to work with this system you should be familiar with using a Personal Computer (PC). This manual assumes that you have a working knowledge of a PC. If you are not comfortable with the PC operation please read the user manual for the PC first.

#### Information for Stand Alone Retort Installations

ICON<sup>SE</sup> provides operator interactions to all available functions of a STOCK retort. STOCK has developed software applications that are used to generate, store, modify and download specific recipes to STOCK Retorts. Additionally, ICON<sup>SE</sup> provides Sterilization Reports that are *accepted by FDA and USDA in lieu of manual records*. This report is automatically collected and printed at the end of each processing run.

NOTES:
The printer should be located in a climate-controlled environment suitable for sensitive electronic components.

#### Time and Date Management

See System Administrator to set time and date.

#### Hardware Specification

COMPUTER	Allen Bradley 6181 Industrial Computer
----------	--

#### Software Specification

Manufacturer	Program / ID	Version
Microsoft	MSSQL SQL Server 2000	Personal Edition
Microsoft	Office XP (Word and Excel)	Small Business Edition
Rockwell	RSView SE Client	2.10
Rockwell	RSView SE Server (25 Display)	2.10
Rockwell	RSSQL Professional1500 TAG	5.0
Rockwell	RS Linx for RSView	2.4 Included w/ Review SE

## SECTION 4 - ICON<sup>SE</sup> STARTUP, SHUT DOWN & LOGIN PROCEDURES

### a. Utility Start - Up Procedure

- Turn on
  - Water Supply
  - Main Electrical Service (If shutoff) Follow proper safety procedures.
  - Air Supply – Regulated to 85 psi  $\pm$
  - Steam Supply – Regulated to 85 psi minimum

### b. Retort Power-Up Procedure

- Power to Retort
  - Turn on power switch on Front Panel

### c. Software Start - Up Procedure

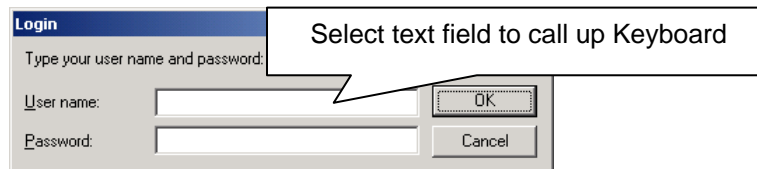
- Power to Human Machine Interface (HMI)
  - Turn on power to UPS Battery back up inside of front panel
- Wait for Operating system software to load

### d. Software Reboot Procedure

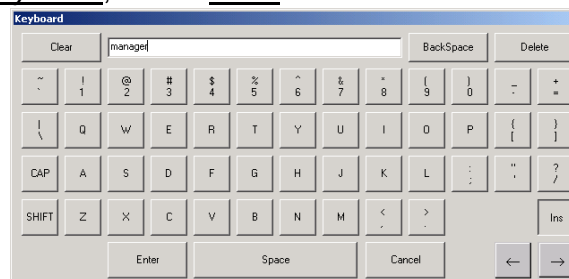
- Exit windows per standard Microsoft Windows procedure: Windows Menu Start → Shut Down → Shut Down
- Power off UPS Battery back up inside of front panel: Turn on UPS Battery back up

### e. Login Procedure

- Appropriate system access will be granted based upon security setting
- Login– Select button on Overview Screen to gain access to ICON<sup>SE</sup> system (Fig. 5.1)
  - User and Password – Select a field on Login prompt, select OK after all entries have been made



- Enter text on Keyboard, Select Enter button



## SECTION 5 - ICON<sup>SE</sup> HUMAN MACHINE INTERFACE

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### a. General Information

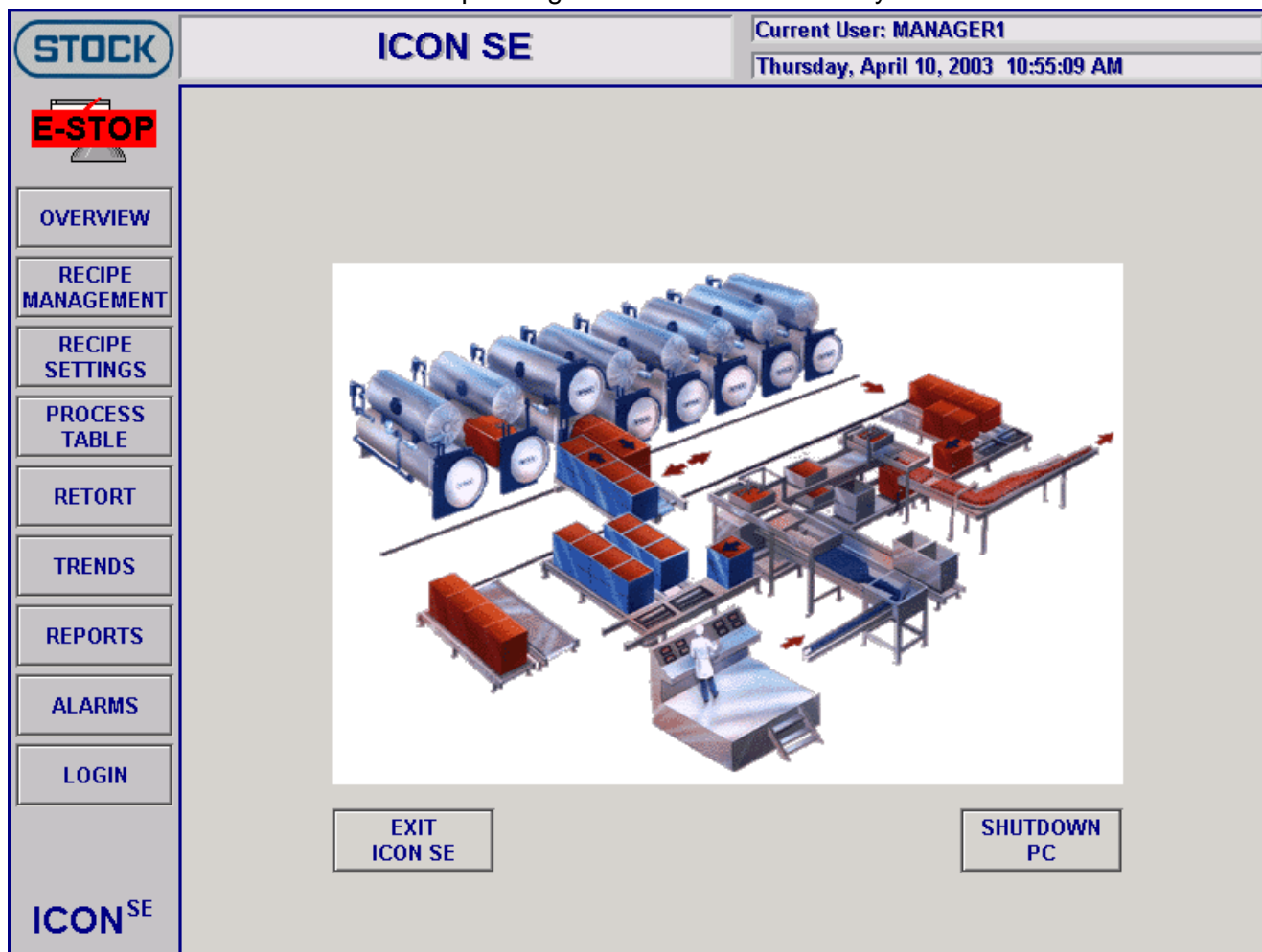
- Retort **HUMAN MACHINE INTERFACE (HMI)** screens are **TOUCH SCREENS**.
  - All information is entered on the **HMI** screens.
  - Toggle buttons, touch fields, Pop-up Key Pads or Keyboards are used to access or input data.
  - **DO NOT** use a marking pen or sharp instrument to enter information on the **HMI** touch screen as it may be damaged.
- 

### b. Interface and Input Screen Examples

- **Overview Screen** – First HMI screen to appear, contains buttons to shut down the applications
- **Main Menu** – Will appear on most screens and is located on the left hand side of screens.
- **Key Board** – Use for Text inputs
- **Key Pad** – Use for Numerical inputs
- **Recipe Management** – Use to set recipe specific parameters.
- **Step Management** – Used to Copy Move or Delete steps
- **Recipe Settings** – Sets parameters for use in **all recipes** within a **Operation Mode**
- **Select Product Code** – Displays a list of recipe codes to chose from
- **Setpoint Input** - For modification of setpoint data.
- **Report Generation Form: Select Batch ID** – User generated reports from a list of processes.
- **Login Screen** – To Logon user to system
- **Product Registration** – Assigns the product a place in the SQL Server Database
- **Update Confirmation** – Used to verify the recipe description prior to saving changes.
- **Custom Table Settings** – For process variable information (Process Authority Input only)  
Contains the range of acceptable Initial Temperatures and Retort Temperatures used to calculate process time.
- **String Input** – To enter a text description for the recipe. Part of the registration process
- **Download Confirmation** – Verification that the user wants to **Download** recipe to HOST PC for use in **NEXT COOK**
- **Retort Screen** – Real time display of Retort: piping, valves, temperatures, pressures, level sensors, rotation, set point & actual values, holds, pauses, step description, user input prompts and process times.
- **Start Confirmation** – Allows operator chance to wait before process begins and confirm information prior to process startup.
- **IT Configuration** – For setting the prompt for IT (Initial Temperature)
- **Pause Confirmation** – Confirms operator wants to “Pause” process
- **Remove Pause & Continue** - Confirms that operator wants to continue process
- **Hold Confirmation** – Confirms operator wants to “Hold” process
- **Remove Hold Confirmation** - Confirmation that operator wants to continue process
- **Abort Confirmation** - Confirms operator wants to “Abort” process
- **User Input Confirmation** – Prompts for MIG, Chart, Pressure & Water Level
- **Alarm Summary** - Operator access to view & acknowledge presence of alarms.
- **Operational Range of Set Points and Fields** – Indicates the ranges for values for specific feilds
- **Input Validation** – Allows operator to review User Input Entries before saving
- **Trending** – Shows real time data for Process Vessel & Storage Vessel: Temperature and Pressure

## Overview Screen (Fig. 5.1)

- Used to access the various operating features of the *ICON<sup>SE</sup>* system.



Button	Function
Exit ICON SE	Exit ICON <sup>SE</sup> shuts down HMI screen and program – Process will still run
Shutdown PC	Shut Down PC - Logs Out of system

## Main Menu (Fig. 5.2)

- Used to access the various operating features of the *ICON<sup>SE</sup>* system.

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 11:07:18 AM

Product Code:    
 Container Size: 0.000000  
 Container Type: 0.000000

Step Number: **01**

Step Type: ◀ Error ▶

**PROCESS VESSEL** **STORAGE VESSEL**

Temperature: Setpoint 0.0 Deg.F Rotor: Speed 0.0 RPM Temperature: Setpoint 0.0 Deg.F  
 Gradient 0.0 Deg.F Position ◀ Error ▶

System Pressure: Setpoint 0.0 PSI  
 Gradient 0.0 PSI

**MISC** **Programmable Contacts:** **STEP MANAGEMENT**

Time: Setpoint 0  
☐ Hold 0 : 00

☐ Contact #1  
☐ Contact #2  
☐ Contact #3  
☐ Contact #4  
☐ Contact #5

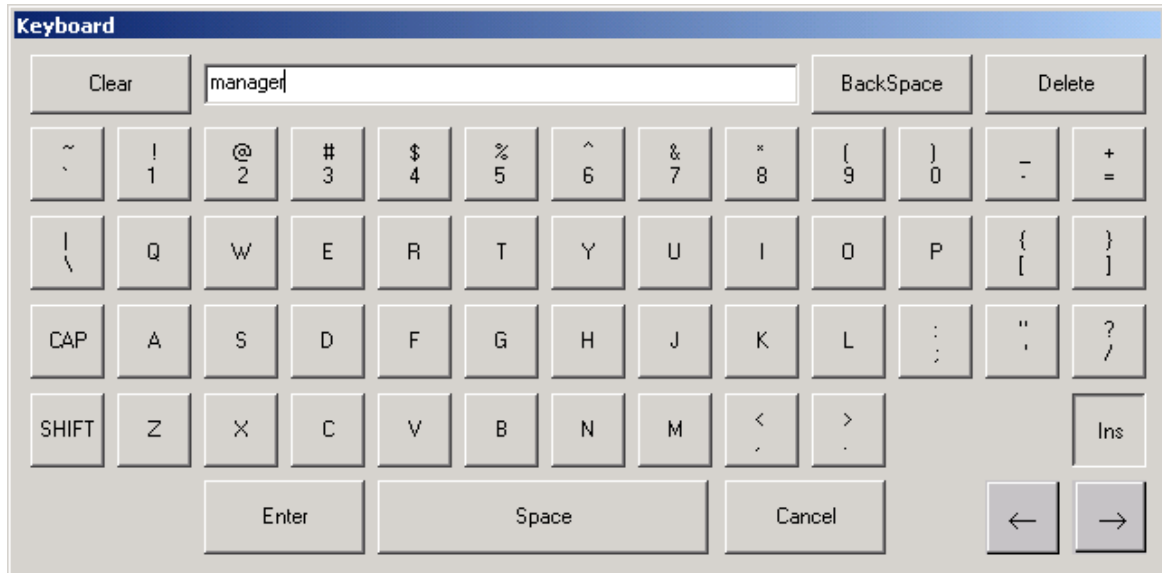
Source Step: 1   
 Destination Step: 32

**ICON<sup>SE</sup>**

Field or Button	Function
Overview	Access to Main Menu, Exit <i>ICON<sup>SE</sup></i> & Shut Down PC - Log Out buttons
Recipe Management	Used to set parameters used in a specific recipe
Recipe Settings	Used to set parameters used in all recipes (Global Settings)
Retort	Shows the operational screen used during the run
Trends	Graphical representation of key operational parameters on a real time basis during process
Reports	Used for accessing the various reports available
Alarms	Access to the list of current alarms
Login	Required before any changes can be made

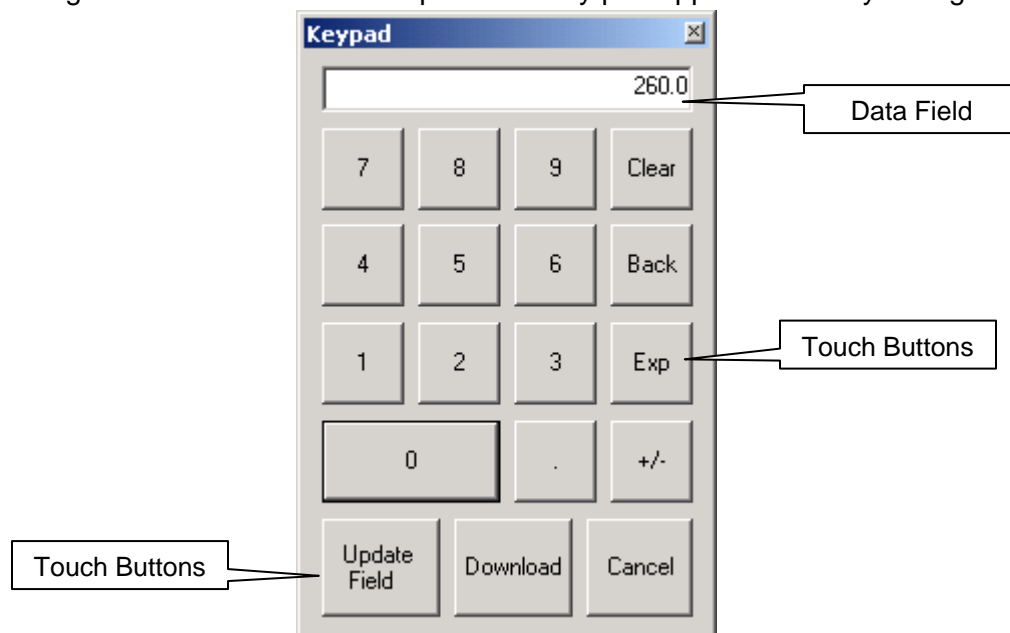
## Keyboard (Fig. 5.3)

- Used for text inputs: ex. User names and passwords



## Key Pad (Fig 5.4)

- Used to make numerical inputs onto the *ICON<sup>SE</sup>* user *HMI* interface screens.
- Depending on what information is required the key pad appearance may change slightly.



Button	Function
ESC	Returns to previous screen
Back	Deletes last entry
Clear	Deletes entire entry
Accept	Enters data into program

## Recipe Management Screen (Fig 5.5)

- Set information for any given recipe step to suit processing needs.
- Access by selecting the Recipe Management button on left hand Main Menu.
- Change information by use of toggle buttons or touch fields.

[illegible]

Field or Button	Function
Select Button	Selects a list of recipes to choose from
Recipe Settings	Used to set parameters used in all recipes (Global Settings)
Registration	Assigns the new recipe a position in the SQL Server Database
Step Type	Indicates what processing step is located on a particular step number: S1, S2, S3, C1 ...etc
Temperature / Pressure Set Points	Temperature or pressure set point for the step
Gradient	Positive rate of temperature or pressure change per minute during the set point time
Misc. Time Set point	Total time of the step entered in seconds (Minutes and Seconds will automatically calculate)
Rotor Speed	RPM from 7 to 30
Rotor Position	A = Horizontal, B = Custom, C = Custom
Hold	Places a hold on the process at the end of the step. A user entry is required to continue.
Step Management	Used to Move, Copy or Delete a step
Source Step	Is the step that is chosen for Moving, Copying or Deletion
Destination Step	Is the step that is chosen for information to be Moved to, Copied to
Programmable Contacts	Used for adding devices to the operational control panel.

## Step Management (Fig. 5.6)

- Access function - select Recipe Management button on left hand Main Menu
- Copy, Move or Delete – Select button to perform function for any given recipe step.
- Source Step - step to Copy, Move or Delete.
- Destination Step - location desired for the Copied or Moved step to be pasted to.
- Delete - removes the step.
  - Change information by use of Key Pad pop up screen

The screenshot displays the 'Recipe Management Screen' for 'Current User: MANAGER1' on 'Thursday, April 10, 2003 1:13:54 PM'. The interface includes a left-hand menu with buttons for OVERVIEW, RECIPE MANAGEMENT (highlighted), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area shows product details (Product Code: 3, Revision: 1, Product Desc.: Example for Product Registration Confirmation, Container Size: Ballast, Container Type: Ballast) and a grid of step buttons (STEP 1 to STEP 7, with STEP 1 highlighted). Below this, there are sections for PROCESS VESSEL (Temperature, Rotor, System Pressure) and STORAGE VESSEL (Temperature). A 'STEP MANAGEMENT' section at the bottom right includes 'Source Step' (01), 'Destination Step' (32), and buttons for MOVE, COPY, and DELETE. A 'Programmable Contacts' section is also visible. Callouts indicate 'Select button to access page' pointing to the RECIPE MANAGEMENT button and 'Touch Button to call up key pad??' pointing to the MOVE button.

Field or Button	Function
Move Button	Moves data from <u>Source Step</u> to <u>Destination Step</u>
Copy Button	Copies data from <u>Source Step</u> to <u>Destination Step</u>
Delete Button	Deletes step that is indicated in <u>Source Step</u> box
Source Step	Is the step that is chosen for <u>Moving</u> , <u>Copying</u> or <u>Deleting</u>
Destination Step	Is the step that is chosen for information to be Moved to or Copied to

## Recipe Settings (Fig. 5.7)

- Access by selecting the Recipe Settings button on left hand main menu
- All recipes created in a specific Operation Mode use this information. (Ex: FWI is Full Water Immersion)
- Change information on screen by use of toggle buttons or key pads / touch fields
- Alarm Tolerances are to be set in conjunction with a **Process Authority** and can be used as the basis for deviation analysis

The screenshot shows the 'Recipe Settings' interface. At the top, it displays 'Current User: MANAGER1' and the date/time 'Thursday, April 10, 2003 11:35:32 AM'. The left sidebar contains buttons for 'STOCK', 'RECIPE SETTINGS' (highlighted), 'PROCESS TABLE', 'RETORT', 'TRENDS', 'REPORTS', 'ALARMS', and 'LOGIN'. The main area is divided into sections: 'Operation Modes' with a 'Sterilization' toggle set to 'FWI'; 'Alternate Process' with a 'Table Method' toggle set to 'CUSTOM'; 'ALARM TOLERANCES' with a table of parameters; 'General Information' with checkboxes for 'Prompt for I.T.' and 'E.S. Mode'; and 'User Inputs' with 'Number of Inputs' and 'Input Interval #1' toggles. Callouts identify 'Touch Button to access page', 'Toggle button', and 'Touch Fields'.

ALARM TOLERANCES	
LOW	HIGH
3.0	4.0
10.0	10.0
4.0	5.0
4.0	5.0
2	2
55.0	96.0
50.0	99.0

Field or Button	Function
Sterilization (Operation Mode)	Sets type of process, FWI, Steam, Spray (Not all processes will be active, this is customer dependant )
Table Method	Custom (generated by the Process Authority)
Table	To select a table
Alarm Tolerances	Sets high and low values for selected parameters
Number of Inputs	Defines number of times a prompt for information appears
Input Interval	Defines interval at which a prompt for information appears
Prompt for IT	Places a hold on process until operator enters a value
ES Mode	Activates the <i>Energy Saving Mode</i> of operation (Optional)
Input Interval	Defines interval at which a prompt for information appears

## Select Product Code (Fig. 558)

- Access screen by Selecting Select button in upper right hand corner of Recipe Management Screen
- Select Product number on screen to access information
- In Add mode enter new numbers required by use of key pad.
- Key Pad is activated by Selecting the Add button at the bottom of the screen

Button	Function
Load	Puts recipe into controller for use or modification
Add	To create new recipe in database for future use or modification
Print	To print recipe user selects from list
Cancel	Exits Screen

## Set point Input (Fig. 5.9)

- Access by selecting a touch field on Recipe Management Screen
- Set point information is changed by use of the key pad

Button	Function
Accept	Enters the data into the recipe
Cancel	Exits Screen

## Report Generation Form – Please Select Batch ID (Fig. 5.10)

- Report generation for cooks that are on the Batch ID list.
- Cooks are generated by selecting the desired Batch ID then selecting the reporting option

**Report Generation Form - Please Select Batch ID**

Batch ID: 8831028332142003 Retort Number: 883 Product Code: 32767 Recipe Revision: 2 Start Time: 2/14/2003 10:28:33 AM

Touch number Field

Sterilization Report Recipe Report Cancel

Button	Function
Batch ID	Touch field that is used to select the Batch ID# to be reported
Sterilization Report	Allows sterilization record to be printed for a chosen Batch ID
Recipe Report	Allows recipe record to be printed for a chosen Batch ID

## Login (Fig. 5.11)

- Required before permanent changes to data will be granted
- Select a touch field on the screen and enter information on Key Board. (Fig 5.3)

**Login**

Type your user name and password:

User name: manager Password: xxxxxx

Touch Field

OK Cancel

Touch Field

## Product Registration (Fig. 5.12)

- Used to confirm recipe and add information specific to the Product Code in text boxes
- Select a touch field on the screen and enter information on Key Board. (Fig 5.3)

Field or Button	Function
Confirm	Allows data to be entered into the recipe
Cancel	Exits Screen
Text Fields	Dialog box filled in by keyboard

## Update confirmation (Fig. 5.13)

- Used to confirm Product Code and Revision selected for updating is correct

Button	Function
Confirm	Allows data to be entered into the recipe
Cancel	Exits Screen


## Custom Table Settings (Fig. 5.14)

- Used to set process variables for retort temperature and Initial temperature
- Manual entry fields data is accessed by touch field and key pad

STOCK

### Custom Table Settings

Current User: **MANAGER1**  
 Thursday, April 10, 2003 11:56:12 AM



OVERVIEW

RECIPE MANAGEMENT

RECIPE SETTINGS

PROCESS TABLE

RETORT

TRENDS

REPORTS

ALARMS

LOGIN

**ICON<sup>SE</sup>**

#### Custom Process Table

Process Vessel Temperature										
I.T.	246.0	248.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	420	390	360	0	0	0	0	0	0	0
50.0	380	365	340	0	0	0	0	0	0	0
55.0	330	325	320	0	0	0	0	0	0	0
0.0	0	0	0	0	0	0	0	0	0	0
0.0	0	0	0	0	0	0	0	0	0	0

Note: Times are entered in Seconds.

