

MFG/PRO® eB

Product Change Control

TRAINING GUIDE



70-2830A
MFG/PRO Version eB
Database: Demo
June 2001

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About This Course



Course Description

QAD designed this course to cover the basics of preparing to set up and use the Product Change Control (PCC) functions of MFG/PRO. The course includes hands-on activities and exercises that allow students to practice key concepts and processes in PCC.

Learning Objectives

Students learn how to:

- Analyze some key business decisions before setting up PCC
- Determine business requirements for setting up and using PCC
 - Product Change Orders (PCOs)
 - Product Change Requests (PCRs)
- Understand the relationships of components
- Set up so that PCC will best match the business rules

Approximate Length of Course

QAD designed this course to be taken in one day.

Who Should Attend This Course

- Engineers
- Appropriate business managers
- Implementation consultants and members of implementation teams
- Key end users

Prerequisites

- *Initial MFG/PRO Setup* training course
- Product Structures and Formulas training course
- Work Centers, Routings, and WO Subcontracting training course

Training Information on QAD Web Site

You can easily find course descriptions, training schedules, training locations, and other training information by visiting us at our web site, www.qad.com/services/learn

In addition, a Portable Document Format (.pdf) copy of *MFG/PRO User Guides* is readily available to customers and partners who have an account on our web site.

Training Materials Ordering Information

- Product Change Control Training Guide, item number 70-2830A
- MFG/PRO eB GUI demo CD, item number 10-0631

Related Courses

- Initial MFG/PRO Setup training course
- Product Structures/Formulas training course
- Work Centers, Routings, and WO Subcontracting training course

Certification Preparation

This course is one of several courses designed to assist students in preparing for QAD certification examinations. However, QAD does not guarantee anyone a passing grade as a result of having taken this course.

Students preparing for certification examinations should study all available materials (user guides, training guides, on-line help, for example) and acquire industry and field experience.

Notes to Instructors

This training guide provides a road map for instruction and learning. It contains:

- Annotated PowerPoint slides for instructors
- MFG/PRO screens annotated for instructors to demonstrate the module's functionality
- Exercises and study questions

PowerPoint Slides

QAD created the slides using Microsoft® PowerPoint® 97. Instructors may want to animate text, graphics, and other objects on the slides to

- Focus on important points
- Control the flow of information
- Add interest and variety to the presentation

Clicking on **Animation Preview** on the **Slide Show** menu previews animation of text and objects. To customize slides, click on **Custom Animation** on the **Slide Show** menu.

Configuration and Setup for This Course

- Install the Demo database to make the exercises in this training course accessible
- For hardware requirements, refer to the Readme files on the MFG/PRO demo CDs