Touch the fields to call up Keypad

### NOTE:

**This is CRITICAL part of the thermal process do not change these values without consulting a Thermal Process Authority**

## String Input (Fig. 5.15)

- Text box for Product Description
- Found through Recipe Button on main menu

Field or Button	Function
Accept	Enters text into the Global Recipe Setting page
cancel	Quits function and exits screen
Comments	Dialog box filled in by keyboard

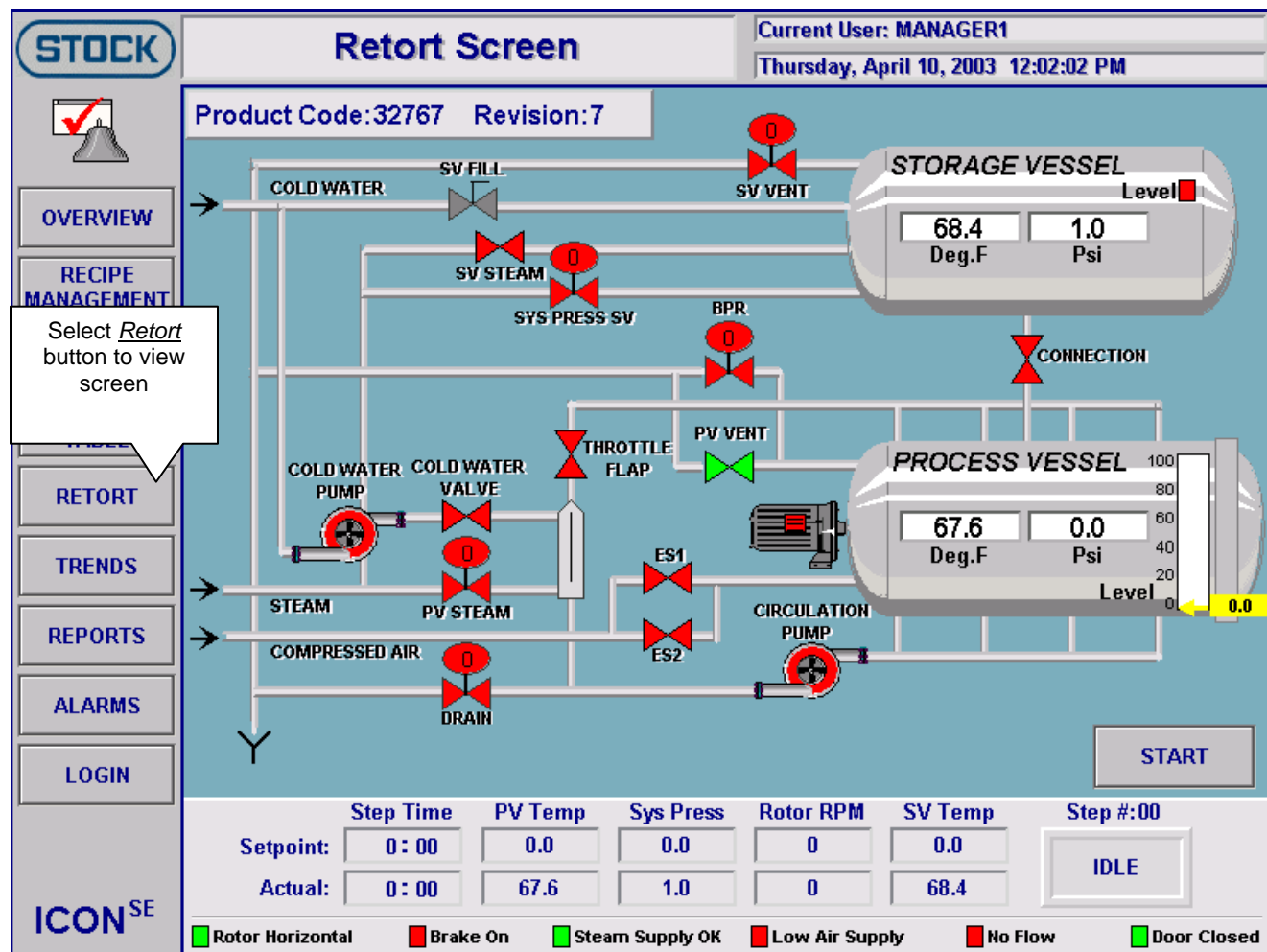
## Download Confirmation (Fig. 5.16)

- Confirmation of the recipe to be downloaded and comments if desired.

Field or Button	Function
Confirm	Confirm the recipe is the correct one to change
Cancel	Exits Screen
Comments	Dialog box filled in by keyboard

## Retort Screen (Fig. 5.17)

- This is the operational screen for the *ICON<sup>SE</sup>* controller.
- The screen may change appearance as processing steps are completed
- Analog valves and level indicators indicate the % open on the display
- Digital Valves and motors are on or off
- The entire process is monitored from this screen
  - Valves, pumps, temperatures & pressures (set points & actual), water level, step time, Rotor Position, Water Supply, Brake, Steam Supply, No Flow Warning, Door Closed and RPM



Button	Function
Start	Begin process

## Start Confirmation (Fig. 5.18)

- Prompt for confirmation that the displayed cook information is correct and entry of cook number

The 'Start Confirmation' screen displays the following information:

- Start of Cook:**
- PRODUCT CODE:** 32767
- REVISION:** 2
- DATE & TIME:** Friday, February 14, 2003 10:24:14 AM
- COOK NUMBER:** 2141 (with a 'Touch Field' callout pointing to the input area)
- YES** and **NO** buttons for confirmation.
- A **STOCK** button at the bottom.

Field or Button	Function
Cook Number	To assign a reference number to a specific cook

## IT Configuration (Fig. 5.19)

- Setting the prompt for IT (Initial Temperature) found in Recipe Settings
- If selected IT must be entered before the process can begin

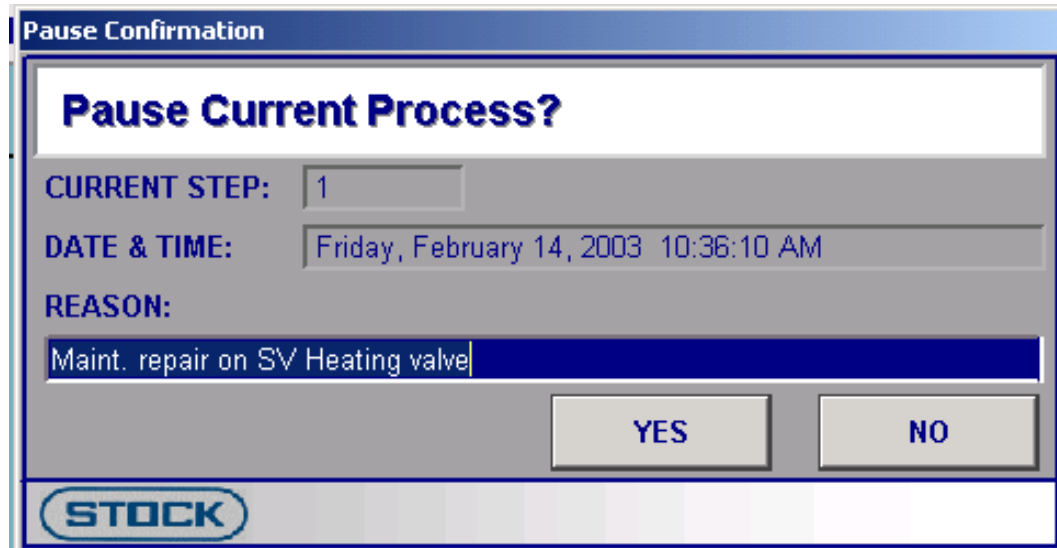
The 'IT Confirmation' screen displays the following information:

- Please Enter Initial Temperature:**
- PRODUCT CODE:** 32767
- REVISION:** 2
- DATE & TIME:** Friday, February 14, 2003 10:41:49 AM
- INITIAL TEMP.:** 45.0
- YES** and **NO** buttons for confirmation.
- A **STOCK** button at the bottom.

Field or Button	Function
Initial Temp	Value the <u>Process Tables</u> references to set process time

## Pause Confirmation (Fig. 5.20)

- Prompts for confirmation that the operator wants to pause the process
- Pause stops the process and returns all pumps and valves to safe (closed) condition
- Pause can be activated at any time during the process

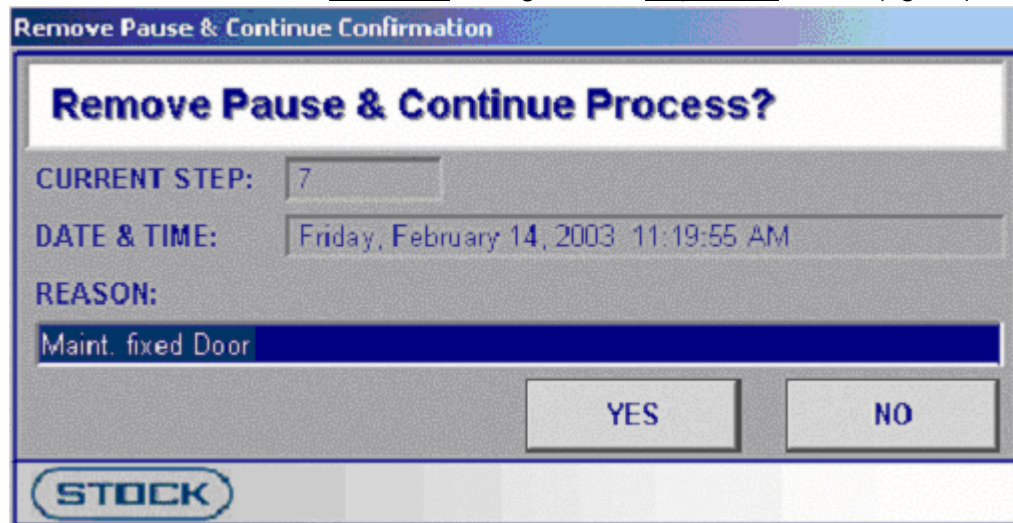


The dialog box is titled "Pause Confirmation" and "Pause Current Process?". It contains fields for "CURRENT STEP:" (value 1), "DATE & TIME:" (Friday, February 14, 2003 10:36:10 AM), and "REASON:" (Maint. repair on SV Heating valve). There are "YES" and "NO" buttons at the bottom right, and a "STOCK" button at the bottom left.

Field or Button	Function
Reason	To assign text to explain cause of event

## Remove Pause & Continue Process (Fig. 5.21)

- Resumes the process from the point that the Pause was entered.
- Restarts pumps, resets valves to run positions and finishes any remaining time.
- Prompts for confirmation that the operator wants to continue the process
  - Text can be added in the "Reason" dialog box via Keyboard screen (fig 5.3)

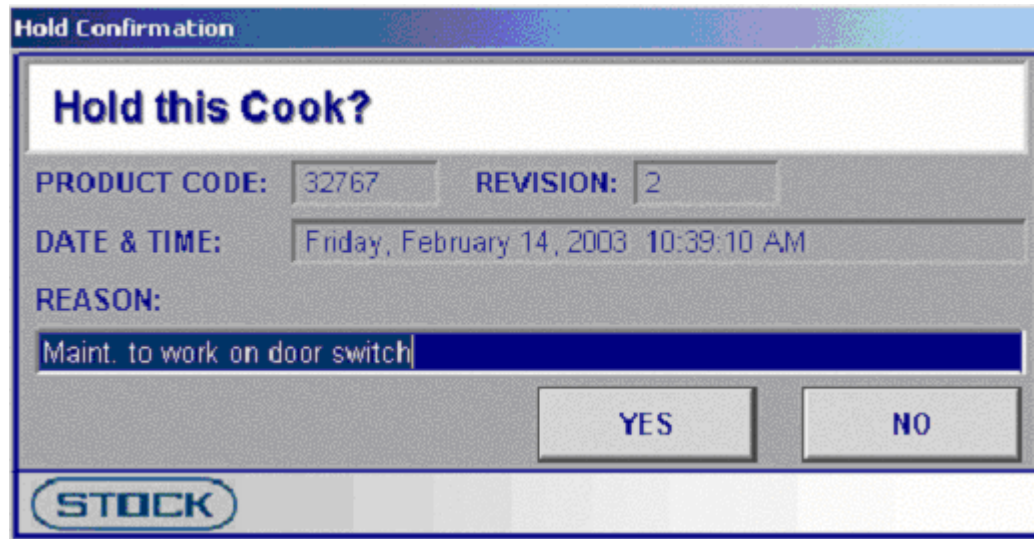


The dialog box is titled "Remove Pause & Continue Confirmation" and "Remove Pause & Continue Process?". It contains fields for "CURRENT STEP:" (value 7), "DATE & TIME:" (Friday, February 14, 2003 11:19:55 AM), and "REASON:" (Maint. fixed Door). There are "YES" and "NO" buttons at the bottom right, and a "STOCK" button at the bottom left.

Field	Function
Reason	To assign text to explain event

## Hold Confirmation (Fig. 5.22)

- Prompt for confirmation that the operator wants to place a hold in the process
- Hold keeps the process in the current step indefinitely & can be placed at any point in the process
- Text can be added in the "Reason" dialog box

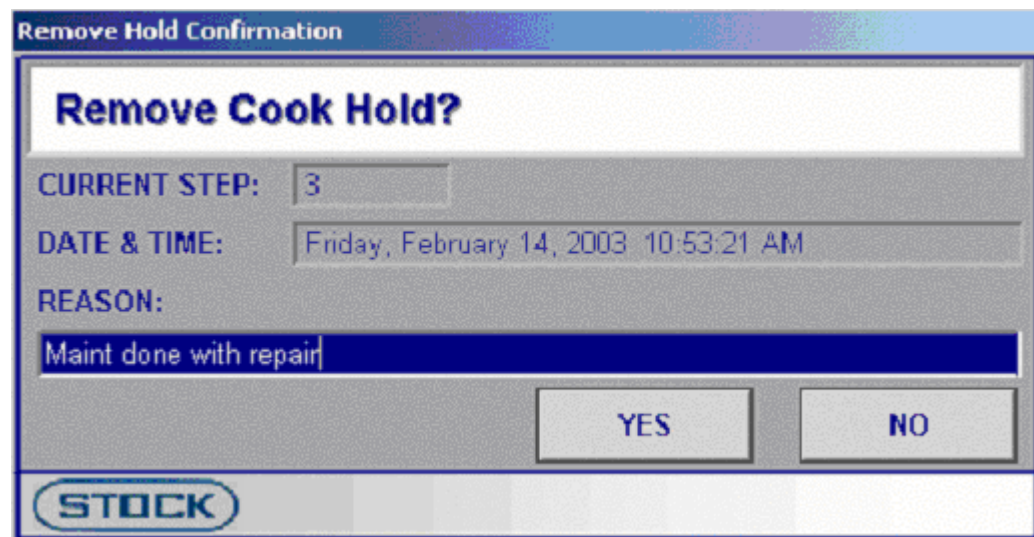
The dialog box is titled "Hold Confirmation" and "Hold this Cook?". It contains fields for "PRODUCT CODE:" (32767), "REVISION:" (2), and "DATE & TIME:" (Friday, February 14, 2003 10:39:10 AM). A "REASON:" field contains the text "Maint. to work on door switch". At the bottom right are "YES" and "NO" buttons. At the bottom left is a "STOCK" button.

Field or Button	Function
Reason	To assign text to explain

Field or Button	Function
Reason	To assign text to explain

## Remove Hold Confirmation (Fig. 5.23)

- Prompts for confirmation that the operator wants to remove the Hold and finish remaining time in the process step.
- Text can be added in the "Reason" dialog box via Keyboard screen
- To remove hold select Yes

The dialog box is titled "Remove Hold Confirmation" and "Remove Cook Hold?". It contains fields for "CURRENT STEP:" (3), "DATE & TIME:" (Friday, February 14, 2003 10:53:21 AM), and "REASON:" (Maint done with repair). At the bottom right are "YES" and "NO" buttons. At the bottom left is a "STOCK" button.

Field or Button	Function
Reason	To assign text to explain

Field or Button	Function
Reason	To assign text to explain

## Abort Confirmation (Fig. 5.24)

- This stops the process and returns the valves to a safe condition.
- Prompts for confirmation that the operator wants to Abort the process
- Text can be added in the "Reason" dialog box via Keyboard screen
- Select Yes button to Abort cook

Field	Function
Reason	To assign text to explain

## User Input Confirmation (Fig. 5.25)

- Input will be used to reference process tables to recalculate process time if MIG reading is below process temperature.
- Signaled by alarms and prompts for operator input and confirmation of MIG, Chart Temp, System Pressure, RPM, PV Level.
- Process will remain in SIII until inputs are entered,
- User and password will be verified before data entry

Field or Button	Function
MIG Temp field	Enter in reading for MIG
Chart Temp field	Enter in reading Chart
System Pressure field	Enter in reading System Pressure
Rotor RPM field	Enter in reading for rotation RPM
PV Level field	Water level in process vessel
Confirm button	Acknowledges the readings are correct

### Note:

MIG reading entered must be higher than chart reading. An Input Validation screen appears for confirmation of the entered readings. See manager if condition exists

## Alarm Summary (Fig. 5.26)

- Lists alarms that occurred during a cook.
- Automatically prints at the end of cook cycle
- Alarm Indications
  - Blinking Light or Horn - Indicates that an alarm condition exists for prompt for user inputs.
  - Steady Light or Horn – Critical Alarm and needs to be evaluated immediately

**STOCK** **Alarm Summary** Current User: MANAGER1  
Thursday, April 10, 2003 8:32:47 PM

Alarm Time	Alarm Date	Tag Description	Tag Value
8:32:18 PM	4/10/2003	Retort 883: High System Pressure Alarm	0
8:32:08 PM	4/10/2003	Retort 883: High System Pressure Alarm	1

Touch Button Touch Button Touch Button

**ICON<sup>SE</sup>** **Ack Current** **Ack Page** **Ack All**

Button	Function
Ack Current	Operator acknowledges the selected alarm
Ack Page	Operator acknowledges all alarms on the current page
Ack All	Operator acknowledges all of the alarms that have occurred during the entire process

## Operational Range of Set Points and Fields (Fig 5.27)

- Set points and recipe parameters are specific to the customer.
- The following screen shows the range of possible set points

The screenshot displays the 'Recipe Management Screen' for 'ICON<sup>SE</sup>'. The interface includes a sidebar with navigation buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT, RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, LOGIN, and ICON<sup>SE</sup>. The main area shows the following parameters and their ranges:

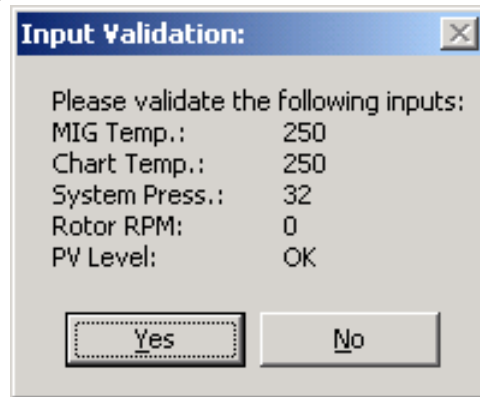
- Product Code:** 32767 (Range: 0 - 32767)
- Revision:** 7 (Range: 0 - 100)
- Container Size:** Ball
- Container Type:** Ballast
- Step Number:** 01 (Range: 01 - 32)
- Step Type:** Heating SV
- Process Vessel Temperature Setpoint:** 0 - 302 °F
- Process Vessel Temperature Gradient:** 0 - 302 °F
- System Pressure Setpoint:** 30.0 PSI (Range: 0 - 60 PSI)
- System Pressure Gradient:** 0.0 PSI
- MISC Time Setpoint:** 0 - 32767 seconds
- MISC Hold:** On or OFF
- Rotor Speed:** 0.0 RPM (Range: 0, 7 - 25 RPM)
- Rotor Position:** Horiz
- Storage Vessel Temperature Setpoint:** 260.0 Deg.F (Range: 0 - 302 °F)
- Programmable Contacts:** 00 - 32
- Source Step:** 1
- Destination Step:** 32

Buttons for 'SELECT', 'DOWNLOAD', 'MOVE', 'COPY', and 'DELETE' are also visible.