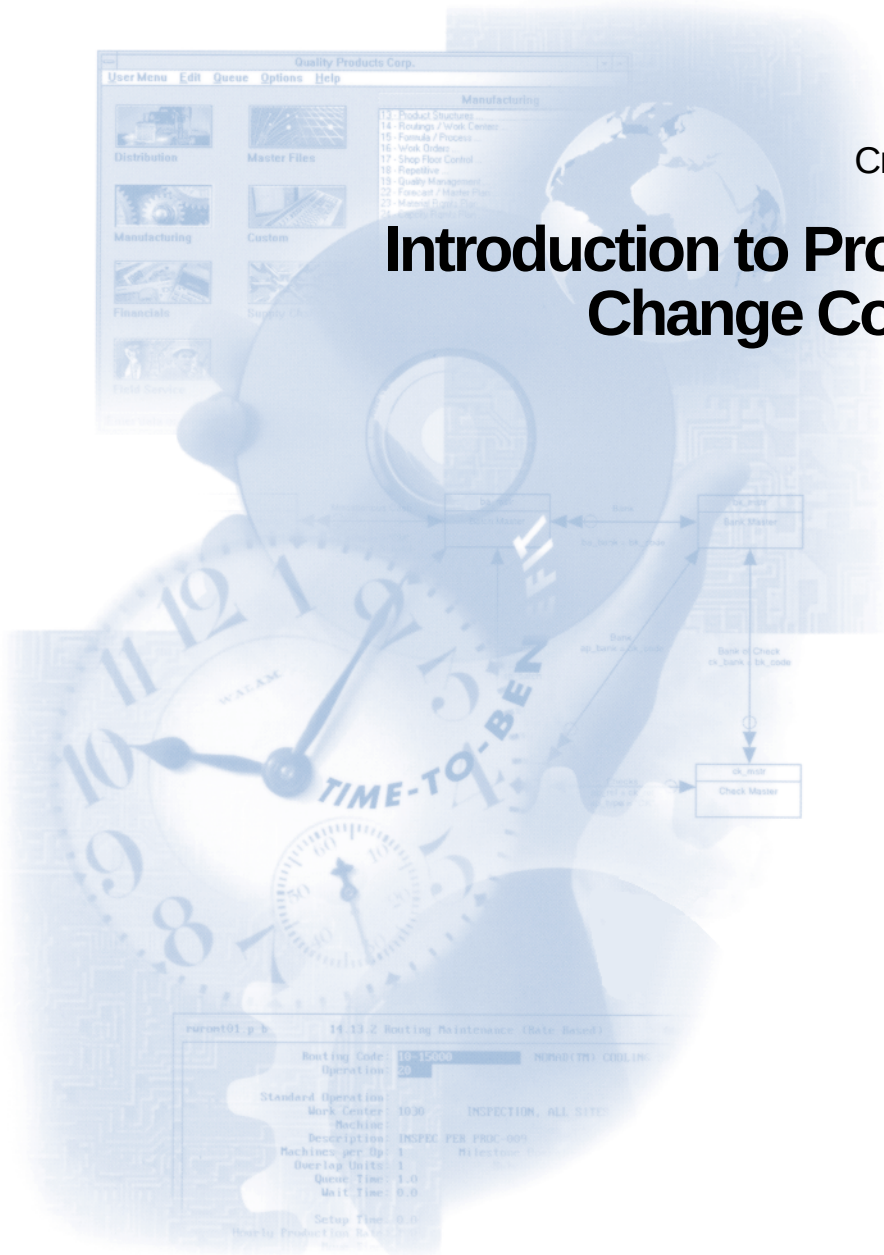
General Training Facilities Information

- Telephone or fax
- Messages
- Restrooms
- Class hours: start and finish times, and punctuality
- Breaks: frequency, approximate times
- Parking considerations; carpooling
- Emergency procedures: location of first aid, contact person for assistance
- Exit locations, building hours
- Location of approved smoking area

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CHAPTER 1

Introduction to Product Change Control





Course Overview

- ♦ Introduction to Product Change Control
- ♦ Business Considerations
- ♦ Set up Product Change Control
- ♦ Process Product Change Orders
- ♦ Process Product Change Requests

PCC-IN-040

Course Overview

Introduction to Product Change Control (PCC)

- Introduction to the PCC functionality covered in this course
- How PCC fits into the overall scope of your business requirements
- How PCC fits into the overall scope of MFG/PRO
- Generic business cases

Pre-setup Business Issues

- Some key business issues that affect setup and process procedures
- Definitions of these issues
- Some reasons to consider the issues
- The functionality of these procedures in the context of MFG/PRO
- Setup implications of these issues

Set Up Product Change Control (PCC)

The setup procedures for PCC assume general implementation of MFG/PRO has already been accomplished. The chapter outlines both required and optional setup procedures.

What is the procedure?	Who is responsible?
Record ECO Data	IT and Management
Create User IDs	IT
Set up E-mail	IT
Set up Severity Codes	IT and Management
Set up Master Comments	Cross-functional Management Team
Define Document Types	PCC Management
Create Groups	PCC Management
Design Routing Slips	PCC Management
Set up PCC Control File	PCC Management

Process Product Change Orders (PCOs)

What is the procedure?	Who is responsible?
Create/Maintain PCO	Document Control
Review/Print PCO	Document Control
Route PCO	End User

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Approve PCO	Approval Group
Release and Distribute PCO	Document Control
Incorporate PCO	Document Control
Implement PCO	Document Control

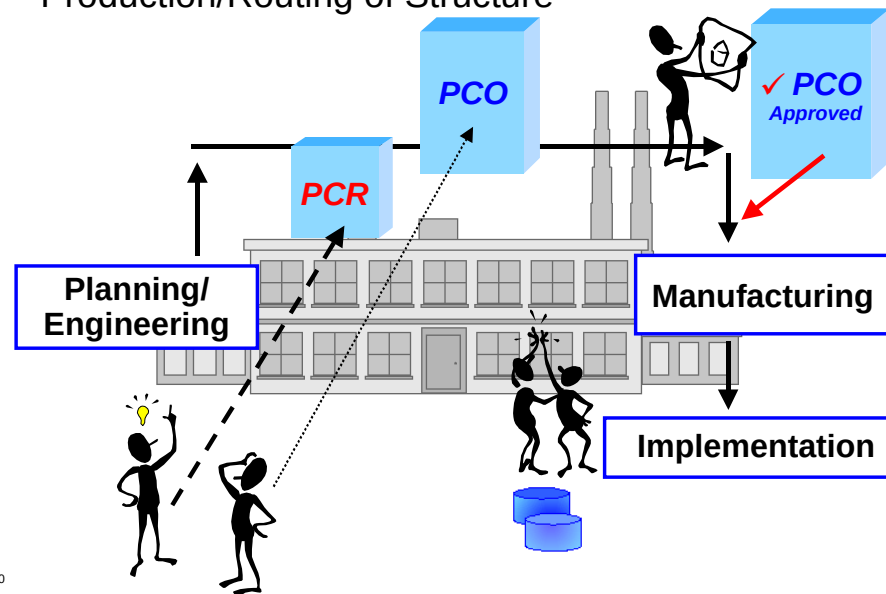
Process Product Change Requests (PCRs)

PCRs are optional. Some companies will not implement PCRs in their business procedures.

What is the procedure?	Who is responsible?
Create/Maintain PCR	Document Control
Route PCR	Document Control
Approve PCR	Approval Group
Close PCR to PCO	Document Control

Overview of Business Need

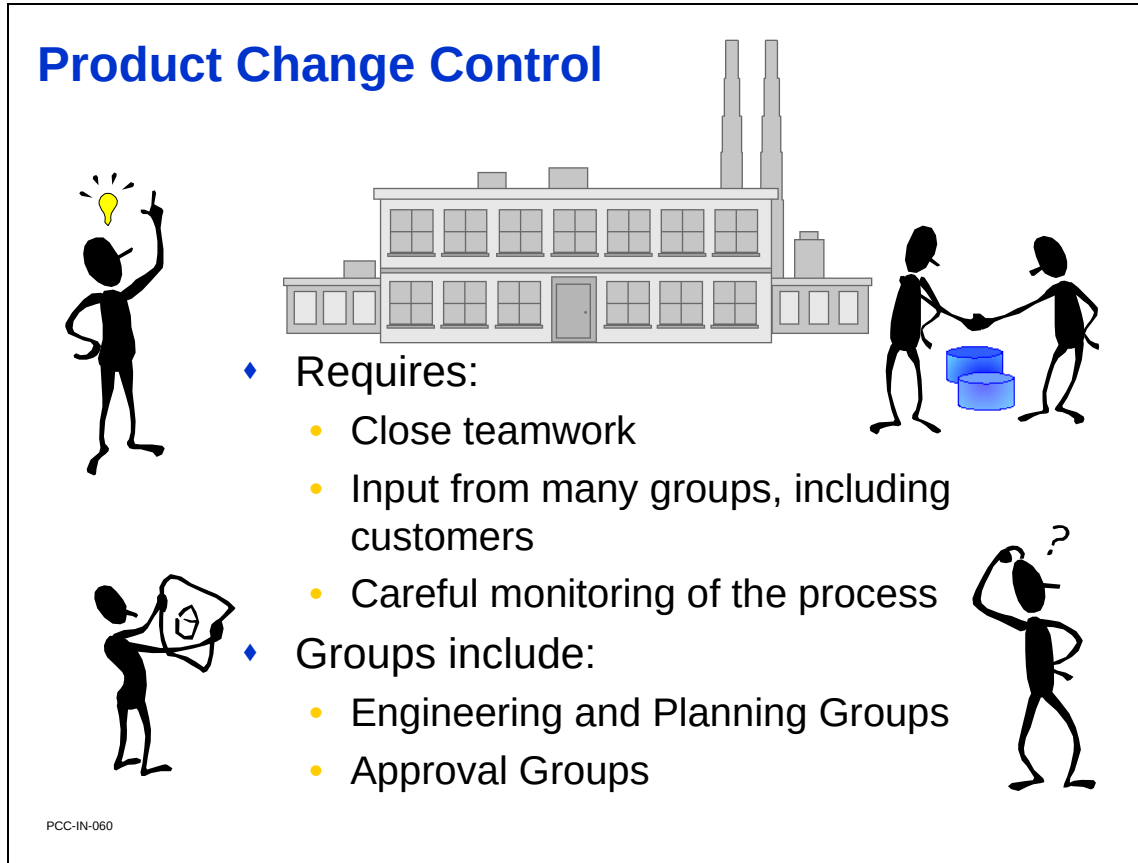
- ♦ Control and Monitor Changes
- ♦ Contents of Structure
- ♦ Production/Routing of Structure



Overview of Business Need

The Product Change Control module of MFG/PRO can help you meet your business requirements in three major ways:

- 1 The more complex your business, the more you need a business system to evaluate, define, approve, and incorporate proper change control. PCC provides an integrated process to support your business requirements.
- 2 Changes to product structure or routing can have serious effects in the manufacturing process. PCC helps you control and monitor changes to the contents of the product or its product structures.
- 3 Some companies have a requirement to leave an audit trail for legal, economic, and regulatory agencies to review. PCC is a tool that will do that for you.



Typical Characteristics

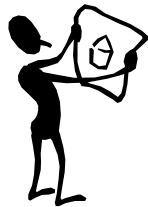
Product Changes have some common characteristics:

- Changes require close teamwork to coordinate incorporation and implementation
- Changes require input from many groups, including methods to prioritize different inputs
- Changes require close and careful monitoring to ensure accuracy

Various groups involved in the product changes include:

- Engineers
- Planners
- Approvers

PCC Solution Offers



Framework for Change Management
Control over:

- Item Engineering Data
- Product Structures
- Routings
- Formulas
- Processes
- Specifications



PCC-IN-070

Solution Characteristics

Using PCC to introduce changes into MFG/PRO can:

- Provide a framework for complete change management, including control over:
 - Item Engineering data
 - Product Structures
 - Routings
 - Formulas
 - Processes
 - Specifications

PCC Limitations

- ◆ Does Not Automatically Control:

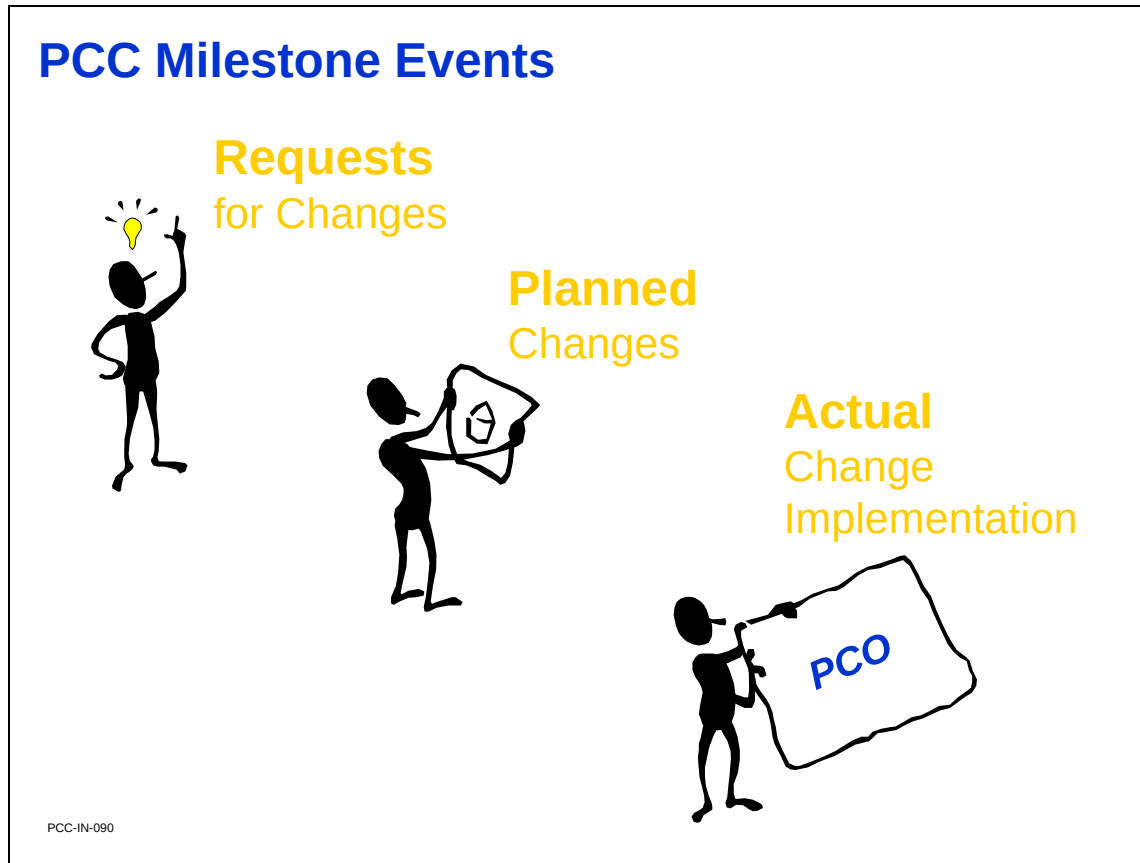
- Item-Site Data (Maintained Locally)
- Alternate Routings
- Co/By-Product Structures



PCC-IN-080

Limitations

- Item-Site data must be maintained locally
- Cannot automatically control:
 - Alternate Routings
 - Co/By-Product Structures



Milestone Events

- Need to track, evaluate and manage three stages during product change:
 - Request for change is placed
 - Plans to initial changes are designed
 - Actual changes are incorporated and implemented in MFG/PRO

Key Considerations



Requests for Changes

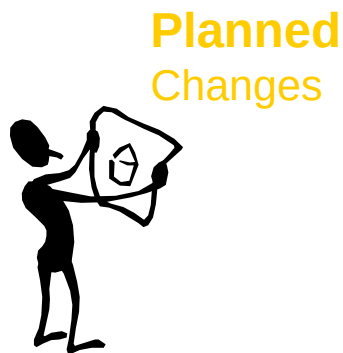
- ◆ Ensure Accurate Notification of Changes
- ◆ Secure Authorization to Make Changes
- ◆ Facilitate Group Communication of Change Requests

PCC-IN-100

Requests for Changes

- Need to ensure:
 - Accurate notification
 - Security measures to establish authorization levels
- Desire to establish methods for timely communication between involved parties

Key Considerations



- ♦ Minimize Cost of Implementation
- ♦ Coordinate Plans Throughout Company (Engineering, Sales, Production, Purchasing)
- ♦ Minimize Effects on Geographical and/or Database Separation

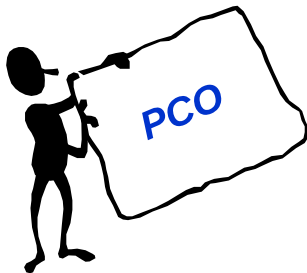
PCC-IN-110

Planned Changes

- Desire to:
 - Minimize the costs involved
 - Coordinate all changes with all concerned groups—engineers, sales persons, production staff, purchasers
 - Coordinating change information across geographic and database separation, such as minimizing downtime and information lag

Key Considerations

Actual Change Implementation



PCC-IN-120

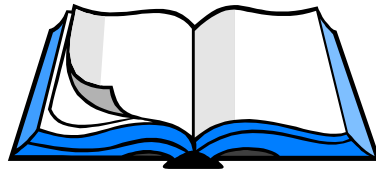
- ♦ Ensure Accurate Effective Dates
- ♦ Define and Control Approvals
- ♦ Secure Accurate and Timely Changes to Planning Data and Production

Actual Change Implementation

- Need to ensure:
 - Accurate effective dates are established
 - Approvals have been correctly assigned, controlled, and verified
 - Changes to planning data and production are both accurate and timely

Product Change Terminology

- Product Change Request (PCR)
- Product Change Order (PCO)
- Revision Level
- Effective Dates
- Disposition



PCC-IN-130

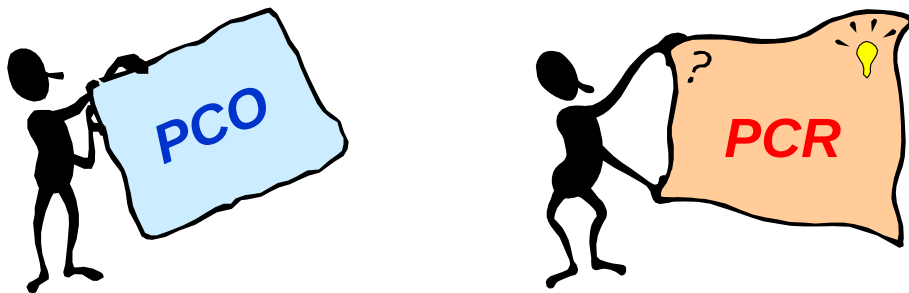
Terminology

Product Change Documents

♦ Two Types of Documents:

Product Change Order (PCO)

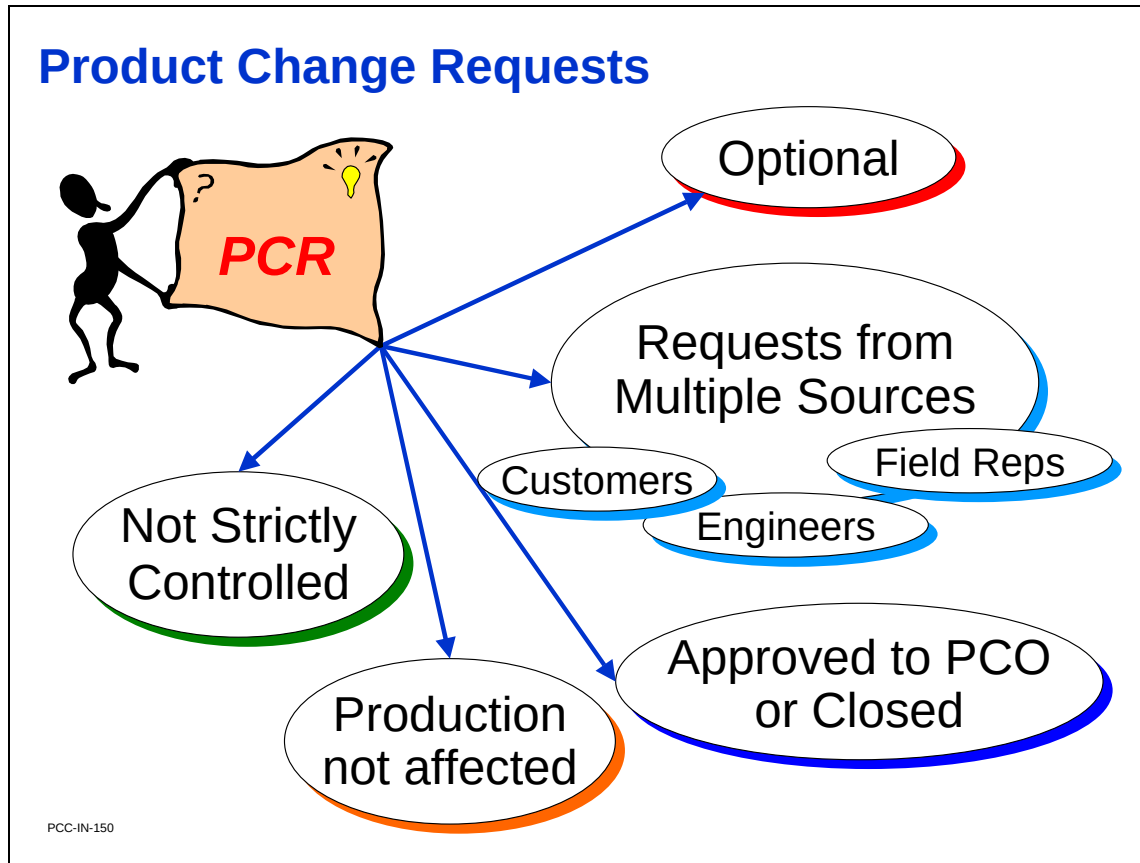
Product Change Request (PCR)