Parameter	Description
Process Vessel Temperature Set Point	Temperature the system will achieve during step time
Process Vessel Temperature Gradient	Positive rate of temperature change per minute during the set point time
System Pressure Set Point	Pressure the system will try to achieve and maintain during step time
System Pressure Gradient	Positive rate of Pressure change per minute during the set point time
Step Type	Describes the process step verbally
MISC Time Setpoint	Defines the Step Time
Hold	Used to set a hold at the END of the process step
Programmable Contacts	Used for setting up optional devices, stays active for entire step if activated
Rotor Speed	Speed that will be maintained during step time
Rotor Position	Position of the rotor (A = Horizontal, B and C = custom positions)

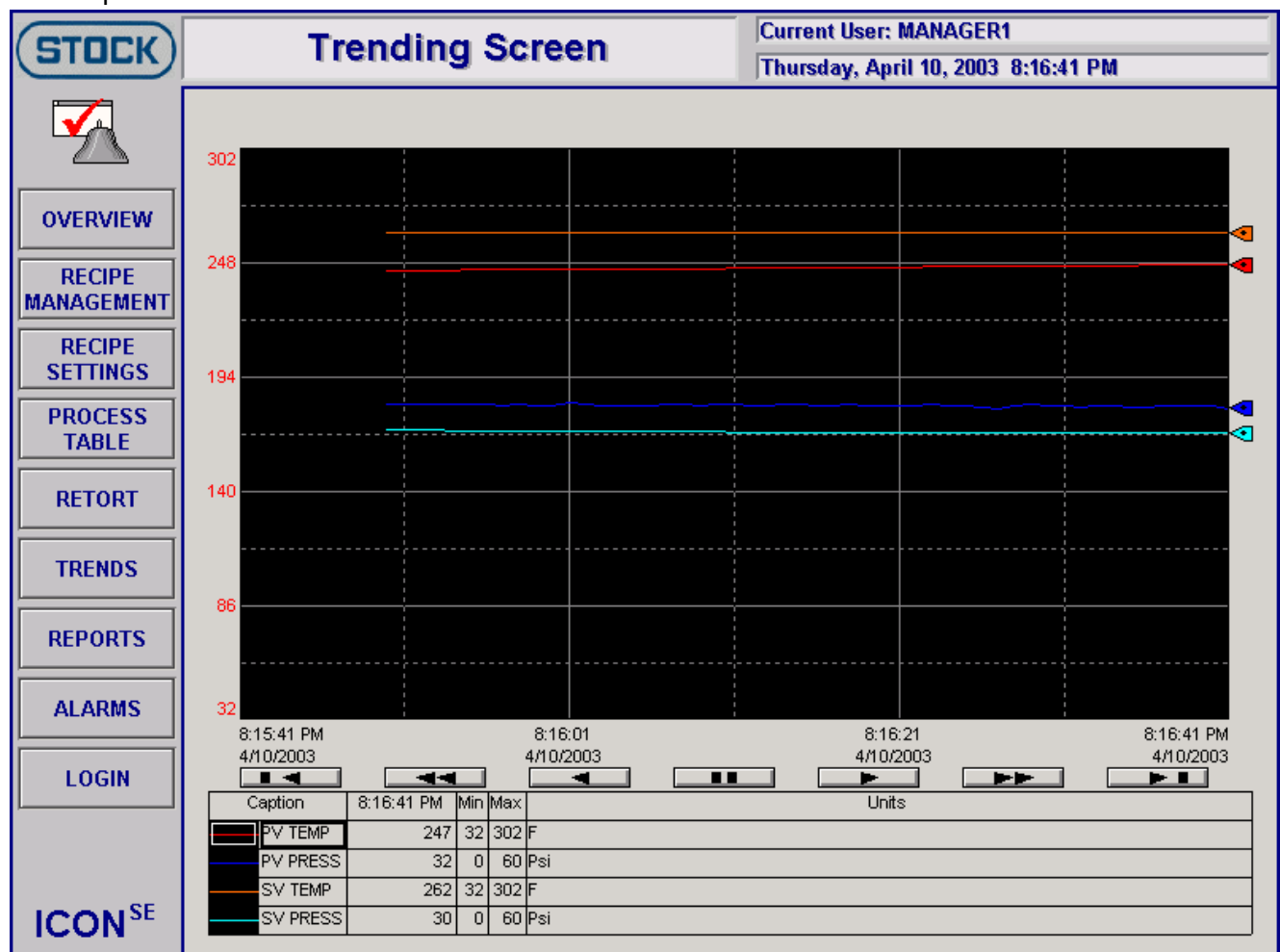
## Input Validation (Fig 5.28)

- User input validation screen allow the operator the chance to recheck readings for MIG, Chart Temp, System Pressure, Rotor RPM and Process Vessel water level. Process deviations may result form faulty readings.



## Trending Screen (Fig 5.29)

- Trending screen show real time data for the Process & Storage Vessel Temperature & Pressure.
- Allow operator to see a graphical representation of the performance of the selected parameters



## SECTION 6 - RECIPE MANAGEMENT

### a. Loading Existing Recipes

#### Step 1 - Select Product Code

- Select the "Select" button on the Recipe Management Screen (Fig 5.5)

The screenshot shows the 'Recipe Management Screen' with a sidebar on the left containing buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT (highlighted), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area has a top header with 'Current User: MANAGER1' and 'Thursday, April 10, 2003 12:10:16 PM'. Below this are input fields for Product Code (0), Revision (0), Product Desc. (0.000000), Container Size (0.000000), and Container Type (0.000000). A 'SELECT' button is next to the Revision field, with a callout pointing to it saying 'Select the "Select" button'. Below these are Step Number (01) and a grid of red buttons. Further down are sections for PROCESS VESSEL (Temperature, Gradient, System Pressure), STORAGE VESSEL (Temperature), and MISC (Time, Hold, Programmable Contacts). At the bottom right is a STEP MANAGEMENT section with Source Step (1), Destination Step (32), and buttons MOVE, COPY, and DELETE.

Fig 6.1

#### Step 2 - Load Product Code

- Select Product Code screen will appear. (Fig 5.7)
  - Select field to select recipe to load before selecting Load button
  - Select Load button – wait until Product Code loads before proceeding

The screenshot shows a 'Select Product Code' dialog box with two columns: Product and Revision. The Product column lists codes: 1234, 995, 32767, 44, 16, 3808, 5678, 666, 2, and 1. The Revision column lists numbers: 29, 8, 7, 4, 3, 1, 1, 1, 1, and 1. A callout box labeled 'FIRST' points to the '32767' product code, stating: 'Select Product Code to be loaded. Example Prod Code 32767 Rev 7 will be loaded'. Another callout box labeled 'SECOND' points to the 'Load' button, stating: 'Select Load Button'. At the bottom are buttons: Load, Add, Print, and Cancel.

Fig 6.2

## Step 3 - Loading Completed

- The Recipe is now Product Code "32767", Revision "7".

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 11:32:56 AM

Product Code:  Revision:  SELECT

Product Desc.:  DOWNLOAD

Container Size:  Product Code

Container:  Revision Number is still "7" because no changes were made to existing product code

Step Number:

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6 STEP 7

Step Type:

**PROCESS VESSEL** **STORAGE VESSEL**

**Temperature:** Setpoint  Deg.F **Rotor:** Speed  RPM **Temperature:** Setpoint  Deg.F

Gradient  Deg.F **Position:**

**System Pressure:** Setpoint  PSI **Gradient:**  PSI

**MISC** **Programmable Contacts:** **STEP MANAGEMENT**

**Time:** Setpoint  ☐ Hold  :  ☐ Contact #1 ☐ Contact #2 ☐ Contact #3 ☐ Contact #4 ☐ Contact #5

**Source Step:**  MOVE

**Destination Step:**  COPY

DELETE

**ICON<sup>SE</sup>**

Fig 6.3

## b. Clearing Displayed Recipe

### General

- Recipes can be cleared from the Recipe Management Screen after being loaded (Fig 5.5)
- Select the Select button

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 12:33:17 PM

Product Code: \* 3 Revision: 0 Select the Select button to call up Select Product Code screen SELECT REGISTER

Product Desc.: 0.000000  
Container Size: 0.000000  
Container Type: 0.000000

Step Number: 01

STEP 1 [Red Bar]

Step Type: Heating SV

**PROCESS VESSEL**

Temperature: Setpoint [ ] Deg.F Gradient [ ] Deg.F Rotor: Speed 0.0 RPM Position [Error]

**STORAGE VESSEL**

Temperature: Setpoint 260.0 Deg.F

**System Pressure:** Setpoint 0.0 PSI Gradient 0.0 PSI

**MISC**

Time: Setpoint [ ] Hold [ ] : [ ]

**Programmable Contacts:**

- ☐ Contact #1
- ☐ Contact #2
- ☐ Contact #3
- ☐ Contact #4
- ☐ Contact #5

**STEP MANAGEMENT**

Source Step: 1 MOVE

Destination Step: 32 COPY

DELETE

**ICON<sup>SE</sup>**

Fig 6.4

- Select the Cancel button on the Select Product Code screen. (Fig 5.8)

Select Product Code :

Product:	Revision:
1234	29
995	2
3808	1
5678	1

Load Add Print Cancel Select Cancel button to remove Product Code from screen

Fig 6.5

## c. Creating a New Recipe & Recipe Parameters

### General

- Creating a blank template

### Step 1 – Add a New Recipe

- Select the Select button on the Recipe Management screen (Fig 5.5)

The screenshot shows the 'Recipe Management Screen' with a sidebar on the left containing buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT (highlighted), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area displays fields for Product Code (0), Revision (0), Product Desc. (0.000000), Container Size (0.000000), and Container Type (0.000000). A 'SELECT' button is in the top right. A callout box points to it with the text: 'Select Select button to call up Select Product Code screen'. Below these fields is a 'Step Number' field set to '01' and a row of red buttons. Further down are sections for 'PROCESS VESSEL' (Temperature, Gradient, System Pressure) and 'STORAGE VESSEL' (Temperature, Setpoint). The 'Error' indicator is visible in the 'Rotor' position field. At the bottom, there are 'MISC' fields (Time, Hold) and 'STEP MANAGEMENT' fields (Source Step: 1, Destination Step: 32) with buttons for MOVE, COPY, and DELETE.

Fig 6.6

- Select Add button on the Select Product Code screen. (Fig.5.8)

The screenshot shows a 'Select Product Code' dialog box with two columns: 'Product' and 'Revision'. The 'Product' column lists 1234, 995, 3808, and 5678. The 'Revision' column lists 29, 2, 1, and 1. At the bottom are buttons for 'Add', 'Print', and 'Cancel'. A callout box points to the 'Add' button with the text: 'Select Button'.

Fig 6.7

## Step 2 - Choosing a Step

1. Select a recipe Step Number field to configure
2. Select Step Type using arrows to toggle through available step descriptions
3. Asterisk ("\*") appears in Product Code field indicating changes have been made that need saving

The screenshot displays the 'Recipe Management Screen' interface. On the left is a vertical menu with buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT (highlighted), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area contains the following elements:

- Header:** 'Current User: MANAGER1' and 'Thursday, April 10, 2003 12:27:58 PM'.
- Product Information:** Product Code (with an asterisk and callout 3), Revision: 0, Product Desc.: 0.000000, Container Size: 0.000000, and Container Type: 0.000000. Buttons for 'SELECT' and 'REGISTER' are on the right.
- Step Selection:** Step Number: 01. Below it is a row of red buttons labeled STEP 1 through STEP 32. Callout 1 points to the STEP 1 button. Callout 2 points to the 'Heating SV' Step Type dropdown. Callout 3 points to the asterisk in the Product Code field.
- Process Vessel Section:** Includes Temperature (Setpoint, Gradient), Rotor (Speed, Position), and System Pressure (Setpoint, Gradient) fields.
- Storage Vessel Section:** Includes Temperature (Setpoint) field.
- Misc Section:** Includes Time (Setpoint, Hold) and Programmable Contacts (Contact #1 to #5) fields.
- Step Management Section:** Includes Source Step (1), Destination Step (32), and buttons for MOVE, COPY, and DELETE.

Fig 6.8

### NOTE

A new "Revision Number" will be automatically added to the "Product Number" and displayed on the "Recipe Management Screen" after the recipe is **REGISTERED** or **UPDATED**.

## Step 3 - Creating New or Changing Set Point Parameters - Begin

- Select recipe parameter to be modified by selecting the field. Example: Storage Vessel Temp.

**STOCK** Recipe Management Screen Current User: MANAGER1  
Thursday, April 10, 2003 12:27:58 PM

Product Code: \* 3 Revision: 0 SELECT

Product Desc.: 0.000000 REGISTER

Container Size: 0.000000

Container Type: 0.000000

Step Number: 01

STEP 1

Step Type: Heating SV

**PROCESS VESSEL**

Temperature: Setpoint Deg.F Gradient Deg.F

Rotor: Speed 0.0 RPM Position Error

**SYSTEM PRESSURE**

Setpoint 0.0 PSI Gradient 0.0 PSI

**MISC**

Time: Setpoint Hold

**PROGRAMMABLE CONTACTS**

Contact #1  
Contact #2  
Contact #3  
Contact #4  
Contact #5

**STORAGE VESSEL**

Temperature: Setpoint 0.0 Deg.F

**STEP MANAGEMENT**

Source Step: 1 MOVE

Destination Step: 32 COPY

DELETE

Touch Storage Vessel Set Point Field

ICON<sup>SE</sup>

Fig 6.10

## Step 4 - Set Point - Input

- "Set point Input" screen will appear. (Fig 5.9)
  - Select the blue field and a numeric Keypad screen will be displayed for data entry.

**Setpoint Input**

Step 01: SV Temperature SP Value

Max: 302.0 Min: 32.0

ACCEPT CANCEL

Touch field to call up keypad

**STOCK**

Fig 6.11

## Step 5 - Set Point – Data Entry

- Enter data on Keypad screen. (Fig. 5.4)
  - To **Update Field** select the button after entries have been made to update recipe changes to the controller display

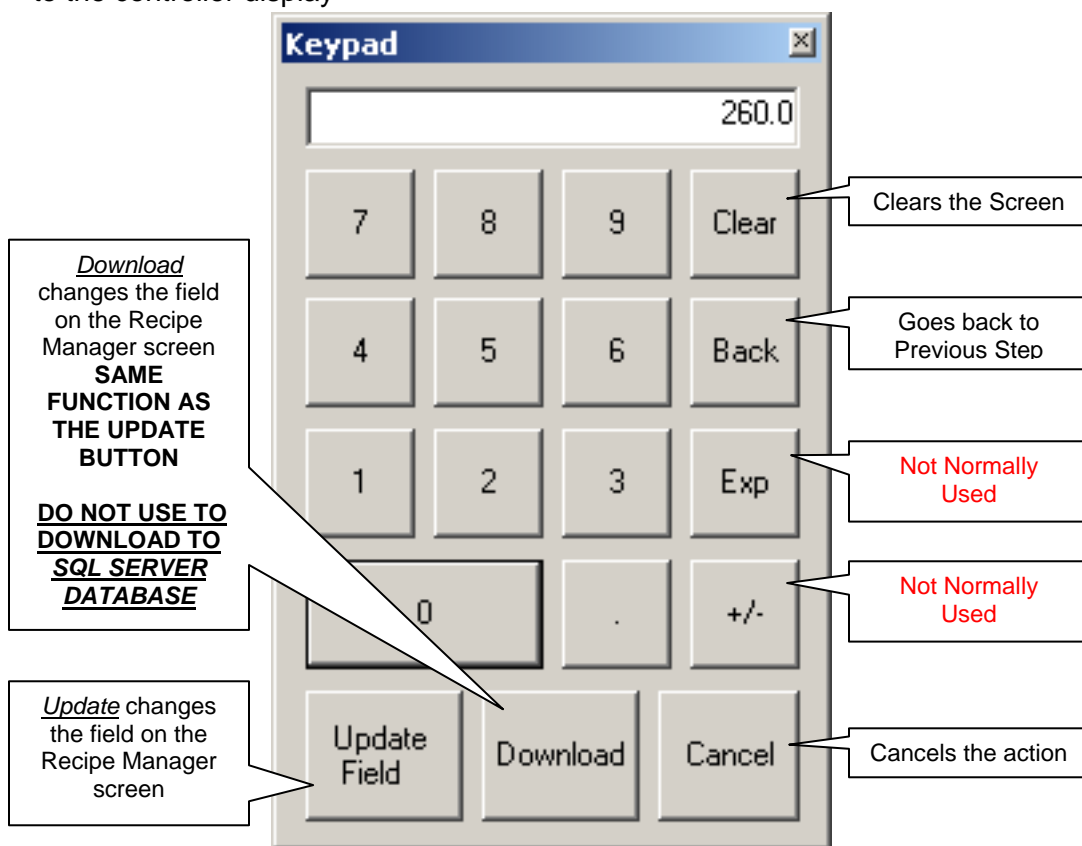


Fig 6.12

## Step 6 - Set Points – Accept or Reject

- Accept or reject entered data by selecting Accept or Cancel buttons

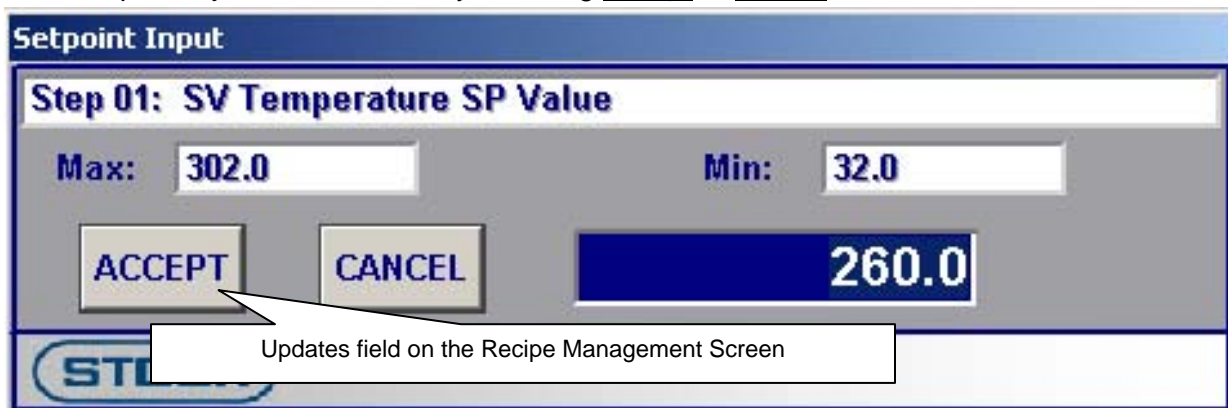


Fig 6.13

## Step 7 - Set Points – Screen Shot Finished Recipe

- Value of  $260^{\circ}\text{F}$  for the Storage Vessel Temperature Set point is now entered for Recipe Step Number 1.

**STOCK** Recipe Management Screen Current User: MANAGER1  
Thursday, April 10, 2003 12:33:17 PM

Product Code:  Revision:  SELECT

Product Desc.:  REGISTER

Container Size:

Container Type:

Step Number:

STEP 1

Step Type:

**PROCESS VESSEL**

Temperature:  Deg.F Rotor:  RPM

Gradient:  Deg.F Position:

**SYSTEM PRESSURE:**

Setpoint:  PSI

Gradient:  PSI

**MISC**

Time:  :

☐ Hold

**PROGRAMMABLE CONTACTS:**

☐ Contact #1

☐ Contact #2

☐ Contact #3

☐ Contact #4

☐ Contact #5

**STORAGE VESSEL** New Value

Temperature:  Deg.F

**STEP MANAGEMENT**

Source Step:  MOVE

Destination Step:  COPY

DELETE

**ICON<sup>SE</sup>**

Fig 6.14

## Step 8 - Step Management

- Used to copy, move or delete. Use to copy or move information from one step to another.
- Copy or Move –
  - Select Source Step field, enter step number on String Input (Fig 5.15)
  - Select Destination Step field desired for the Copied or Moved step to be pasted to.
    - Select Destination Step field, enter step number on String Input
  - Select desired function button.
- Delete –
  - Select Source Step field, enter step number on String Input
  - Select Delete function button.

The screenshot displays the 'Recipe Management Screen' for 'STOCK'. The current user is 'MANAGER1' and the date/time is 'Thursday, April 10, 2003 1:13:54 PM'. The screen is divided into several sections:

- Product Information:** Product Code (3), Revision (1), Product Desc. (Example for Product Registration Confirmation), Container Size (Ballast), and Container Type (Ballast). Buttons for 'SELECT' and 'UPDATE' are present.
- Step Management:** A row of buttons for 'STEP 1' through 'STEP 7'. 'STEP 1' is highlighted in green. Below this is a 'Step Type' dropdown set to 'Heating SV'.
- Process Vessel:** Fields for Temperature (Setpoint, Gradient), Rotor (Speed, Position), and System Pressure (Setpoint, Gradient).
- Storage Vessel:** Fields for Temperature (Setpoint) and Deg.F.
- Misc:** Fields for Time (Setpoint) and a checkbox for 'Hold'.
- STEP MANAGEMENT:** A section with 'Source Step' (01) and 'Destination Step' (32) fields, and buttons for 'MOVE', 'COPY', and 'DELETE'. Callouts indicate 'Touch Field to access' for the step number inputs and 'Touch Button after data is entered to perform function' for the action buttons.

A sidebar on the left contains navigation buttons: OVERVIEW, RECIPE MANAGEMENT (selected), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The 'ICON<sup>SE</sup>' logo is at the bottom left.

Fig 6.9

Field or Button	Function
Move Button	Moves data from <u>Source Step</u> to <u>Destination Step</u>
Copy Button	Copies data from <u>Source Step</u> to <u>Destination Step</u>
Delete Button	Deletes step that is indicated in <u>Source Step</u> box
Source Step	Is the step that is chosen for <u>Moving, Copying or Deleting</u>
Destination Step	Is the step that is chosen for information to be Moved to or Copied to

## Step 9 – Product Registration - SEE SECTION 6(f)

- Repeat data edits for all Steps
- Once the Product Code / Recipe has been completely updated with new information register the recipe.

## d. Creating Recipes from a Template

### General

- New recipes can be **added** using a template from an existing product code (recipe) that has similar operational characteristics

### Step 1 – Load Product Code Template – See Section 6(a)

### Step 2 - New Product Code Designation

- Select the Select button on Recipe Management Screen (Fig 5.5)

The screenshot displays the 'Recipe Management Screen' with a sidebar on the left containing buttons for 'STOCK', 'RECIPE MANAGEMENT', 'RECIPE SETTINGS', 'PROCESS TABLE', 'RETORT', 'TRENDS', 'REPORTS', 'ALARMS', and 'LOGIN'. The main area is titled 'Recipe Management Screen' and shows 'Current User: MANAGER1' and the date/time 'Thursday, April 10, 2003 12:39:48 PM'. It includes fields for 'Product Code: 32767' and 'Revision: 10', with a 'SELECT' button. Below this is a 'Test Recipe Created 02-13-03 by TS' section with 'Ballast' fields and a 'DOWNLOAD' button. A 'Step Number: 01' section shows a sequence of steps from STEP 1 to STEP 7, with STEP 1 highlighted. The 'Step Type' is set to 'Heating SV'. The 'PROCESS VESSEL' section includes 'Temperature' (Setpoint, Gradient), 'Rotor' (Speed, Position), and 'System Pressure' (Setpoint, Gradient) fields. The 'STORAGE VESSEL' section includes 'Temperature' (Setpoint) fields. The 'MISC' section includes 'Time' (Setpoint, Hold) fields. The 'Programmable Contacts' section includes checkboxes for Contact #1 through Contact #5. The 'STEP MANAGEMENT' section includes 'Source Step' (1) and 'Destination Step' (32) fields, with 'MOVE', 'COPY', and 'DELETE' buttons. A callout box points to the 'SELECT' button, stating 'Select to call up Select Product Code screen'. Another callout box points to the 'Product Code' field, stating 'Product Code Loaded for use as a Template'.

Fig 6.15

- Select Product Code screen will appear → Select Add button (Fig 5.8)
- Keypad screen will appear. (Fig 6.12)
  - Enter **NEW** Product Code Number: Select Accept button enters data into Product Code
- Make necessary changes to step parameters, recipe settings, and process tables in the same manner.