PCC-IN-140

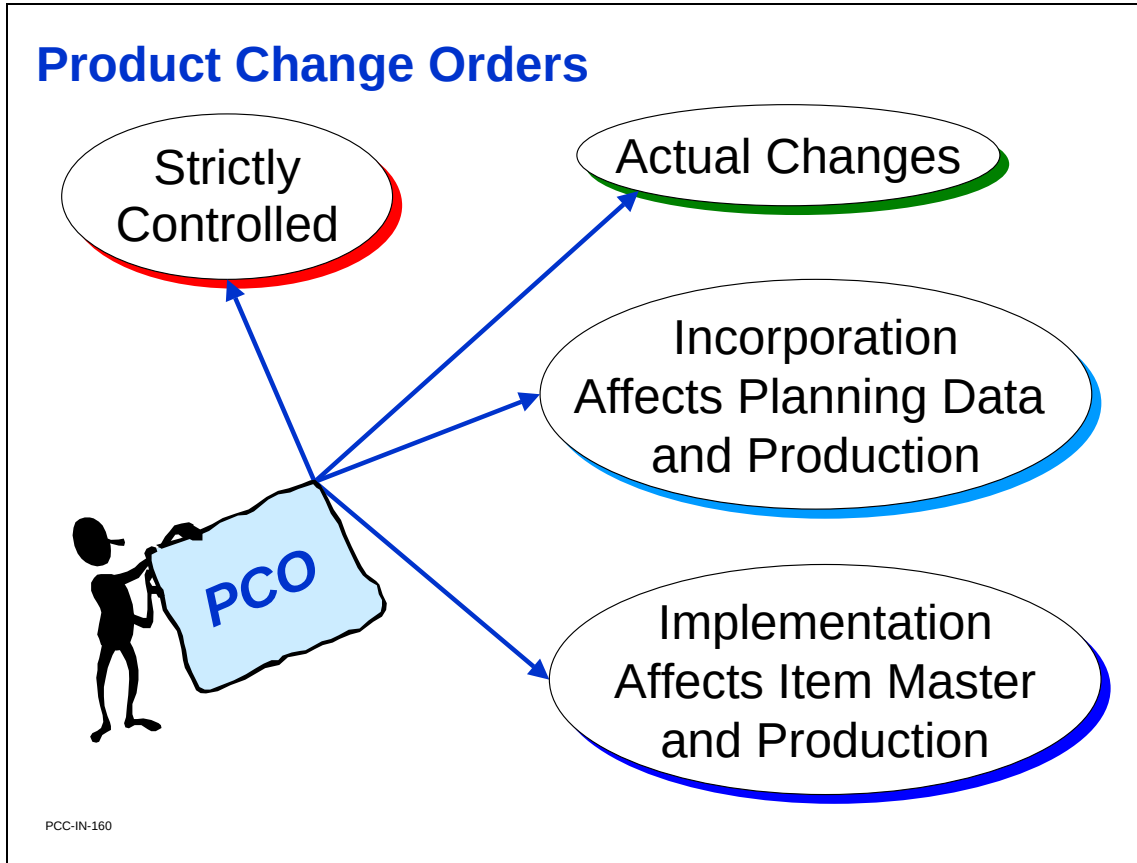
Documents in PCC

- Product Change Orders
 - Conduct actual changes intended to affect planning data and production
- Product Change Requests (optional)
 - Can be used in the same way Sales Quotes precede Sales Orders
 - Planning data and production not affected



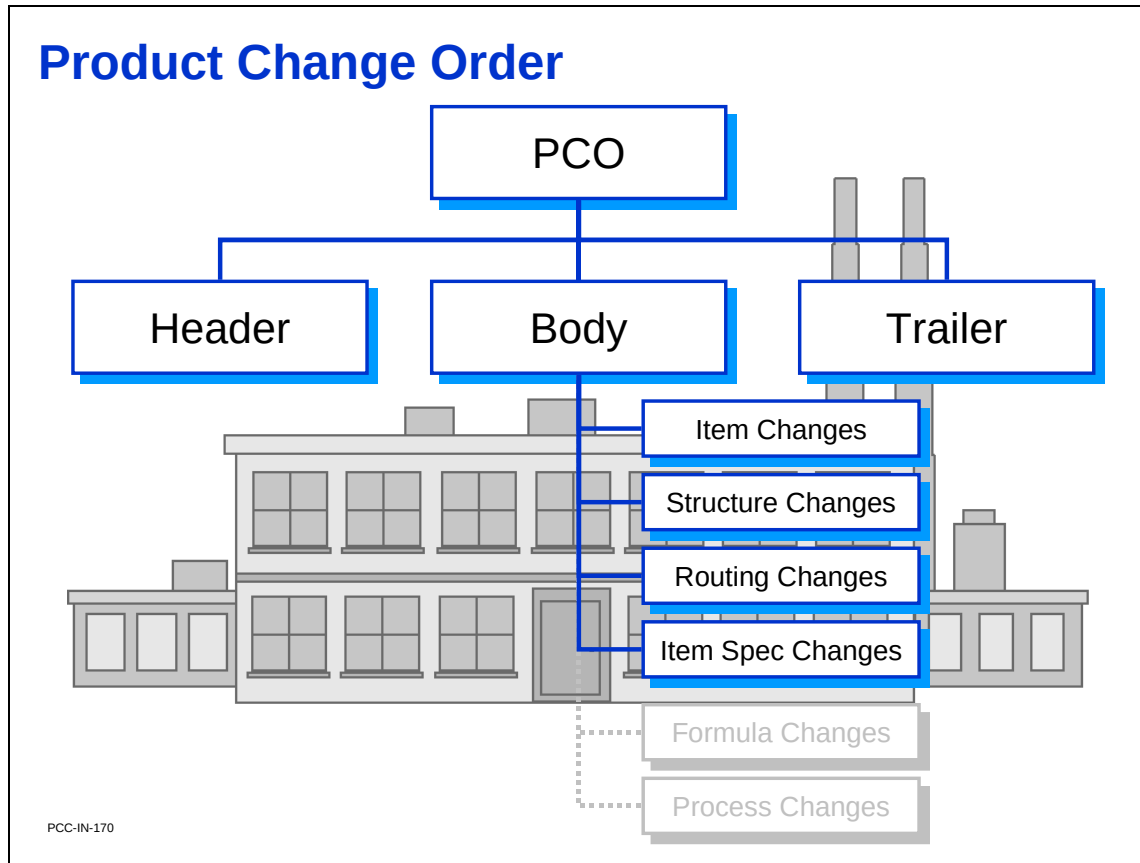
Product Change Requests

- Optional
- Requests come from many sources
 - Customers
 - Field Reps
 - Engineers
- PCRs are not strictly controlled
- Production is not affected
- Can be approved to a PCO or rejected/unapproved and closed
- More than one PCR can exist for an item



Product Change Orders

- Required in PCC
- Very strictly controlled
- Affects Planning Data when Incorporated
- Affects Item Master when Implemented
- Only one PCO can exist per item

**Header**

- Generic change information

Line Items

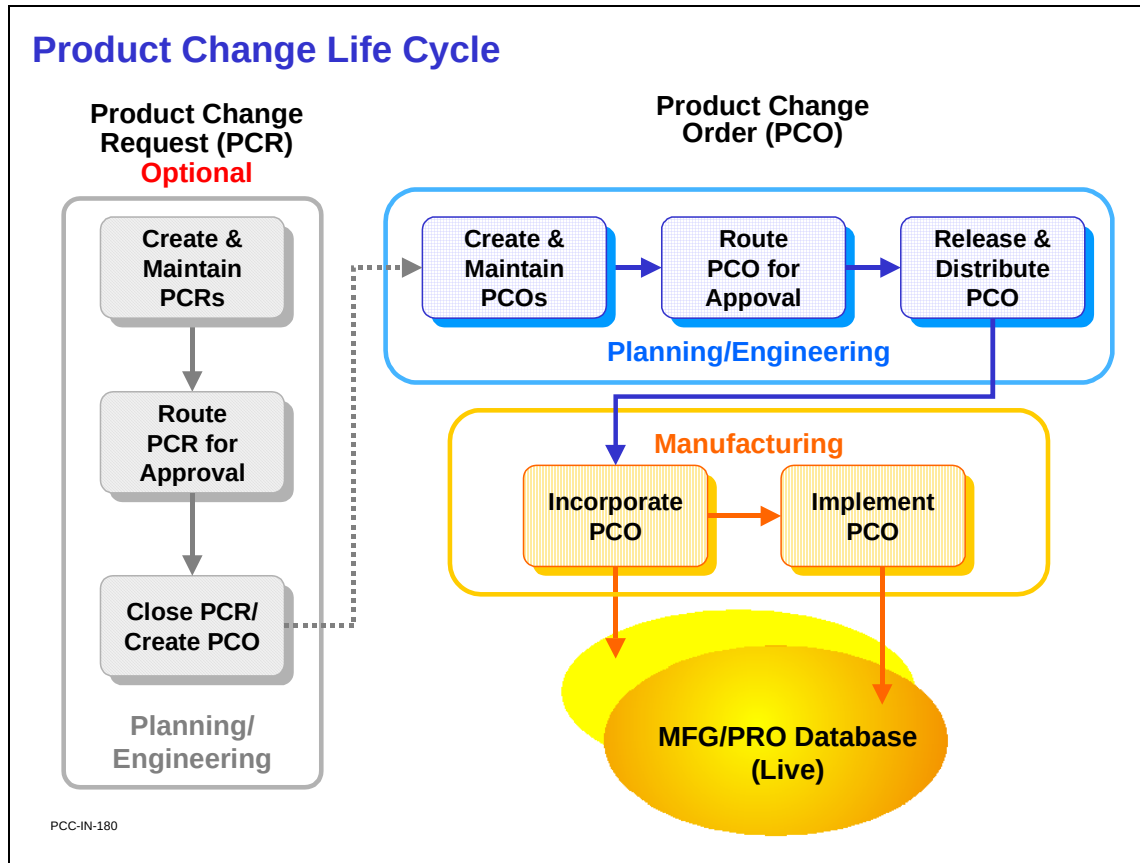
- Specific changes for:
 - Items, Product Structure, Routing, and Item Specs
 - Formulas and Processes, if applicable (optional in this training guide)

Trailer

- Close or reopen a PCO

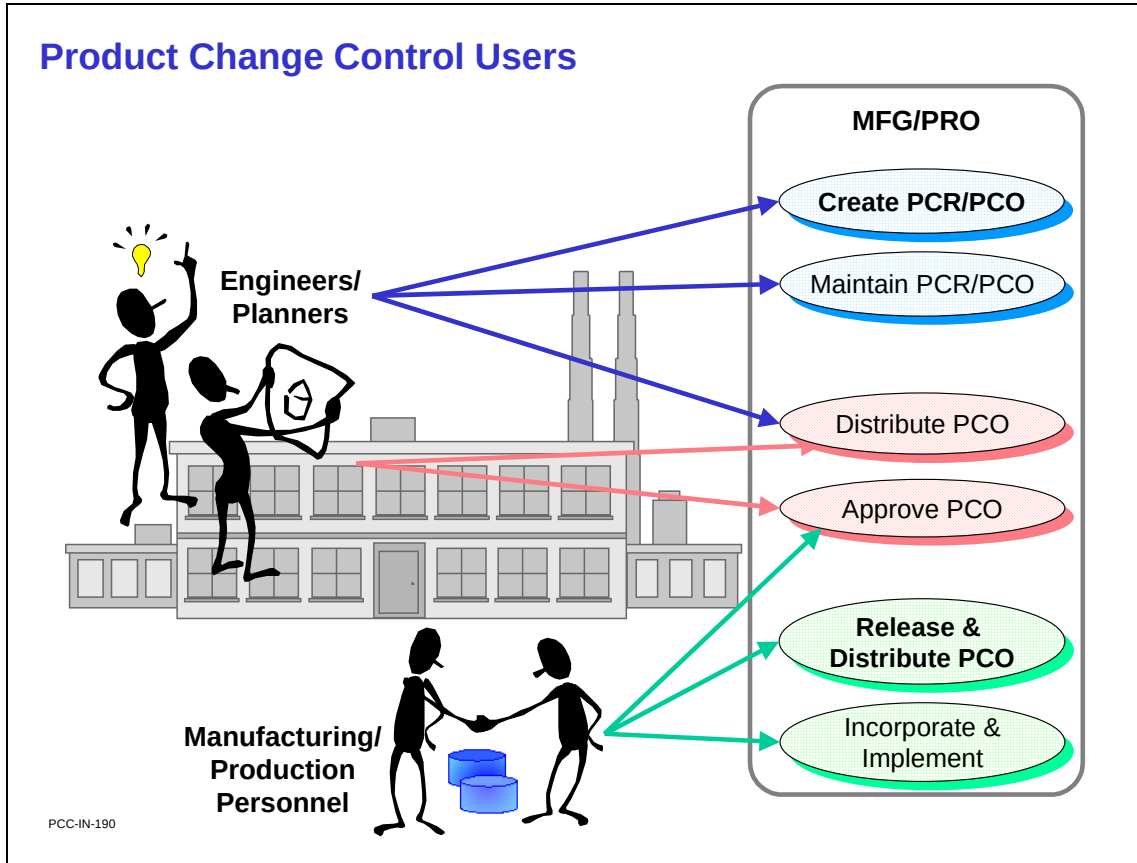
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- Displays information for the release process:
 - Routing slip
 - Distribution group
 - Date submitted
 - Date approved