### Step 3 – Update & Register Product – See Section 6 (e) (f)

## e. Updating Recipes

### General

- Updating a Product Code after making changes is **CRITICAL** and **MUST BE DONE** after changes have been made to a recipe.
- Failure to Update will result in the changes not being saved to the New Product Code

### Step 1 - Updating of Recipe

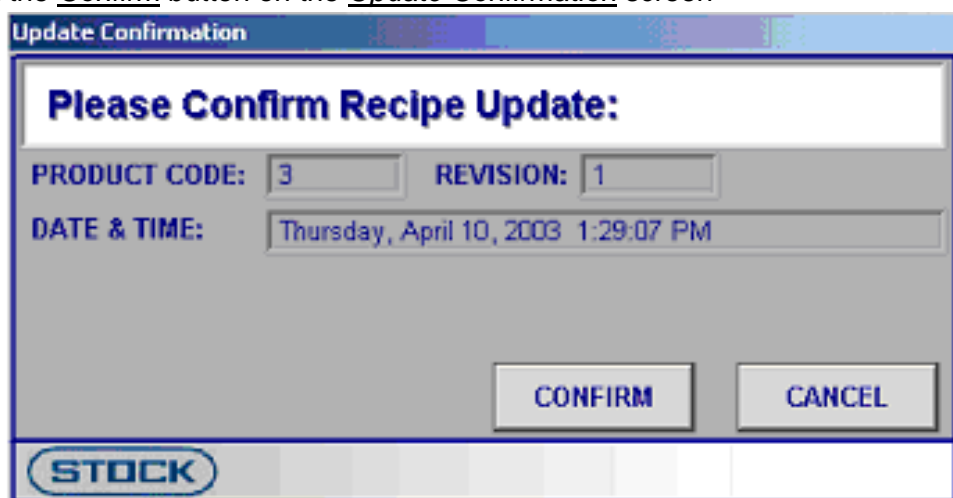
- Update – Select the button on the Recipe Management screen
  - Keyboard - screen will appear - Enter Password and User information (Fig 5.3)

The screenshot displays the 'Recipe Management Screen' with a sidebar on the left containing buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT (highlighted), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area includes a header with 'Current User: MANAGER1' and 'Thursday, April 10, 2003 1:25:03 PM'. Below this, fields for 'Product Code' (3), 'Revision' (1), 'Product Desc.' (Example for Product Registration Confirmation), 'Container Size' (Ballast), and 'Container Type' (Ballast) are shown, with 'SELECT' and 'UPDATE' buttons. A 'Step Number' field is set to '01', followed by a row of step indicators (STEP 1 to STEP 7, then red boxes). The 'Step Type' is 'Heating SV'. The 'PROCESS VESSEL' section includes 'Temperature' (Setpoint, Gradient, Deg.F), 'Rotor' (Speed 0.0 RPM, Position Horiz), and 'System Pressure' (Setpoint 30.0 PSI, Gradient 0.0 PSI). The 'STORAGE VESSEL' section includes 'Temperature' (Setpoint 260.0 Deg.F). The 'MISC' section has 'Time' (Setpoint, Hold) and 'Programmable Contacts' (Contact #1 to #5, with Contact #1 checked). The 'STEP MANAGEMENT' section includes 'Source Step' (01), 'Destination Step' (32), and 'MOVE', 'COPY', and 'DELETE' buttons. A callout box points to the 'UPDATE' button with the text 'Select button'.

FIG 6.16

## Step 2 – Confirmation of Update

- Select the Confirm button on the Update Confirmation screen



**Update Confirmation**

**Please Confirm Recipe Update:**

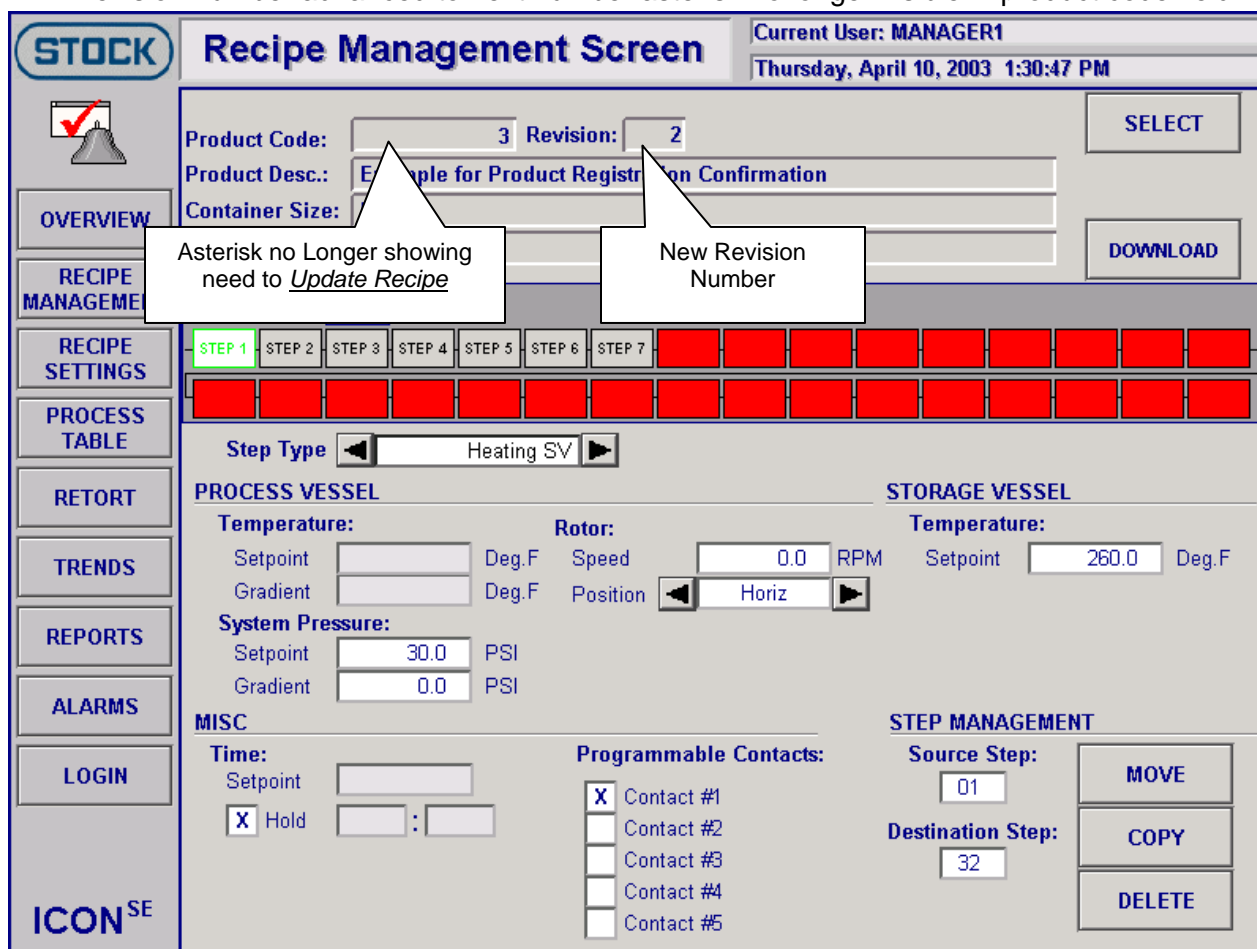
PRODUCT CODE:  REVISION:

DATE & TIME:

Fig 6.17

## Step 3 – Finished Update

- Update completed
- Revision number advanced to next number asterisk no longer visible in product code field



**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:30:47 PM

Product Code:  Revision:

Product Desc.:

Container Size:

**OVERVIEW** **RECIPE MANAGEMENT** **RECIPE SETTINGS** **PROCESS TABLE** **RETORT** **TRENDS** **REPORTS** **ALARMS** **LOGIN**

**STEP 1** **STEP 2** **STEP 3** **STEP 4** **STEP 5** **STEP 6** **STEP 7** **STEP 8** **STEP 9** **STEP 10** **STEP 11** **STEP 12** **STEP 13** **STEP 14** **STEP 15** **STEP 16** **STEP 17** **STEP 18** **STEP 19** **STEP 20**

**Step Type**  Heating SV

**PROCESS VESSEL** **STORAGE VESSEL**

**Temperature:** Setpoint  Deg.F **Rotor:** Speed  RPM **Temperature:** Setpoint  Deg.F

Gradient  Deg.F **Position**  Horiz

**System Pressure:** Setpoint  PSI **Gradient**  PSI

**MISC** **Programmable Contacts:** **STEP MANAGEMENT**

**Time:** Setpoint  ☒ Hold  :

☒ Contact #1 ☐ Contact #2 ☐ Contact #3 ☐ Contact #4 ☐ Contact #5

**Source Step:**   **Destination Step:**

**ICON<sup>SE</sup>**

Fig 6.18

## f. Registering Recipes

### General

- Registration of a new *Product code* is required after a new Recipe/Product code is completed
- The registration process places the New number in the SQL Server Database for future use

### Step 1 - Registration of Recipe

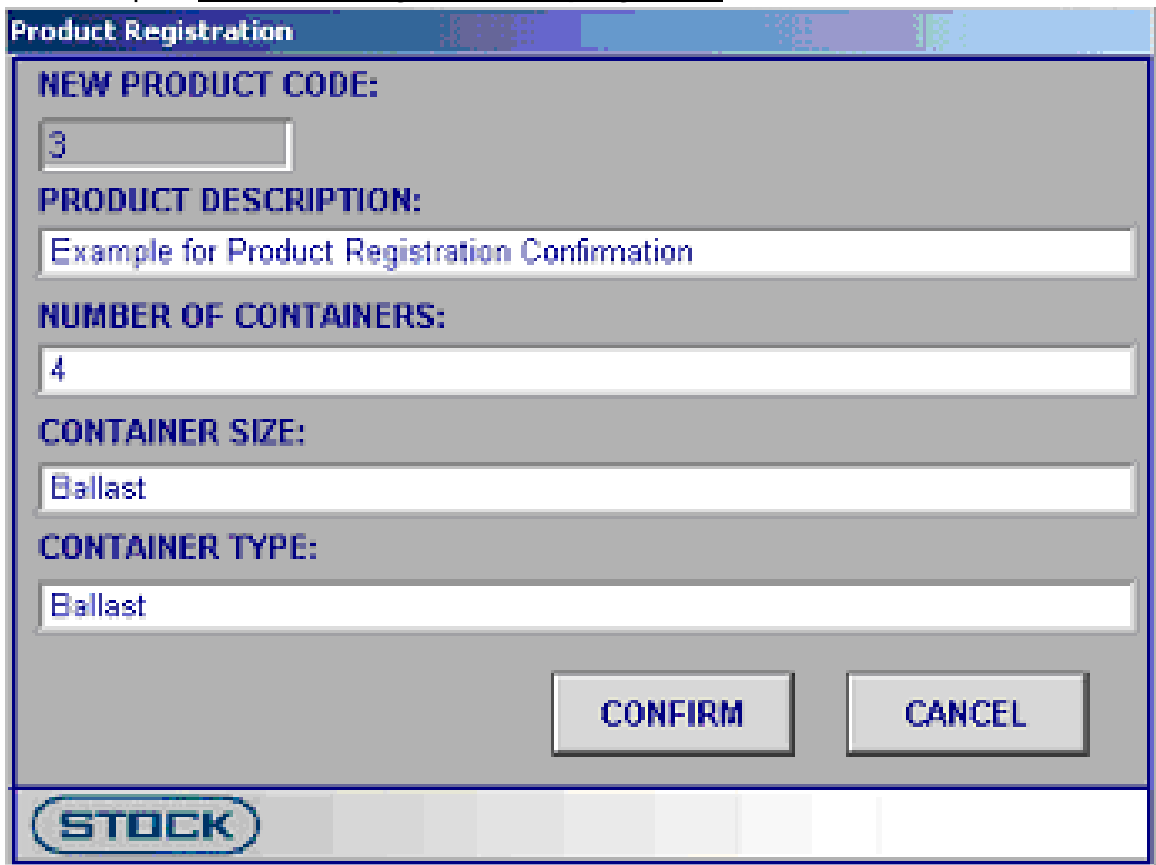
- Select *Registration* button
- *Login* screen will appear, select a text field
- *Keyboard* screen will appear - Enter Password and User information (Fig 5.3)

The screenshot displays the 'Recipe Management Screen' with a sidebar on the left containing buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT, RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, LOGIN, and ICON<sup>SE</sup>. The main area includes a header with 'Current User: MANAGER1' and 'Thursday, April 10, 2003 12:33:17 PM'. Below the header, there are input fields for 'Product Code' (with a red star icon and value '3'), 'Revision' (value '0'), 'Product Desc.' (value '0.000000'), 'Container Size' (value '0.000000'), and 'Container Type' (value '0.000000'). A 'SELECT' button is next to the Product Code field, and a 'REGISTER' button is to the right. A callout box points to the 'REGISTER' button with the text: 'Select button to save New recipe number to the database'. Below these fields is a 'Step Number' field with the value '01'. A row of red buttons follows, with the first one labeled 'STEP 1'. Below this is a 'Step Type' dropdown menu showing 'Heating SV'. The screen is divided into three main sections: 'PROCESS VESSEL', 'STORAGE VESSEL', and 'STEP MANAGEMENT'. The 'PROCESS VESSEL' section includes 'Temperature' (Setpoint and Gradient in Deg.F), 'Rotor' (Speed in RPM and Position, with a red 'Error' indicator), and 'System Pressure' (Setpoint and Gradient in PSI). The 'STORAGE VESSEL' section includes 'Temperature' (Setpoint in Deg.F) with a callout box pointing to it saying 'New Value'. The 'STEP MANAGEMENT' section includes 'Source Step' (value '1') and 'Destination Step' (value '32'), with buttons for 'MOVE', 'COPY', and 'DELETE'. A 'MISC' section at the bottom left includes 'Time' (Setpoint and Hold) and 'Programmable Contacts' (Contact #1 through #5).

Fig 6.19

## Step 2 - Registration Confirmation

- Registration Confirmation - Fill out information necessary to identify the New Product Code
  - Select Confirm button
  - Prompt to **Please wait registration in progress...**



The image shows a 'Product Registration' dialog box with a blue title bar. It contains several input fields and two buttons. The fields are labeled as follows:

- NEW PRODUCT CODE:** A text box containing the number '3'.
- PRODUCT DESCRIPTION:** A text box containing the text 'Example for Product Registration Confirmation'.
- NUMBER OF CONTAINERS:** A text box containing the number '4'.
- CONTAINER SIZE:** A text box containing the text 'Ballast'.
- CONTAINER TYPE:** A text box containing the text 'Ballast'.

At the bottom right of the dialog are two buttons: 'CONFIRM' and 'CANCEL'. At the bottom left, there is a 'STOCK' button with a circular icon.

Fig 6.20

## g. Downloading Recipes

### General

- The Downloading function places the Product Code in the HOST PC for use
- Retort will run the last Product Code downloaded

### Step 1 - Downloading

- Select the Download button on the Recipe Management Screen
- Keyboard - screen will appear - Enter Password and User information (Fig5.3)

The screenshot shows the 'Recipe Management Screen' with a sidebar on the left containing buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT, RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, LOGIN, and ICON<sup>SE</sup>. The main area displays recipe details: Product Code (32767), Revision (7), Product Desc. (Test Recipe Created 02:13:03 by TS), Container Size (Ballast), and Container Type (Ballast). A 'SELECT' button is next to the Product Code. Below this is a 'Step Number' field set to 01, followed by a row of step indicators (STEP 1 to STEP 7, with STEP 1 highlighted in green). A 'Step Type' dropdown is set to 'Heating SV'. The 'PROCESS VESSEL' section includes Temperature (Setpoint, Gradient), System Pressure (Setpoint, Gradient), and Rotor (Speed, Position). The 'STORAGE VESSEL' section includes Temperature (Setpoint). The 'MISC' section includes Time (Setpoint, Hold) and Programmable Contacts (Contact #1 to #5). The 'STEP MANAGEMENT' section includes Source Step (1), Destination Step (32), and buttons for MOVE, COPY, and DELETE. A 'DOWNLOAD' button is located on the right side of the screen, with a callout 'Select button' pointing to it. Another callout 'New Value' points to the 'Setpoint' field in the 'STORAGE VESSEL' section, which contains the value 260.0.

Fig 6.21

### Step 2 – Download Confirmation

- Download Confirmation screen will appear, fill in text as needed to identify
- Confirm – Select the button on the Download Confirmation screen
  - Prompt to Please wait download in progress...

The screenshot shows the 'Download Confirmation' dialog box. It has a title bar 'Download Confirmation' and a main heading 'Please Confirm Recipe Download:'. Below this are fields for PRODUCT CODE (32767), REVISION (7), DATE & TIME (Thursday, April 10, 2003 11:42:43 AM), and COMMENTS (download shot for user manual). There are 'CONFIRM' and 'CANCEL' buttons at the bottom. A callout 'Touch field to input text' points to the COMMENTS field. Another callout 'Select button' points to the 'CONFIRM' button.

Fig 6.22

## SECTION 7 - ICON<sup>SE</sup> MODIFY PROCESS STEPS

### a. Example Full Water Immersion Step Modification

#### Step 1 - Heating Storage Vessel (HSV) - Completed

- Enter Recipe Parameters and Recipe Steps for each Step Number of the Product Code using the procedure outlined in **Section 6(b)**.

The screenshot displays the 'Recipe Management Screen' for 'Current User: MANAGER1' on 'Thursday, April 10, 2003 1:13:54 PM'. The interface includes a left sidebar with navigation buttons: STOCK, OVERVIEW, RECIPE MANAGEMENT (selected), RECIPE SETTINGS, PROCESS TABLE, RETORT, TRENDS, REPORTS, ALARMS, and LOGIN. The main area shows product details: Product Code (3), Revision (1), Product Desc. (Example for Product Registration Confirmation), Container Size (Ballast), and Container Type (Ballast). Below this, the 'Step Number' is set to 01. A table of steps is visible, with Step 1 highlighted. The 'Step Type' is 'Heating SV'. The 'PROCESS VESSEL' section includes Temperature (Setpoint, Gradient), Rotor (Speed, Position), and System Pressure (Setpoint, Gradient). The 'STORAGE VESSEL' section includes Temperature (Setpoint, Gradient). The 'MISC' section includes Time (Setpoint) and a 'Hold' checkbox. The 'STEP MANAGEMENT' section includes Source Step (01), Destination Step (32), and buttons for MOVE, COPY, and DELETE. Callouts identify various fields: 'Step Number' points to the step number field; 'Step Description' points to the step description field; 'New Value' points to the Storage Vessel Temperature Setpoint; 'Position of Cages' points to the Rotor Position field; 'System Pressure Set point / Gradient' points to the System Pressure Setpoint field; and 'Hold set for end step. See "Note" below' points to the Hold checkbox.

Fig 7.1

NOTE	
It is recommended that a <b>"Hold"</b> be placed in the last "Heating Storage Vessel (HSV)" step.	
If the recipe will require the operator to enter <b>"Initial Temperature" (I.T.)</b> it is <b>not recommended</b> that a <b>"Hold"</b> be included at the end of the last HSV step. Refer to "Recipe Settings" section for information on the "Recipe Settings" page.	

## Step 2 - Sterilization 1 (S1) - Completed

- Retort Vent step - used to remove air and fill the retort to the desired level.
- Example of data needed for a typical Sterilization 1 step.
- To enter Recipe Parameters and Recipe Steps see Section 5b
  1. Select Step Number – Choose step to modify
  2. Select Step Type field – Choose desired description from list
  3. Select Speed – Set RPM (Usually 0 in S1)
  4. Select Rotor Position – Choose desired position from list (depends upon container)
  5. Select System Pressure Setpoint – 0 to 60 PSI
  6. Select System Pressure Gradient – Increase over the duration of the step
  7. Select Time Setpoint – This is the duration of the step expressed in **seconds**

**STOCK** Recipe Management Screen Current User: MANAGER1  
Thursday, April 10, 2003 1:15:23 PM

Product Code: \* 3 Revision: 1 SELECT  
Product Desc.: Example for Product Registration Confirmation UPDATE  
Container Size: Ballast  
Container Type: Ballast

Step Number: 02

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6 STEP 7

Step Type: Sterilization 1

**PROCESS VESSEL**

Temperature: Setpoint 0.0 Deg.F Rotor: Speed 0.0 RPM  
Gradient 0.0 Deg.F Position 'B'

**STORAGE VESSEL**

Temperature: Setpoint Deg.F

**System Pressure:**

Setpoint 30.0 PSI  
Gradient 0.0 PSI

**MISC**

Time: Setpoint 90  
Hold 1 : 30

**Programmable Contacts:**

Contact #1  
Contact #2  
Contact #3  
Contact #4  
Contact #5

**STEP MANAGEMENT**

Source Step: 01  
Destination Step: 32

MOVE  
COPY  
DELETE

OVERVIEW  
RECIPE MANAGEMENT  
RECIPE SETTINGS  
PROCESS TABLE  
RETORT  
TRENDS  
REPORT  
ALARM  
LOGIN  
ICON<sup>SE</sup>

Fig 7.2

Completed Sterilization 1 Step

## Step 3 - Sterilization 2 (S2) - Completed

- Defined as Retort Come Up Time
- Data needed for a typical Sterilization 2 (Retort Come-Up Time) step.
  1. Select Step Number – Choose step to modify
  2. Select Step Type field – Choose desired description from list
  3. Select Speed – Set RPM
  4. Select Rotor Position – Choose desired position from list
  5. Select Temperature Set Point – Set point for Processing Temperature or overshoot temperature during Come Up.
  6. Select Temperature Gradient – Increase in temperature per minute during the step
  7. Select System Pressure Setpoint – 0 to 60 PSI
  8. Select System Pressure Gradient – Increase in PSI per minute during the step
  9. Select Time Setpoint – This is the duration of the step expressed in seconds

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:16:57 PM

Product Code: \* 3 Revision: 1 SELECT

Product Desc.: Example for Product Registration Confirmation UPDATE

Container Size: Ballast

Container Type: Ballast

Step Number: 03

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6 STEP 7

Step Type: Sterilization 2

**PROCESS VESSEL**

Temperature: Setpoint 250.0 Deg.F Gradient 0.0 Deg.F

System Pressure: Setpoint 30.0 PSI Gradient 0.0 PSI

**STORAGE VESSEL**

Temperature: Setpoint Deg.F

Rotor: Speed 0.0 RPM Position 'C'

**MISC**

Time: Setpoint 480 Hold 8 : 00

**Programmable Contacts:**

☐ Contact #1  
☐ Contact #2  
☐ Contact #3  
☐ Contact #4  
☐ Contact #5

**STEP MANAGEMENT**

Source Step: 01 MOVE

Destination Step: 32 COPY

DELETE

**ICON<sup>SE</sup>**

Fig 7.3

Completed Sterilization 2 (S2) Step

## Step 4 - Sterilization 3 (S3) - Completed

- Defined as Cook Phase of operation
- Modify the Following Control Points as per previous step.
- Data needed for a typical Sterilization 3 (Cook) step.
  1. Select Step Number – Choose step to modify
  2. Select Step Type Field – Choose desired description from list
  3. Select Speed – Set RPM
  4. Select Rotor Position – Choose desired position from list
  5. Select Temperature Set Point – Set point for Processing Temperature.
  6. Select Temperature Gradient – Increase in temperature per minute during the step
  7. Select System Pressure Set point – 0 to 60 PSI
  8. Select System Pressure Gradient – Increase in PSI per minute during the step
  9. Select Time Set point – This is the duration of the step expressed in seconds

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:17:36 PM

Product Code: \* 3 Revision: 1 SELECT

Product Desc.: Example for Product Registration Confirmation UPDATE

Container Size: Ballast

Container Type: Ballast

Step Number: 04

STEP 1 STEP 2 STEP 3 **STEP 4** STEP 6 STEP 7

Step Type: Sterilization 3

**PROCESS VESSEL**

Temperature: Setpoint 250.0 Deg.F Gradient 0.0 Deg.F

System Pressure: Setpoint 30.0 PSI Gradient 0.0 PSI

**STORAGE VESSEL**

Temperature: Setpoint Deg.F

Rotor: Speed 14.0 RPM Position Horiz

**MISC**

Time: Setpoint 360 Hold 6 : 00

**Programmable Contacts:**

☐ Contact #1  
☐ Contact #2  
☐ Contact #3  
☐ Contact #4  
☐ Contact #5

**STEP MANAGEMENT**

Source Step: 01 MOVE

Destination Step: 32 COPY

DELETE

**ICON<sup>SE</sup>**

Fig 7.4

Completed Sterilization 3 (S3) Step

## Step 5 - Cooling 1 (C1) - Completed

- Defined as the phase of cooling use to recover some of the processing water to the Storage Vessel and the initial cooling phase.
- Not a timed phase
- Data needed for a typical Cool 1 (Cooling) step.
  1. Select Step Number – Choose step to modify
  2. Select Step Type Field – Choose desired description from list
  3. Select Speed – Set RPM
  4. Select Rotor Position – Choose desired position from list
  5. Select System Pressure Set Point – 0 to 60 PSI
  6. Select System Pressure Gradient – Increase or decrease in PSI during the step

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:21:21 PM

Product Code:  Revision:  SELECT  
 Product Desc.:  UPDATE  
 Container Size:   
 Container Type:

Step Number:

STEP 1 STEP 2 STEP 3 STEP 4 **STEP 5** STEP 6 STEP 7 STEP 8 STEP 9 STEP 10 STEP 11 STEP 12 STEP 13 STEP 14 STEP 15 STEP 16 STEP 17 STEP 18 STEP 19 STEP 20

Step Type:

**PROCESS VESSEL** **STORAGE VESSEL**

Temperature:  Deg.F **Rotor:**  RPM  Deg.F  
 Gradient:  Deg.F **Position:**

**System Pressure:**  PSI  PSI

**MISC** **STEP MANAGEMENT**

Time:  ☐ Hold  :  **Programmable Contacts:** ☐ Contact #1 ☐ Contact #2 ☐ Contact #3 ☐ Contact #4 ☐ Contact #5

Source Step:  MOVE  
 Destination Step:  COPY  
DELETE

**ICON<sup>SE</sup>**

Fig 7.5

Completed Cooling 1 (C1) Step

## Step 6 - Cooling 2 (C2) - Completed

- Defined as the final cooling phase pressure is usually ramped down in this phase as temperature is decreased.
- This phase is based on time as well as end temperature
- Data needed for a typical Cool2 (Cooling) step.
  1. Select Step Number – Choose step to modify
  2. Select Step Type Field – Choose desired description from list
  3. Select Speed – Set RPM
  4. Select Rotor Position – Choose desired position from list
  5. Select Temperature Set Point – Used to define the temperature at which the retort will go to drain phase.
  6. Select System Pressure Setpoint – 0 to 60 PSI
  7. Select Time Set point – This is the duration of the step expressed in seconds

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:21:57 PM

Product Code: \* 3 Revision: 1 SELECT  
 Product Desc.: Example for Product Registration Confirmation UPDATE  
 Container Size: Ballast  
 Container Type: Ballast

Step Number: 06

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 **STEP 6** STEP 7

Step Type: Cooling 2

**PROCESS VESSEL** **STORAGE VESSEL**

Temperature: Setpoint 100.0 Deg.F Rotor: Speed 0.0 RPM Temperature: Setpoint 0.0 Deg.F  
 Gradient 0.0 Deg.F Position: 'B'

System Pressure: Setpoint 26.0 PSI  
 Gradient 0.0 PSI

**MISC** **Programmable Contacts:** **STEP MANAGEMENT**

Time: Setpoint 180  
☐ Hold 3 : 00

Contact #1  
 Contact #2  
 Contact #3  
 Contact #4  
 Contact #5

Source Step: 01  
 Destination Step: 32

MOVE  
COPY  
DELETE

**ICON<sup>SE</sup>**

Fig 7.6

Completed Cooling 2 (C2) Step

## Step 7 – Drain - Completed

- Defined as the emptying of water from the retort
- Phase duration is based on time
- Data needed for a typical Cool2 (Cooling) step.
  1. Select Step Number – Choose step to modify
  2. Select Step Type Field – Choose desired description from list
  3. Select Speed – Set RPM - Usually to Zero (0)
  4. Select Rotor Position – Choose desired position from list
  5. Select Time Set point – This is the duration of the step expressed in seconds
  6. Select Storage Vessel Set point – This is the temperature the Storage Vessel will preheat to in Drain step

**STOCK** **Recipe Management Screen** Current User: MANAGER1  
Thursday, April 10, 2003 1:22:20 PM

Product Code: \* 3 Revision: 1 SELECT  
 Product Desc.: Example for Product Registration Confirmation UPDATE  
 Container Size: Ballast  
 Container Type: Ballast

Step Number: 07

STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6 **STEP 7** STEP 8 STEP 9 STEP 10 STEP 11 STEP 12 STEP 13 STEP 14 STEP 15 STEP 16 STEP 17 STEP 18 STEP 19 STEP 20

Step Type: Drain

**PROCESS VESSEL**

Temperature: Setpoint \_\_\_\_\_ Deg.F Gradient \_\_\_\_\_ Deg.F  
 Rotor: Speed 0.0 RPM Position Horiz

**STORAGE VESSEL**

Temperature: Setpoint 220.0 Deg.F

**System Pressure:**  
 Setpoint 24.0 PSI  
 Gradient 0.0 PSI

**MISC**

Time: Setpoint 180  
☐ Hold 3 : 00

**Programmable Contacts:**  
☐ Contact #1  
☐ Contact #2  
☐ Contact #3  
☐ Contact #4  
☐ Contact #5

**STEP MANAGEMENT**

Source Step: 01 MOVE  
 Destination Step: 32 COPY  
DELETE

**ICON<sup>SE</sup>**

Fig 7.7

Completed Drain Step

## Step 8 - Process Table Modification – Completed

- Tables are modified with the data supplied by a **Process Authority**
- All entries are made by selecting the corresponding field and manually entering Using Keypad.
- **DO NOT CHANGE TABLES WITHOUT THE AUTHORIZATION OF STOCK America Inc. or Process Authority.**

### Custom Table Settings

Current User: MANAGER1

Thursday, April 10, 2003 1:23:06 PM

OVERVIEW

RECIPE  
MANAGEMENT

RECIPE  
SETTINGS

PROCESS  
TABLE

RETORT

TRENDS

REPORTS

ALARMS

LOGIN

ICON<sup>SE</sup>

### Custom Process Table

Process Vessel Temperature										
I.T.	246.0	248.0	250.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45.0	420	390	360	0	0	0	0	0	0	0
50.0	380	365	340	0	0	0	0	0	0	0
55.0	330	325	320	0	0	0	0	0	0	0
0.0	0	0	0	0	0	0	0	0	0	0
0.0	0	0	0	0	0	0	0	0	0	0

Note: Times are entered in Seconds.

Fig 7.8

**Step 9 - Update Recipe - See Section 6(e) for procedure**

**Step 10 - Register Recipe - See Section 6(f) for procedure**

## SECTION 8 - RUNNING A PROCESS

### a. General

- See START UP & LOGIN PROCEDURE – See SECTION 3 – Login as operator or manager

### b. Example Full Water Immersion Process

- This is an example of a process that assumes there is a recipe loaded and ready to run. See Section 6(b) to Load a recipe.
- The Retort Screen is used throughout the operation of a normal process run.

Color Key	Function
Red	Indicates that the item is not active or on
Green	Indicates that the item is active or on
Yellow	Water Level

### Starting the Process

- STEP1 - Go to the “RETORT” screen and Select the “START” button.

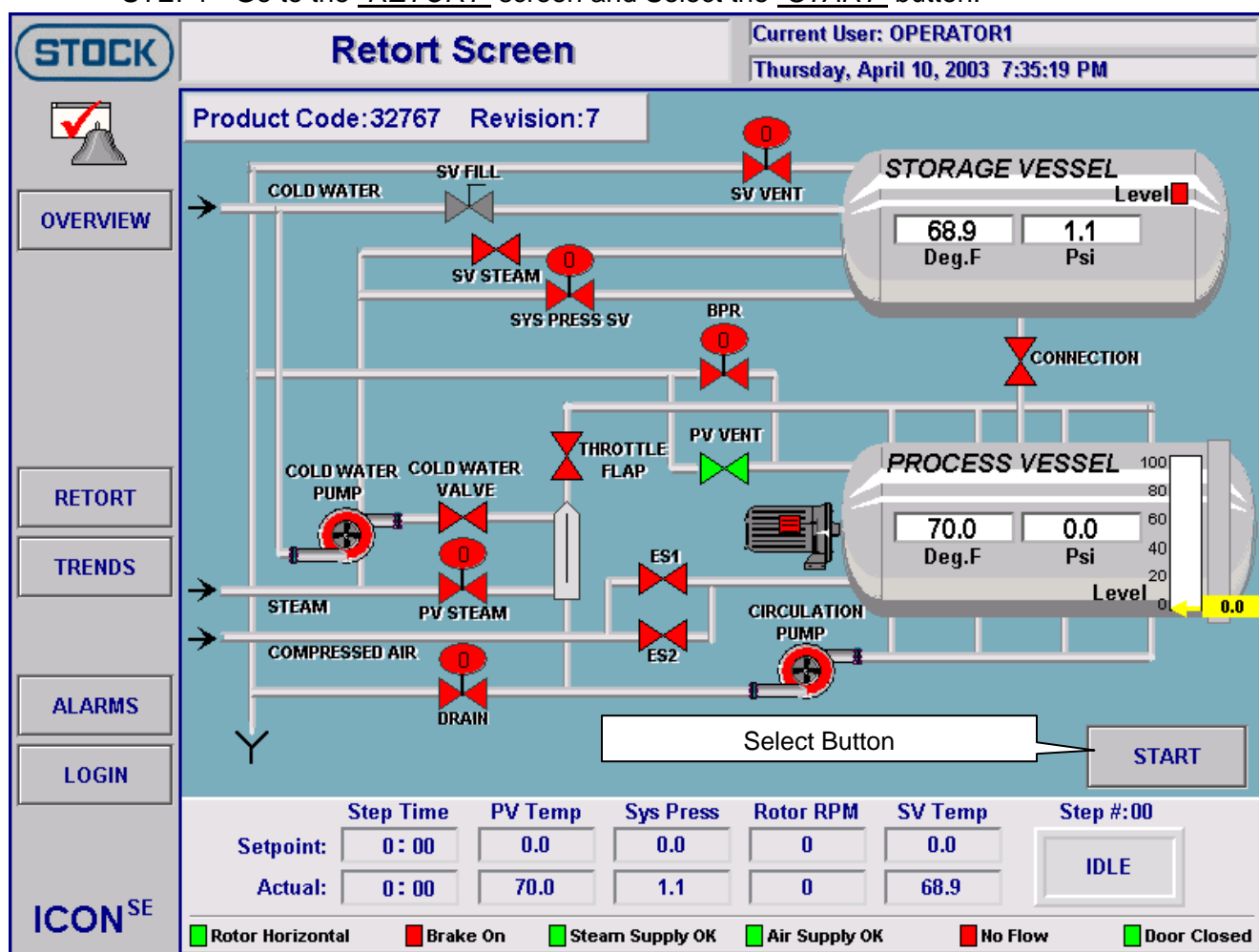


Fig 8.1

**NOTE:** Product Number will not change on screen until Start button is selected

- STEP 2 – User Name and Password are required
- STEP 3 – Enter the cook number by use of key pad screen. (Fig 5.4)
  - Enter a Cook Number (valid range is 1 through 32767).
- STEP 4 – Select the “YES” button to confirm starting the cook.

**Start Confirmation**

**Start of Cook:**

PRODUCT CODE: 995 REVISION: 9

DATE & TIME: Sunday, April 13, 2003 1:02:22 PM

COOK NUMBER:

YES NO

STOCK

Fig 8.2

NOTE	
It is the responsibility of the operator to verify that the <b>Product Code entered corresponds to the Product being processed</b>	
Cook number = Maximum of 5 digits long should always be assigned.	
Product Code and Revision Number will update once the <u>Start</u> button is selected	

## Heating Storage Vessel (HSV) $\leq 212$ Deg F - No Pressure Control

- HSV Step in progress, Storage Vessel (**SV**) temperature  $\leq 212$  Deg F
- No Storage Vessel Pressure control is used in this step, **SV** vent valve is 100% open
- Analog valves and level indicators indicate the % open on the display
- Digital Valves and motors are on or off

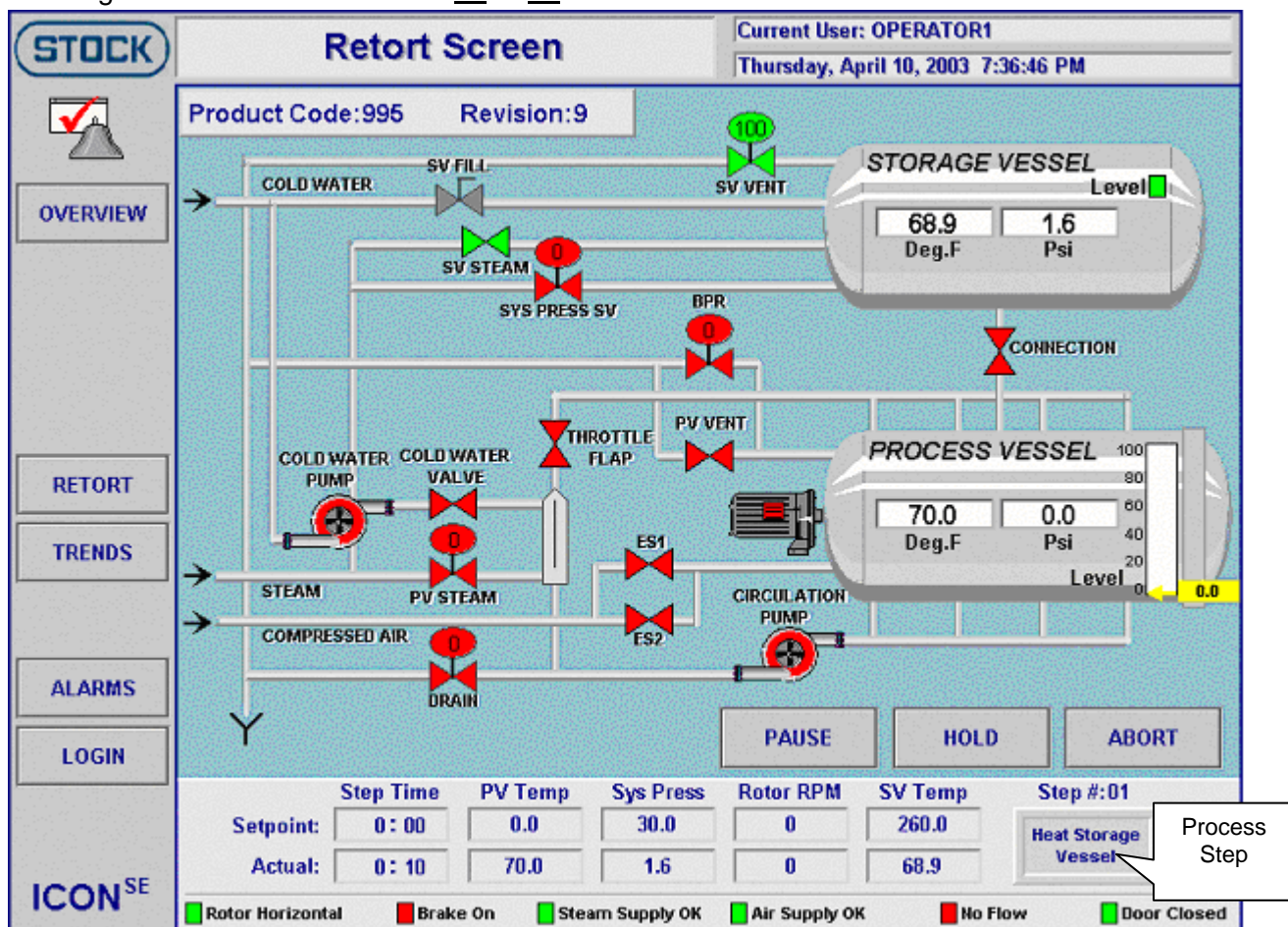


Fig 8.3

Button	Function
PAUSE	Stops the process and puts valves and pumps in off position. Stops accumulated time
HOLD	Keeps process in current step in definitely
ABORT	Stops process completely

Screen Display for HSV	Description	Status
SV STEAM	Digital - Steam to preheat Storage Vessel	Icon is green (on)
SV VENT	Analog - Storage Vessel Vent	Shows actual % open
STORAGE VESSEL Level	Digital - Water Level Sensor	Sensor is green (on)
STORAGE VESSEL Fill Valve	Manual - Fills SV with Cold Water	-
PROCESS VESSEL Level	Analog - Water Level Sensor	Shows actual %
Rotor Horizontal	Rotor is in horizontal position	Sensor is green (on)
Steam Supply OK	Steam supply is adequate	Sensor is green (on)
Air Supply OK	Air is adequate	Sensor is green (on)
Door OK	Door safety switch is engaged	Sensor is green (on)
Set Points & Actual	Shown for Time , Pressure and Temperature	-

## Heating Storage Vessel (HSV) $\geq 212$ Deg F – Pressure Control

- HSV Step in progress, Storage vessel  $\geq 212$  Deg F
- Storage Vessel is pressure controlled in this portion of HSV

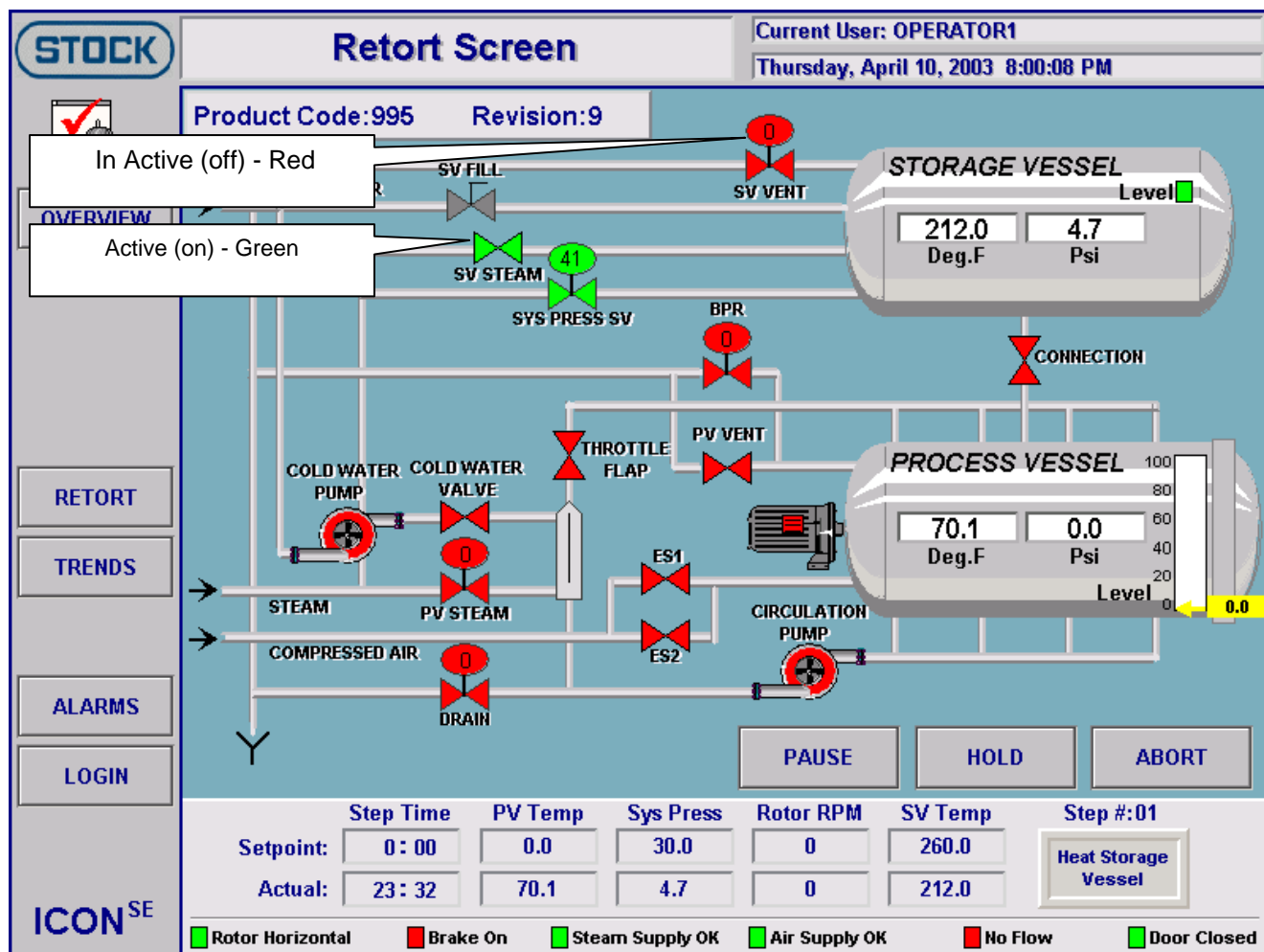


Fig 8.4

Display for HSV Pressure Control	Description	Status
SV STEAM	Digital - Steam to preheat Storage Vessel	Icon is green (on)
SYS PRESS	System Pressure Regulation Valve	Shows % open
STORAGE VESSEL Level	Digital - Water Level Sensor	Sensor is green (on)
Rotor Horizontal	Digital - Rotor is in horizontal position	Sensor is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Sensor is green (on)
Air Supply OK	Digital - Air is adequate	Sensor is green (on)
Door OK	Digital - Door safety switch is engaged	Sensor is green (on)
Set Points & Actual	Shown for Time , Pressure and Temperature	-

## Heating Storage Vessel End - Prompt for IT

- If entry of an Initial Temperature is set in Recipe Settings, a button will appear on MAIN MENU for entering the INITIAL TEMP value before process can begin.
- STEP1 - Select the INITIAL TEMP button.

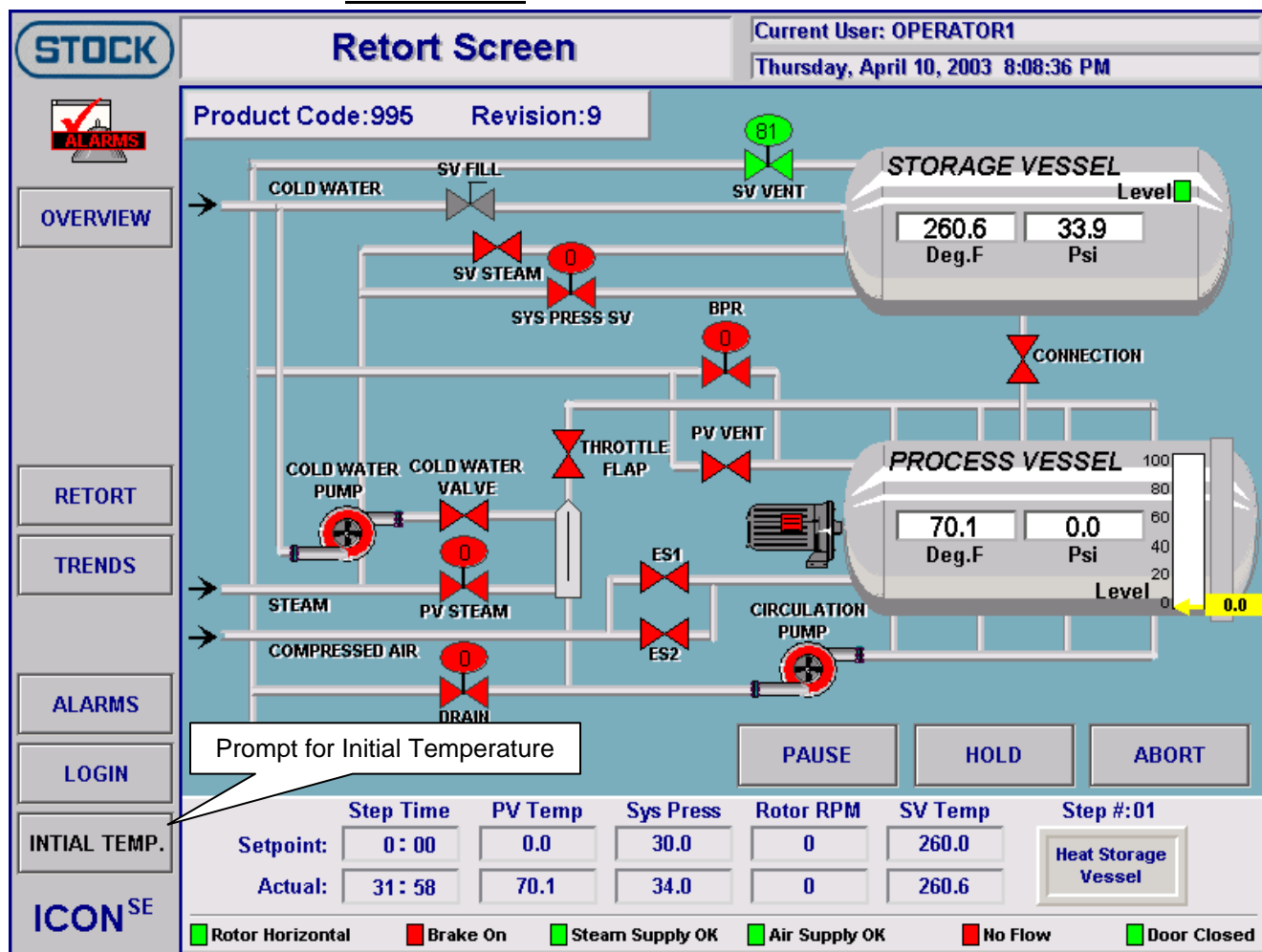


Fig 8.5

- STEP – 2 Operator will be prompted for user name and password, enter on Keyboard (Fig 5.2)
- STEP – 3 Enter the product Initial Temperature on keypad and Select enter (Fig 5.3)
- STEP – 4 Select YES button on IT Confirmation to accept the entry. (Fig. 5.18)

The 'IT Confirmation' dialog box prompts the user to enter the initial temperature. It displays the following information:

- PRODUCT CODE:** 995
- REVISION:** 9
- DATE & TIME:** Friday, February 14, 2003 10:41:49 AM
- INITIAL TEMP.:** 45.0

At the bottom, there are 'YES' and 'NO' buttons. The 'STOCK' button is visible at the very bottom of the screen.

(Fig 8.6)

## Sterilization 1 - In Progress

- Process is now in operation and the retort is in Vent.

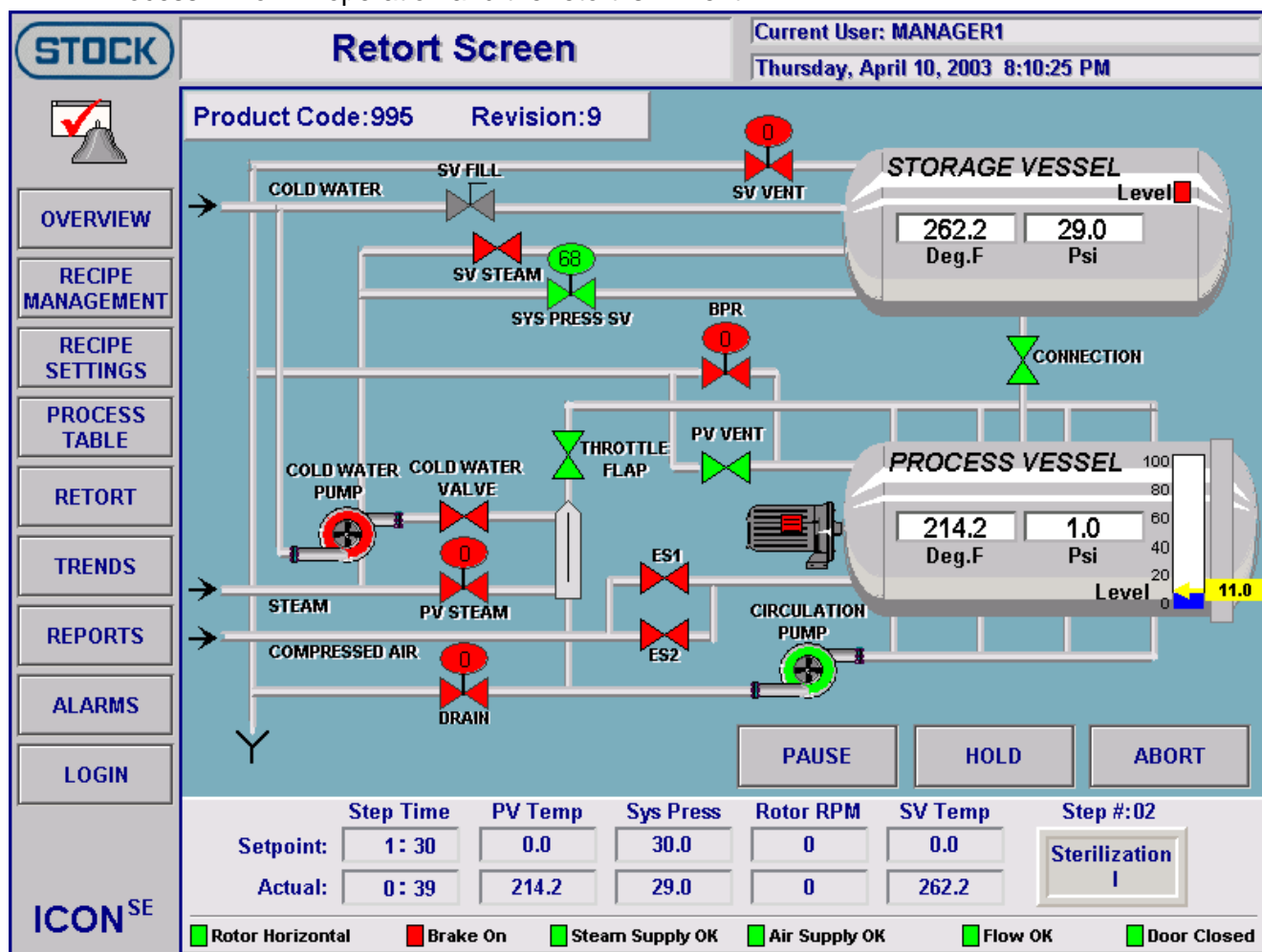


Fig 8.6

Display for Sterilization I	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
PV Vent	Digital - Process Vessel Vent	Icon is green (on)
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Connection	Digital - Connector Valve	Icon is green (on)
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Level	Water Level	Shows % open
Rotor "B" Position	Digital - Rotor is in custom location "B"	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Sterilization I	Current step is Sterilization 1 (Vent)	-
Set Points & Actual	Shown for Time , Pressure and Temperature	Current status

## Sterilization 2 - In Progress

- Sterilization 2 is used to bring the Process Vessel up to set point temperature, pressure and rotation.

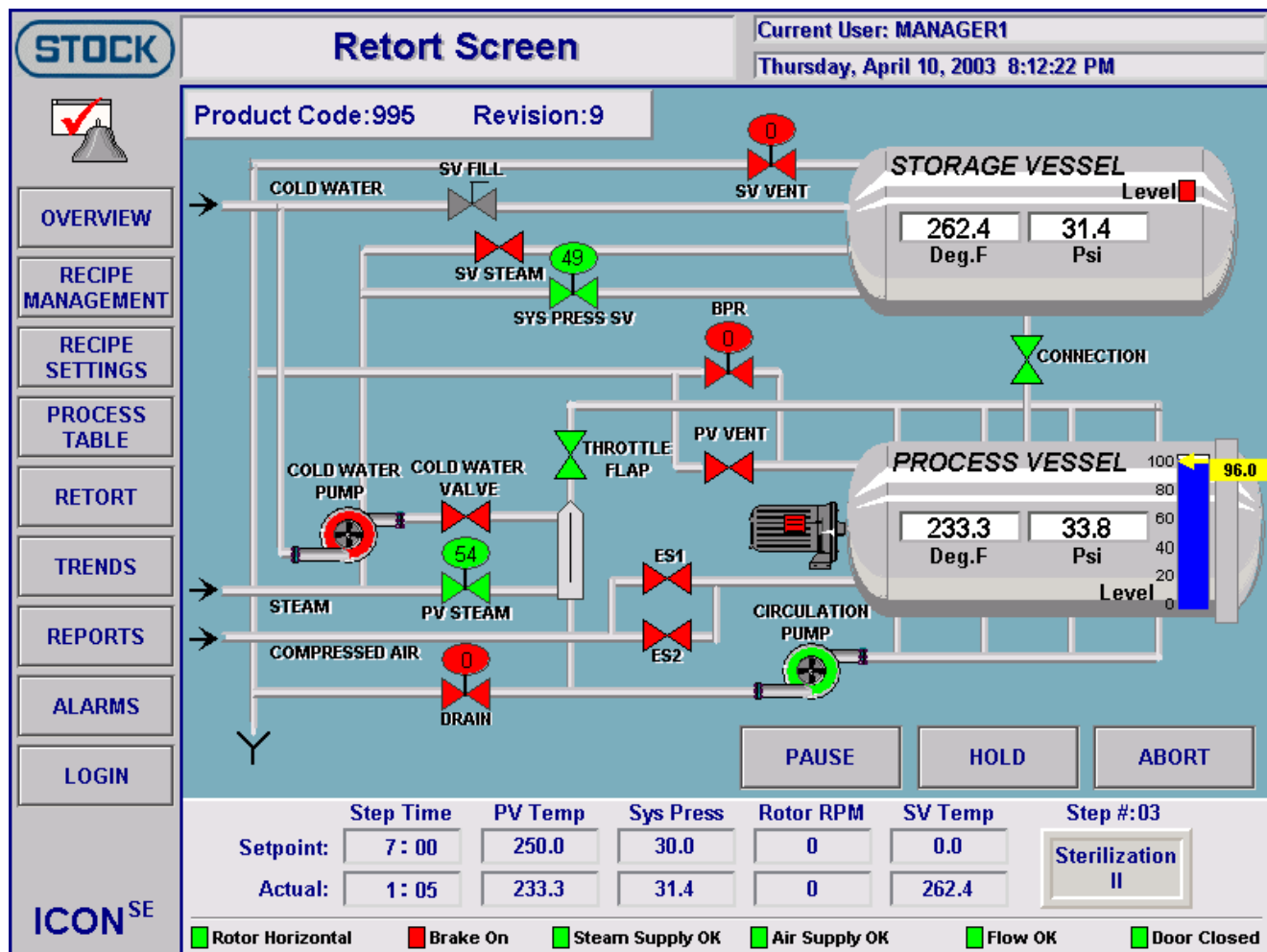


Fig 8.8

Display for SII	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
Process Vessel Steam	Analog - Process Vessel Heating Valve is on	Shows % open
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Connection	Digital - Connector Valve	Icon is green (on)
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Level	Water Level	Shows % open
Rotor Horizontal	Digital - Rotor is in horizontal	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Sterilization II	Current step is Sterilization II (Come Up)	-
Set Points & Actual	Shown for Time , Pressure and Temperature	Current status

## Sterilization 3 - In Progress

- Process is now in cook phase and the retort is at process temperature.
- During S3, if User Inputs are required, a button will appear to enter the inputs. (Fig 5.24)
- Press the USER INPUT button.

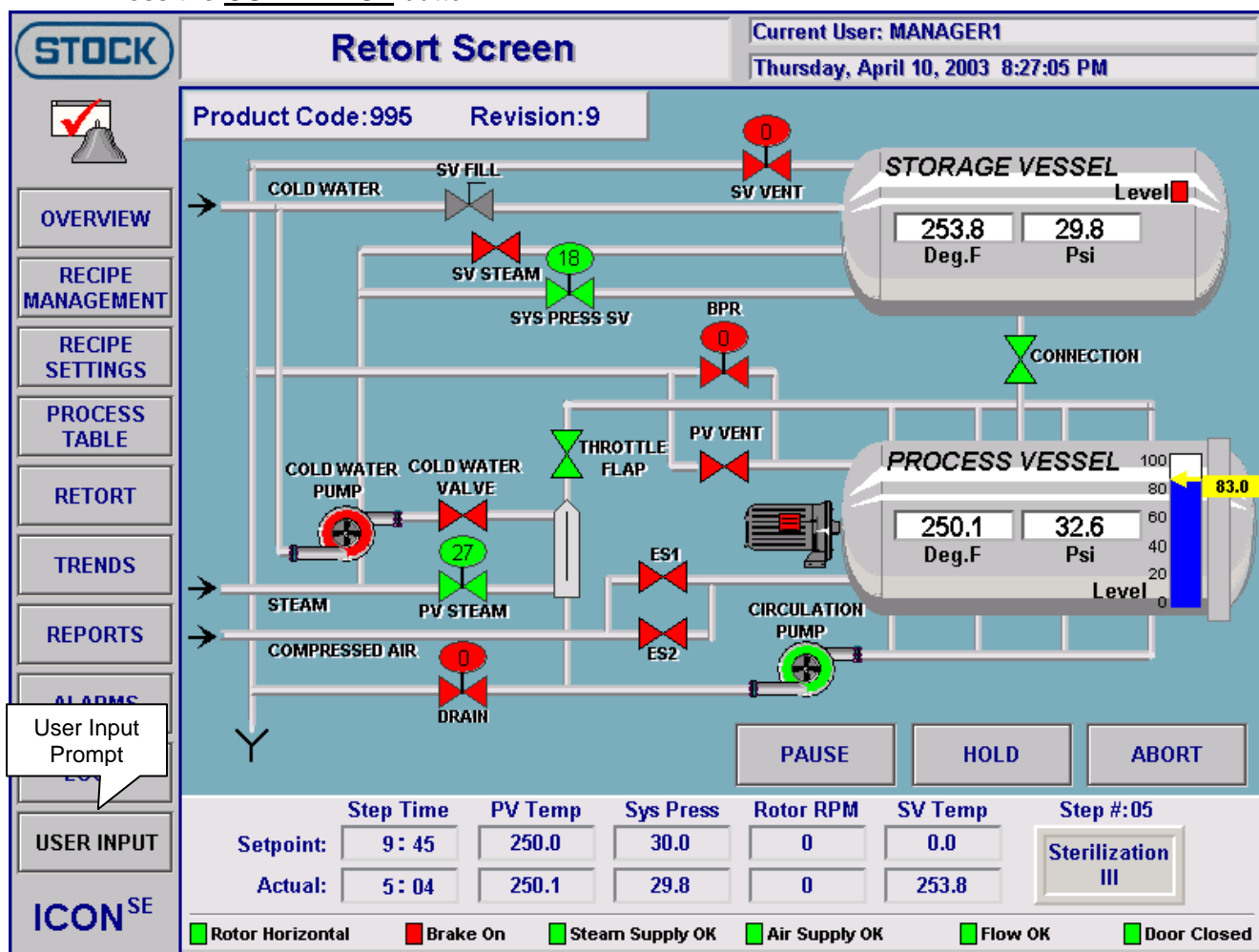
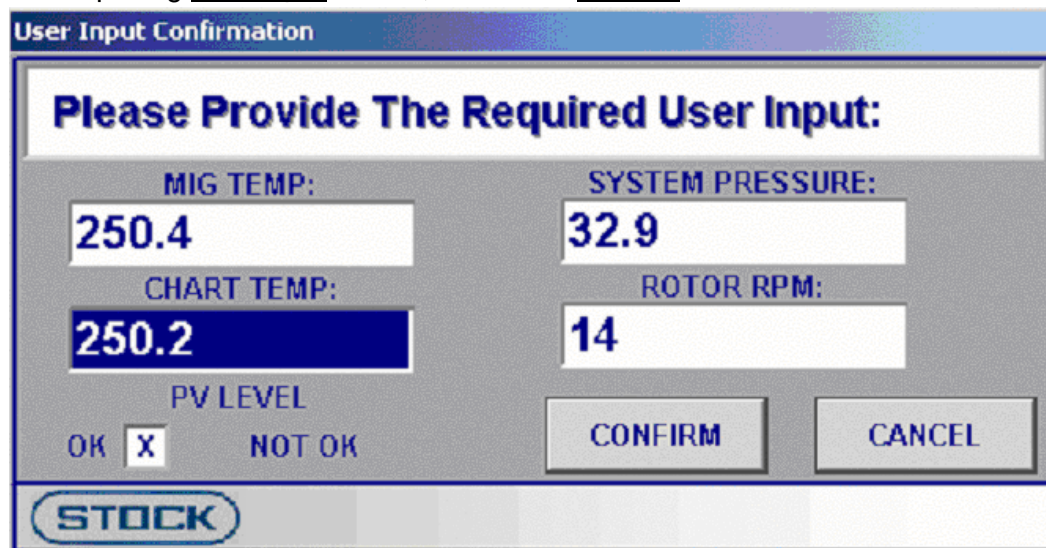


Fig 8.9

Display for SIII	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
Process Vessel Steam	Analog - Process Vessel Heating Valve is on	Shows % open
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Connection	Digital - Connector Valve	Icon is green (on)
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Process Vessel Level	Analog - Water Level in Process Vessel	Shows % open
Rotor "B" Position	Digital - Rotor is in custom location "B"	Icon is green (on)
Brake off	Rotor motor brake is off and motor is on	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Sterilization III	Current step is Sterilization III (Cook)	-
Set Points & Actual	Shown for Time , Pressure and Temperature	Current status

## Sterilization 3 - In Progress – User Inputs

- User Input Confirmation will appear. (Fig 5.24)
- User Name and Password are required.
- After completing User Input entries, Select the Confirm button.

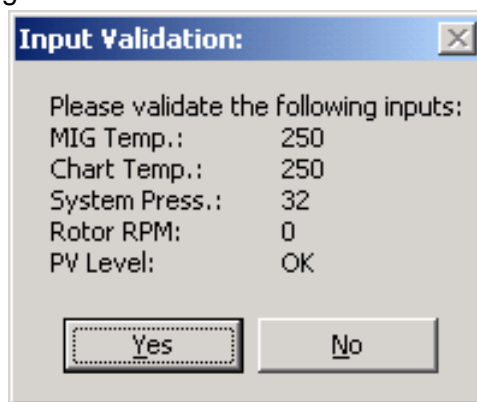


The dialog box is titled "User Input Confirmation". It contains a header "Please Provide The Required User Input:". Below this, there are four input fields: "MIG TEMP:" with value "250.4", "SYSTEM PRESSURE:" with value "32.9", "CHART TEMP:" with value "250.2", and "ROTOR RPM:" with value "14". At the bottom left, there is a "PV LEVEL" section with "OK" and "NOT OK" options, where "X" is selected under "OK". To the right of this are "CONFIRM" and "CANCEL" buttons. At the very bottom, there is a "STOCK" button.

Fig 8.10

Button	Function
Confirm	Allows data to be entered into the recipe
Cancel	Exits Screen

- Input Validation screen will appear after completing User Input entries, if entries are correct. Select the Yes button. Fig 5.28



The dialog box is titled "Input Validation:". It contains the text "Please validate the following inputs:". Below this, there is a list of inputs and their values: "MIG Temp.: 250", "Chart Temp.: 250", "System Press.: 32", "Rotor RPM: 0", and "PV Level: OK". At the bottom, there are "Yes" and "No" buttons.

### LOW INITIAL TEMPERATURE or RETORT TEMPERATURE

If I.T. or R.T. information for a particular retort batch is below the minimum tolerances provided in the table, or the temperatures for the MIG are LOWER than the temperature for the Chart, the ICON<sup>SE</sup> Retort PC will activate an alarm. At the end of the run the corresponding alarm message documenting the deviation will be noted on the Sterilization Record. Consult with your process authority for a proper procedure to use in the event of a low R.T. or low I.T. deviation.

## Cool 1 - In Progress

- Used to recover hot water to the Storage Vessel.
- System Pressure is controlled in the Storage Vessel.
- Valve changes and pump output changes will be noted on the screen.

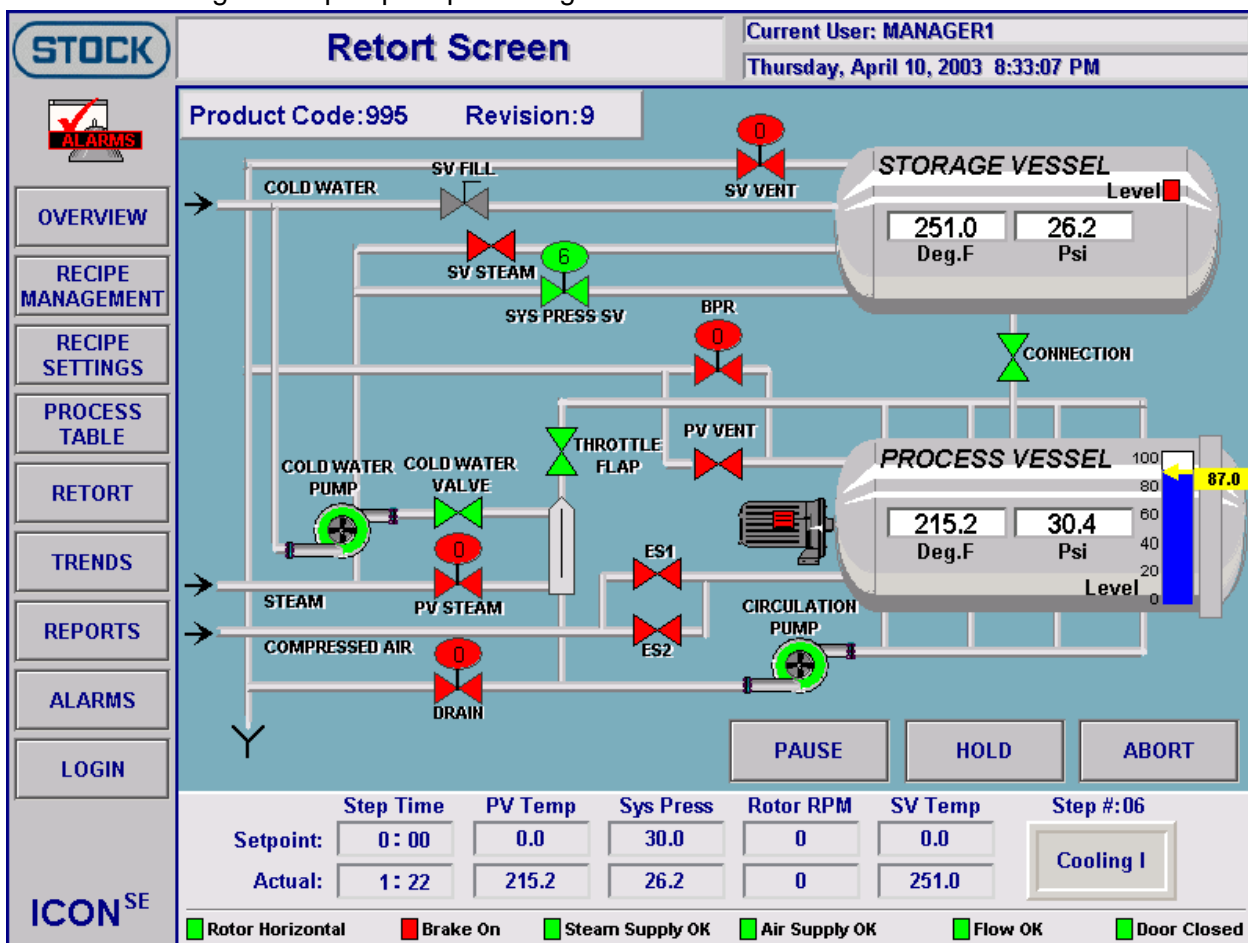


Fig 8.11

Display for Cool I	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
SV Vent	Analog - Storage Vessel Pressure Vent	Shows % open
Cold Water Valve	Digital - Cold Water Supply Valve	Icon is green (on)
Cold Water Pump	Digital - Cold water booster pump	Icon is green (on)
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Connection	Digital - Connector between Storage & Process Vessel	Icon is green (on)
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Process Vessel Level	Analog - Water Level in Process Vessel	Shows % open
Rotor "B" Position	Digital - Rotor is in custom location "B"	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Cool 1	Current step is Cool1 – Recover process water to storage vessel	-
Set Points & Actual	Shown for Time , Pressure and Temperature	

## Cool 2 - In Progress

- Storage Vessel is full and now water diverts to drain
- Connection valve closes and valve outputs change.
- Other operational changes will be noted.

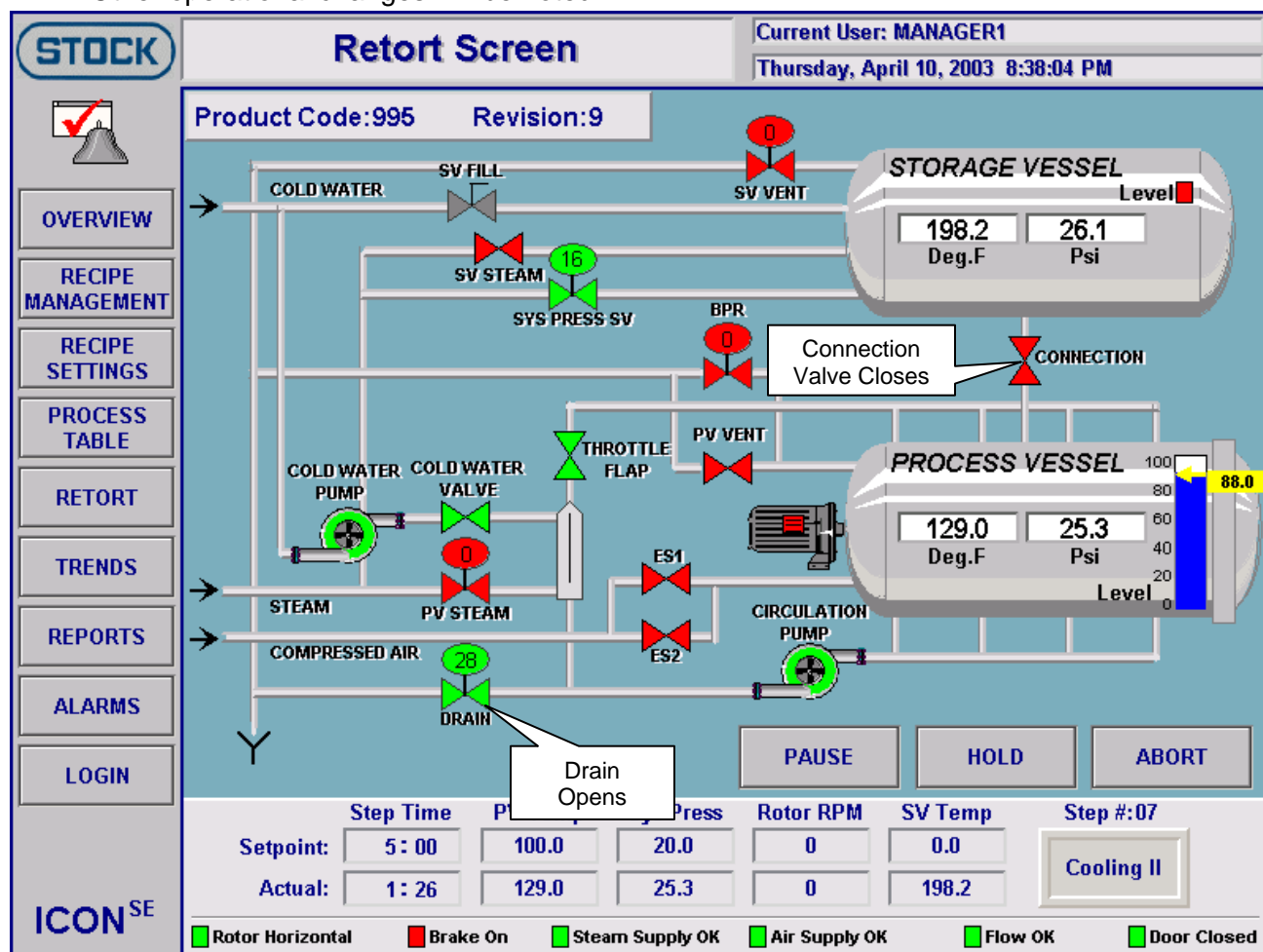


Fig 8.12

Display for Cool II	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
Storage Vessel Level	Water level in the storage vessel	Icon is green (on) Full
Cold Water Valve	Digital - Cold Water Supply Valve	Icon is green (on)
Cold Water Pump	Digital - Cold water booster pump	Icon is green (on)
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Drain	Analog - Drain Valve	Icon is green (on)
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Process Vessel Level	Analog - Water Level in Process Vessel	Shows % open
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Cool II	Current step is Cool II	-
Set Points & Actual	Shown for Time , Pressure and Temperature	

## Drain - In Progress

- Cooling is completed; the retort has reached the setpoint temperature.
- Drain opens and Storage Vessel begins heating
- Valves change to off and pump outputs change.

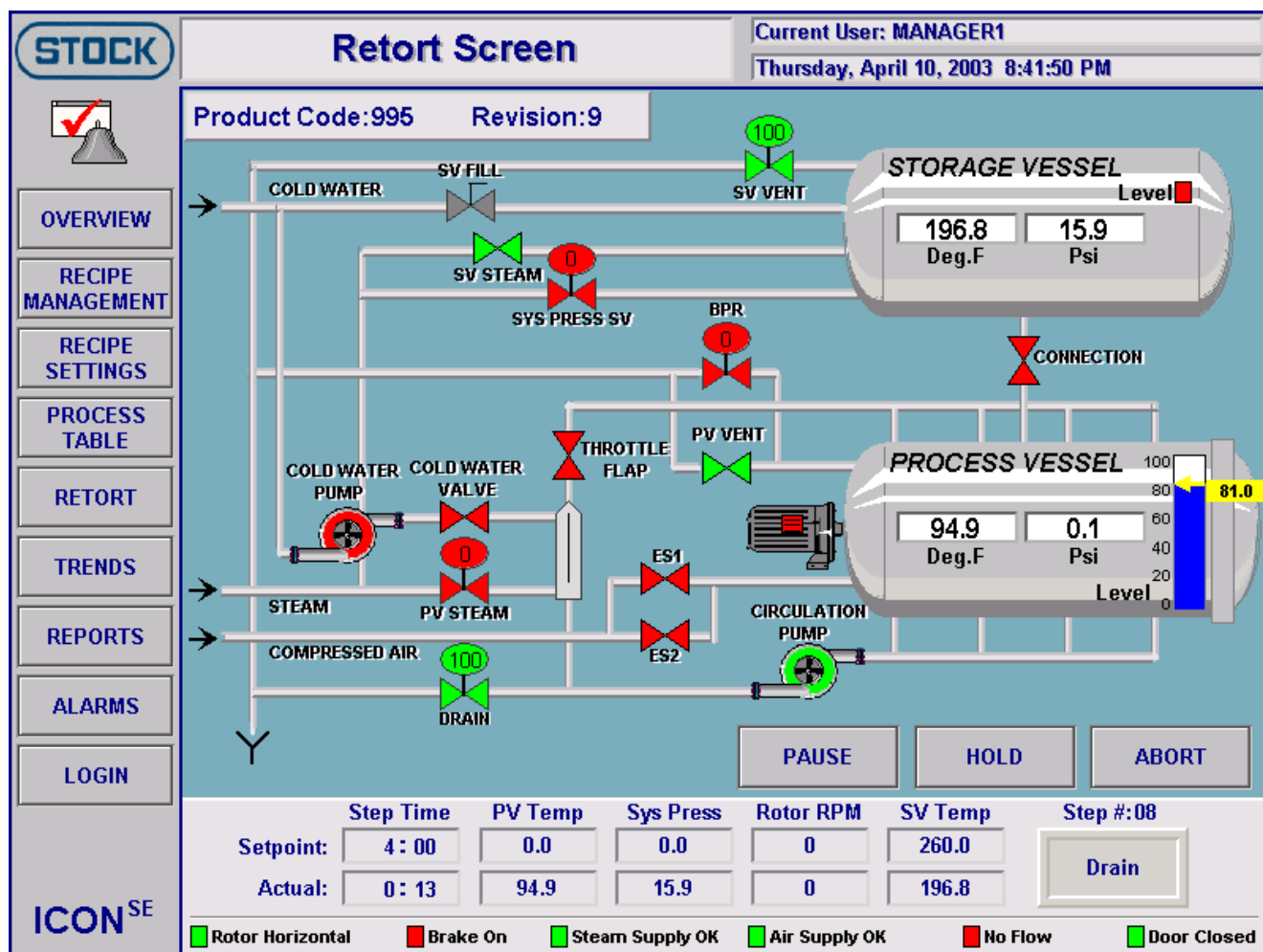


Fig 8.13

Display for Drain	Description	Status
SYS Press SV	Analog - System pressure Valve Storage Vessel	Shows % open
Storage Vessel Level	Digital - Water level in the storage vessel	Icon is green (on) Full
PV Vent	Digital - Process Vessel Vent	Icon is green (on)
Drain	Analog - Drain Valve	Shows % open
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Process Vessel Level	Analog - Water Level in Process Vessel	Shows % open
Rotor Horizontal	Digital - Rotor is in horizontal Unload position	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Drain	Current step is Drain	-
Set Points & Actual	Shown for Time , Pressure and Temperature	

## Process Pause - In Progress

- Pausing the process stops the cook in the current step, turning off all control output devices and stopping the accumulated step time.
- Valve & Pump outputs change to off.
- Storage Vessel vent modulates to maintain pressure control
- When the process is in *PAUSE*, you can go forward or backward step-by-step in the process using the *Previous Step* or *Next Step* buttons.
- Select *Remove Pause* button to start process again. Prompt for user name and password will appear

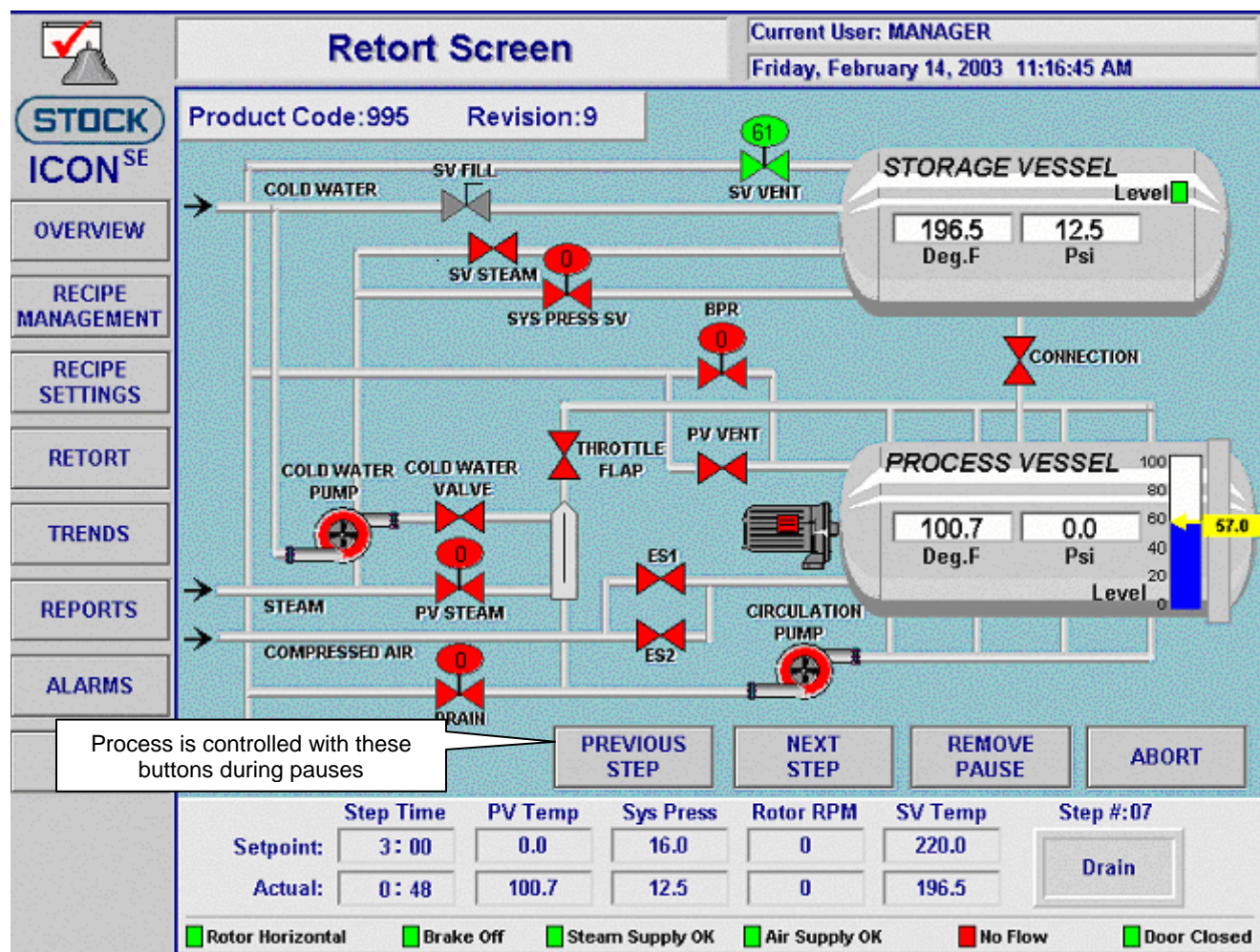


Fig 8.13

Display for Pause	Description	Status
SV Vent	Analog - Storage Vessel Vent Opens	Shows % open
Storage Vessel Level	Digital - Water level in the storage vessel	Icon is green (on) Full
Process Vessel Level	Analog - Water Level in Process Vessel	Shows % open
Rotor Horizontal	Digital - Rotor is in horizontal position	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Set Points & Actual	Shown for Time , Pressure and Temperature	

## Process Hold - In Progress

- Holding the process keeps the cook in the current step
- Accumulated step time continues to run.
- Valves, pumps and other outputs remain in the run position.

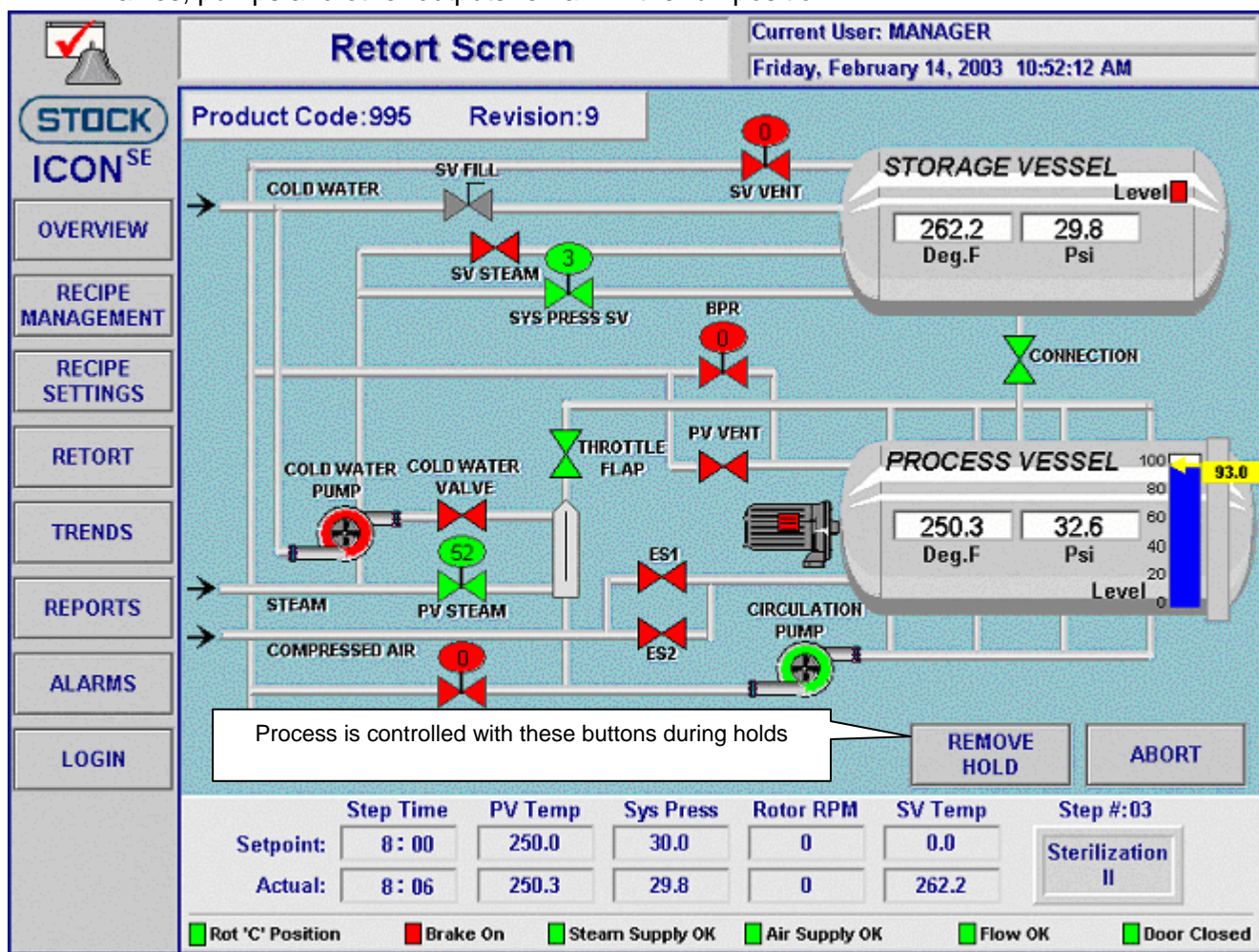


Fig 8.14

Display for Hold	Description	Status
SYS Press SV	Analog - System pressure Storage Vessel	Shows % open
Process Vessel Level	Digital - Water Level in Process Vessel	Shows % open
Connection	Digital - Connector Valve	Icon is green (on)
Throttle Flap	Digital - Throttle Flap Valve	Icon is green (on)
Process Vessel Steam	Analog - Process Vessel Heating Valve is on	Shows % open
Circulation Pump	Digital - Circulation Pump	Icon is green (on)
Rotor C Position	Digital - Rotor is in custom position	Icon is green (on)
Steam Supply OK	Digital - Steam supply is adequate	Icon is green (on)
Air Supply OK	Digital - Air is adequate	Icon is green (on)
Flow OK	Digital - Flow of water is adequate	Icon is green (on)
Door OK	Digital - Door safety switch is engaged	Icon is green (on)
Set Points & Actual	Shown for Time , Pressure and Temperature	

## Remove Process Hold - In Progress

- Select Remove Hold button on Retort Screen when ready to continue process steps again. (Fig 8.14)
- Prompts for User name and Password will appear and must be entered on Keyboard before process will continue (Fig 5.3)
- Remove Hold Confirmation will appear Select the Yes button

**Remove Hold Confirmation**

**Remove Cook Hold?**

CURRENT STEP: 3

DATE & TIME: Friday, February 14, 2003 10:53:21 AM

REASON: Maint done with repair

YES NO

STOCK

Fig 8.15

Field or Button	Function
Yes	Allows process to continue from point of hold and finish any remaining time in the step
No	Keeps the process in the current step
Reason	Dialog box for explanation; touch field to call up key board

# Trends – Viewing

## General

- Selected parameters can be viewed in real time at any point during the process.

## Select Trends Option

- Trends* – Select button on *Main Menu* at left hand column of *Retort* screen.

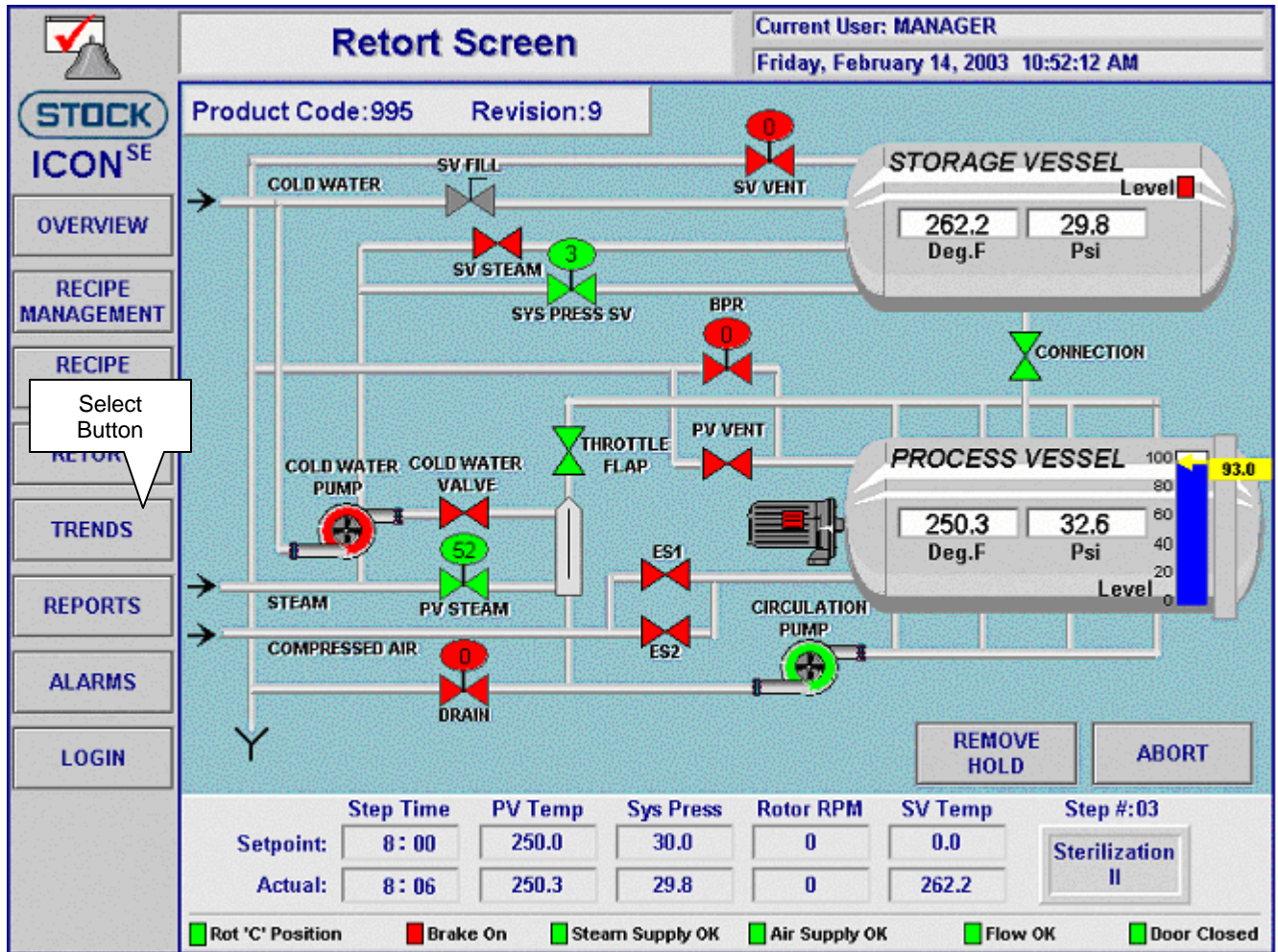


Fig 8.16

## View Trending In Progress

- Trending Screen will appear.
  - Select the desired line at the point you want to view and a value will appear.
  - To view actual current value see data at the bottom of screen

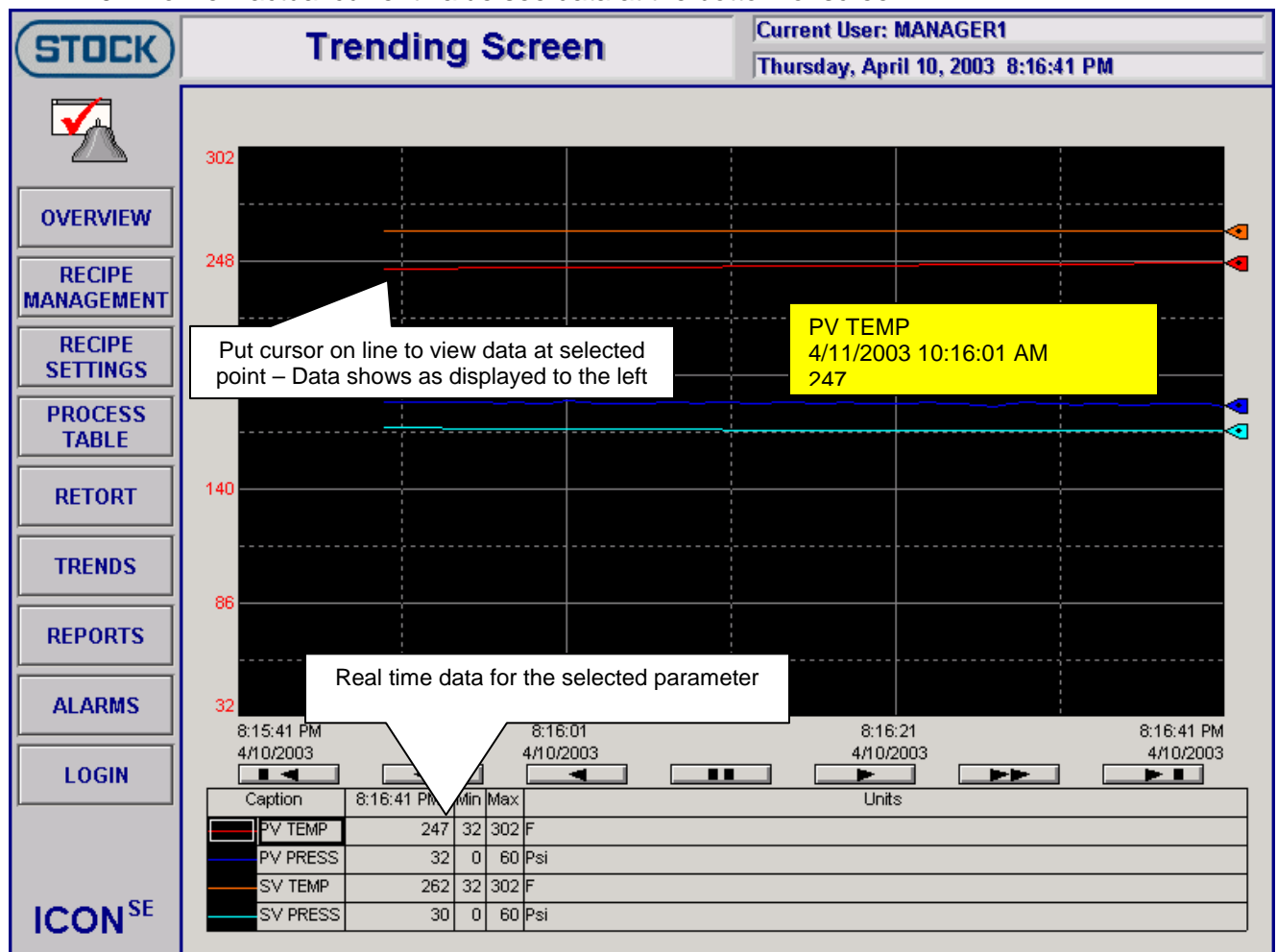


Fig 8.17

## **Appendix IV: Retort Shipment Information**

**Retort Shipment to SOPAKCO: May 2002**

Stock 1100 Retort SERIAL #:64026

Control Cabinet with PLC 5/10 controller with following modules:

- ❑ Power Module
- ❑ DC Input Module
- ❑ DC Output Module
- ❑ Analog Input Module
- ❑ Analog Output Module

XYCOM COMPUTER with

- ❑ Network Card
- ❑ AB KT Card

Backup Power Supply

Oxidata Printer

Woods Variable Frequency Drive controller, 5 HP, 230 V, 3 PH

Quick Disconnect Power Cable

Quick Disconnect Low Power and Signal Cable

Retort process vessel and storage vessel with all control valves, pumps and piping including:

- SV level gauge
- Pressure Safety Valves (2)
- Pressure Transmitters (2)
- Strobe Light
- Rotor Proximity Switches (3)
- Level Gage PV with sight glass
- Anderson DART serial#: 9826326
- Accutech RTD PV
- Steam Pressure Alarm Switch
- Minco RTD SV
- Taylor Chart Recorder
- MIG

Retort crates (8)

Dollies (8)

Dolly Track

Retort Racks for Polymeric Tray (96)

Retort Plates (5)

Pipe Wrench plus bar

Man Hole Cover

Mosol Water Conditioner

The following manuals and misc items were shipped with the retort:

Xycom manual and disks

DOS User guide and disk

Touch screen Driver manual and disk

Monitor Mouse Manual and Disk  
Two fuses  
Anderson Manual and Certificate  
Woods VFD Manual  
Electrical Drawing  
Installation Qualification Document  
QEMM software  
Stock Manuals (3)  
ICON2000 Operator Manual  
Chart Recorder Manual  
Chart Recorder Charts (1 box)  
Ink bottles for Chart Recorder  
Woods Box:

    Pulleys, bolts and split ring  
Parts Box  
    Lift handle  
    Yellow Locking Bracket  
    Rotor Extracting Tools  
    Bolts  
    Brash Valve  
    Grease Cartridge 2, #0900160  
    Silicon Paste, #0901010  
    Viscogen kl 130, #0900250  
    Seal Kit #1002063  
    Seal Kit #1002066  
    Seal Kit #1002067  
    Break pins (5), #1000091

**Retort Shipment to SOPAKCO: April 2003**

Shipping Address: 320 South Broad Street, Bennettsville, SC

Stock 1100 Retorts with ICON 2000 version 4 control system  
Serial Number 39883

Control Cabinet with SLC505 controller with following modules:

- ☐ Analog Input (1)
- ☐ Analog Output (2)
- ☐ DC Input (2)
- ☐ DC Output (2)

Allen Bradley Model 6181 Computer with following licensed software and hardware options:

- ☐ Windows 2000 Professional Operating System
- ☐ Microsoft Office 2000 Pro
- ☐ Microsoft SQL Server 2000 Personal Edition
- ☐ RS View SE Client
- ☐ RS View SE Server 25
- ☐ RS Linx for RS View
- ☐ RS SQL Professional 1500
- ☐ ICON 2000 version 4 software application
- ☐ HDD: 76.6 GB
- ☐ Processor: Pentium III
- ☐ Memory: 256 MB
- ☐ DVD
- ☐ 3.5" Floppy Drive
- ☐ I/O cards (2)
- ☐ UPS

Retorts process vessel and storage vessel with all control valves, pumps and piping including:

- ☐ SV level gauge
- ☐ Pressure Safety Valves (2)
- ☐ Ascroft Pressure Transmitter SV (0-100 psig range)
- ☐ LogTec Pressure Transmitter PV (0-60 psig)
- ☐ Strobe Light
- ☐ Rotor Proximity Switches (3)
- ☐ Endress & Hauser Analog Level Gauge PV with Sight Glass
- ☐ Minco Temperature Transmitters (2)
- ☐ Steam Pressure Alarm Switch
- ☐ ABB Kent Taylor Fullscope ER/C Chart Recorder with one box of charts
- ☐ MIG with Hub
- ☐ Temperature Gauge SV
- ☐ Pressure Gauge PV
- ☐ ES Mode Valves
- ☐ Analog Drain Valve

Retort Crates with Bottom Plates (8):

Dolies (8)

Dolly Track

Top Plate Lift Handle

Retort Rigging Lift Hook (1per two retorts)

Retort Racks (0)

Documentation:

- ☐ Installation Validation Report
- ☐ Operation Manual
- ☐ Electrical Drawings
- ☐ Instruction Manual Chart Recorder

**Retort Shipment to SOPAKCO: April 2003**

Shipping Address: 320 South Broad Street, Bennettsville, SC

Stock 1100 Retorts with ICON 2000 version 4 control system  
Serial Number 39992

Control Cabinet with SLC505 controller with following modules:

- ☐ Analog Input (1)
- ☐ Analog Output (2)
- ☐ DC Input (2)
- ☐ DC Output (2)

Allen Bradley Model 6181 Computer with following licensed software and hardware options:

- ☐ Windows 2000 Professional Operating System
- ☐ Microsoft Office 2000 Pro
- ☐ Microsoft SQL Server 2000 Personal Edition
- ☐ RS View SE Client
- ☐ RS View SE Server 25
- ☐ RS Linx for RS View
- ☐ RS SQL Professional 1500
- ☐ ICON 2000 version 4 software application
- ☐ HDD: 76.6 GB
- ☐ Processor: Pentium III
- ☐ Memory: 256 MB
- ☐ DVD
- ☐ 3.5" Floppy Drive
- ☐ I/O cards (2)
- ☐ UPS

Retorts process vessel and storage vessel with all control valves, pumps and piping including:

- ☐ SV level gauge
- ☐ Pressure Safety Valves (2)
- ☐ Ascroft Pressure Transmitter SV (0-100 psig range)
- ☐ LogTec Pressure Transmitter PV (0-60 psig)
- ☐ Strobe Light
- ☐ Rotor Proximity Switches (3)
- ☐ Endress & Hauser Analog Level Gauge PV with Sight Glass
- ☐ Minco Temperature Transmitters (2)
- ☐ Steam Pressure Alarm Switch
- ☐ ABB Kent Taylor Fullscope ER/C Chart Recorder with one box of charts
- ☐ MIG with Hub
- ☐ Temperature Gauge SV
- ☐ Pressure Gauge PV
- ☐ ES Mode Valves
- ☐ Analog Drain Valve

Retort Crates with Bottom Plates (8):

Dolies (8)

Dolly Track

Top Plate Lift Handle

Retort Rigging Lift Hook (1per two retorts)

Retort Racks (0)

Documentation:

- ☐ Installation Validation Report
- ☐ Operation Manual
- ☐ Electrical Drawings
- ☐ Instruction Manual Chart Recorder

**Retort Shipment to SOPAKCO: April 2004**

Shipping Address: 320 South Broad Street, Bennettsville, SC

Stock 1100 Retorts with ICON 2000 version 4 control system  
Serial Number 39882

Control Cabinet with SLC505 controller with following modules:

- ☐ Analog Input (1)
- ☐ Analog Output (2)
- ☐ DC Input (2)
- ☐ DC Output (2)
- ☐ SLC-IP address: 208.211.240.183

Computer Dynamics PAC-OP Operator Interface (M930100184) (<http://www.cdynamics.com/pacop.html>) with following licensed software and hardware options:

- ☐ Windows 2000 Professional Operating System
- ☐ Microsoft Office XP-SBE
- ☐ Microsoft SQL Server 2000 Personal Edition
- ☐ RS View SE Client
- ☐ RS View SE Server 25
- ☐ RS Linx for RS View
- ☐ RS SQL Standard 1500
- ☐ ICON 2000 version 4 software application
- ☐ HDD: 18.6 GB
- ☐ Processor: Pentium III
- ☐ Memory: 515 MB
- ☐ DVD/CD-ROM
- ☐ 3.5" Floppy Drive
- ☐ I/O cards (2)
- ☐ UPS
- ☐ PC-IP Address: 208.211.240.182, Computer Name: PC882 , Workgroup/Domain: Workgroup

Retorts process vessel and storage vessel with all control valves, pumps and piping including:

- ☐ SV level gauge
- ☐ Pressure Safety Valves (2)
- ☐ Ascroft Pressure Transmitter SV (0-100 psig range)
- ☐ LogTec Pressure Transmitter PV (0-60 psig)
- ☐ Strobe Light
- ☐ Rotor Proximity Switches (3)
- ☐ Endress & Hauser Analog Level Gauge PV with Sight Glass
- ☐ Minco Temperature Transmitters (2)
- ☐ Steam Pressure Alarm Switch
- ☐ ABB Kent Taylor Fullscope ER/C Chart Recorder with one box of charts
- ☐ MIG with Hub
- ☐ Temperature Gauge SV
- ☐ Pressure Gauge PV
- ☐ ES Mode Valves
- ☐ Analog Drain Valve

Retort Rigging Lift Hook (1per two retorts)

Documentation:

- ☐ Installation Validation Report
- ☐ Operation Manual
- ☐ Electrical Drawings
- ☐ Instruction Manual Chart Recorder

**Retort Shipment to SOPAKCO: April 2004**

Shipping Address: 320 South Broad Street, Bennettsville, SC

Stock 1100 Retorts with ICON 2000 version 4 control system  
Serial Number 39993

Control Cabinet with SLC505 controller with following modules:

- ☐ Analog Input (1)
- ☐ Analog Output (2)
- ☐ DC Input (2)
- ☐ DC Output (2)
- ☐ SLC-IP address: 208.211.240.192

Computer Dynamics PAC-OP Operator Interface (M930100190) with following licensed software and hardware options:

- ☐ Windows 2000 Professional Operating System
- ☐ Microsoft Office XP-SBE
- ☐ Microsoft SQL Server 2000 Personal Edition
- ☐ RS View SE Client
- ☐ RS View SE Server 25
- ☐ RS Linx for RS View
- ☐ RS SQL Standard 1500
- ☐ ICON 2000 version 4 software application
- ☐ HDD: 18.6 GB
- ☐ Processor: Pentium III
- ☐ Memory: 515 MB
- ☐ DVD/CD-ROM
- ☐ 3.5" Floppy Drive
- ☐ I/O cards (2)
- ☐ UPS
- ☐ PC-IP Address: 208.211.240.193, Computer Name: PC993 , Workgroup/Domain: Workgroup

Retorts process vessel and storage vessel with all control valves, pumps and piping including:

- ☐ SV level gauge
- ☐ Pressure Safety Valves (2)
- ☐ Ascroft Pressure Transmitter SV (0-100 psig range)
- ☐ LogTec Pressure Transmitter PV (0-60 psig)
- ☐ Strobe Light
- ☐ Rotor Proximity Switches (3)
- ☐ Endress & Hauser Analog Level Gauge PV with Sight Glass
- ☐ Minco Temperature Transmitters (2)
- ☐ Steam Pressure Alarm Switch
- ☐ ABB Kent Taylor Fullscope ER/C Chart Recorder with one box of charts
- ☐ MIG with Hub
- ☐ Temperature Gauge SV
- ☐ Pressure Gauge PV
- ☐ ES Mode Valves
- ☐ Analog Drain Valve

Retort Rigging Lift Hook (1per two retorts)

Documentation:

- ☐ Installation Validation Report
- ☐ Operation Manual
- ☐ Electrical Drawings
- ☐ Instruction Manual Chart Recorder

Software Licenses that were shipped with retorts that have the ICON-SE control system:

Host Computer:

- ❑ Microsoft 2000 Server 5.00.2195 SP2, key VRPQX-CMD48-WB74X-2YKWQ-MXHW8, License# 51876-OEM-0005045-20563
- ❑ Microsoft 2000 Professional BHY7Q-PDDTX-HJWW7-06CX9-KJMW8 (second label on PC???)
- ❑ RSView SE Client Rev 2.10.00 ser # 2524000449 9701VWSCWAENE
- ❑ RSView SE Server 100 Rev 2.00.01 ser# 2527000280 9701VWSS100AENE
- ❑ RSSQL Standard 5000 Rev 5.00.00 ser# 2562000121 9356STD2350
- ❑ RSMACC Ver 1.01.00 ser# 2418000104, 9515-MACCCD-10.16.02 (not installed)
- ❑ Microsoft Office 2000 SBE, lic#: 54188-OEM-1792691-89839 (no CD existing)
- ❑ Microsoft SQL Server 2000 Standard SP2 BHD87-9R9XR-97KFF-PTWVP-K7P3M

Retort 883

- ❑ Microsoft 2000 Professional, Version 5.00 2195 SP 3, key FC9FD-9DRGV-GX4X7-FJPD8-VRMQJ, License # 51837-OEM-0009955-23195
- ❑ RSView SE Client Rev 2.10.00 ser # 2524001131 , 9701VWSCWAENE
- ❑ RSView SE Server 25 Rev 2.00.01 ser# 2526000236, 9701VWSS025AENE
- ❑ RSSQL Professional 1500 Rev 5.00.00 ser# 1131000765,
- ❑ Microsoft Office XP 2000 SBE, DWMD4-4YYHR-BDRGJ-6J2WF-TC2J
- ❑ Microsoft SQL Server 2000 Personal Edition, F7769-PCT2R-9MP4C-2HCWG-DQJBT
- ❑ Microsoft Internet Explorer, Version 6.0.2800.1106, SP 1

Retort 992

- ❑ Microsoft 2000 Profesional, Version 5.00 2195 SP 3, key MHM4D-HPJK2-KVXMB-HQQVY-8MYQG, License # 51837-OEM-0009955-23194
- ❑ RSView SE Client Rev 2.10.00 ser # 2524000448, 9701VWSCWAENE
- ❑ RSView SE Server 25 Rev 2.00.01 ser# 2526000235, 9701VWSS025AENE
- ❑ RSSQL Professional 1500 Rev 5.00.00 ser# 1131000766, 9356PRO2300
- ❑ Microsoft Office XP 2000 SBE, QT343-8H63D-CGMMQ-2VDR4-8KXF6
- ❑ Microsoft SQL Server 2000 Personal Edition, QXC83-XVKDY-KCPH3-K4YRF-FCX73
- ❑ Microsoft Internet Explorer, Version 6.0.2800.1106, SP 1

**Retort 882 (PC#M930100184)**

- ❑ Microsoft 2000 Professional, Version 5.00 2195, SP2, key THJRC-MPBJV-VWP4W-4PTJY-298JM, License #
- ❑ View SE Client Rev 3.00.01 ser # 2524002405 , cat#: 9701VWSCWAENE
- ❑ RSView SE Server 25 Rev 3.00.01 ser# 2526000889, cat#: 9701VWSS025AENE
- ❑ RSSQL Standard 1500 Rev 6.00.02 ser# 1126000556, cat#: 9356STD2300
- ❑ Microsoft Office XP SBE, VDPTM-7HF9H-WR64P-R7FHR-TVT63
- ❑ Microsoft SQL Server 2000 Personal Edition, SP-3a B4X86-JGK67-FTFQJ-VKRKG-DXMMT

**Retort 993 (PC#M930100190)**

- ❑ Microsoft 2000 Professional, Version 5.00 2195, SP2, key FYP96-KHDWT-HB8J9-MDBJX-Y2DJ, License # 51873-OEM-0011577-07407
- ❑ RSView SE Client Rev 3.00.01 ser # 2524002406, cat#: 9701VWSCWAENE
- ❑ RSView SE Server 25 Rev 3.00.01 ser# 2526000890, cat#: 9701VWSS025AENE
- ❑ RSSQL Standard 1500 Rev 6.00.02 ser# 1126000557, cat# 9356STD2300
- ❑ Microsoft Office XP SBE, GTGT6-VPQGC-77326-37FKW-DGX2M
- ❑ Microsoft SQL Server 2000 Personal Edition, SP-3a GHXDG=H74RV-JKJX4-9HTKH-QH6QY