Product Change Life Cycle

- After PCOs are approved by Planning/Engineering, they are released to Manufacturing
- Incorporating a PCO puts it into Production with an Effective Date
 - Incorporation makes the information available to Planning Data
- When the Effective Date is reached, the PCO is implemented into Production
 - Changes move into the item master files



Product Change Control Users

- Distributing PCOs is often done by either engineers or planners
- Approving PCOs is often done by engineers, planners, and/or production personnel



Course Objectives

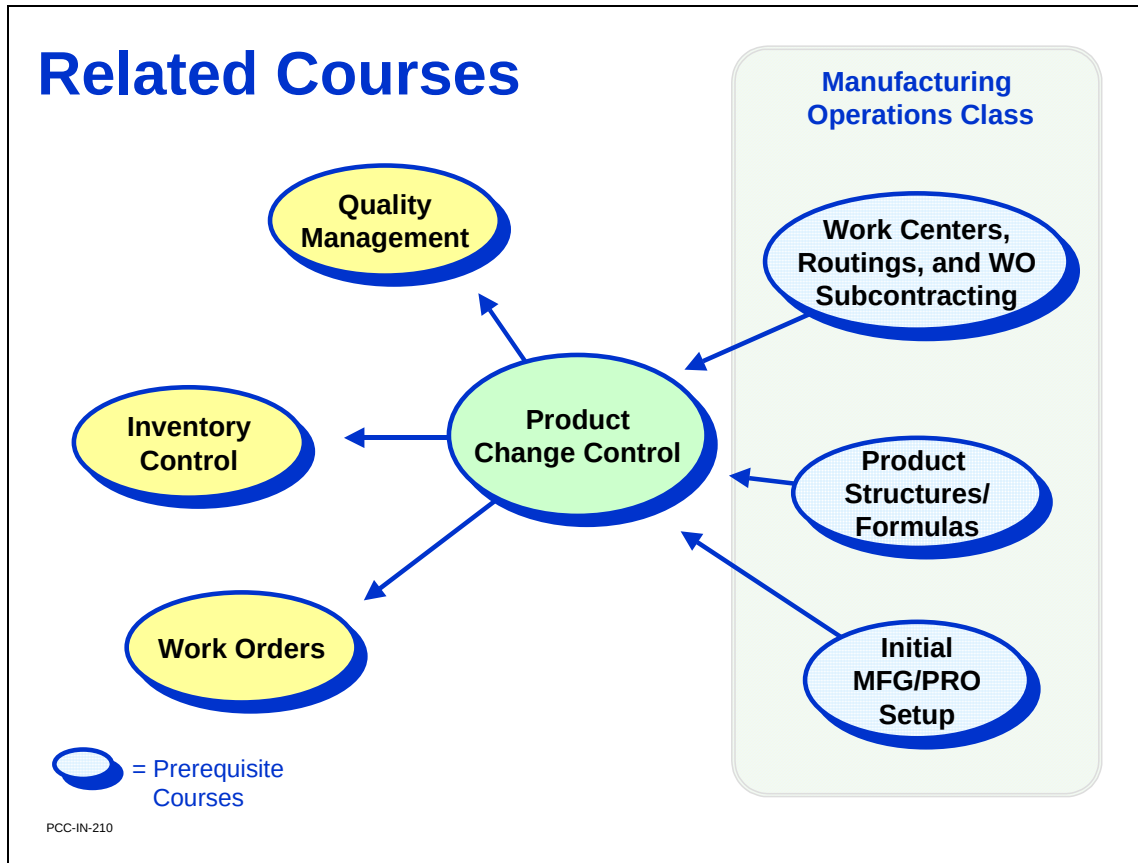
In this class you learn how to:

- ♦ Identify some key business considerations before setting up Product Change Control in MFG/PRO
- ♦ Set up Product Change Control in MFG/PRO
- ♦ Process Product Change Orders (PCOs) in MFG/PRO
- ♦ Process Product Change Requests (PCRs) in MFG/PRO

PCC-IN-200

Learning Objectives

- Identify key business issues that affect the setup tasks
 - What these business issues are
 - How they might affect setup
 - Why should these issues be considered prior to setup
- Specific implementation setup procedures for Product Change Control
 - Identify required versus optional setup procedures
- Understand general processing flow for PCOs, with primary and alternative procedures
- Understand general processing flow for PCRs, an optional procedure



Related Courses



Course Overview

- ✓ Introduction to Product Change Control
 - ◆ Business Considerations
 - ◆ Set up Product Change Control
 - ◆ Process Product Change Orders
 - ◆ Process Product Change Requests

PCC-IN-220

CHAPTER 2

Business Considerations





Business Considerations

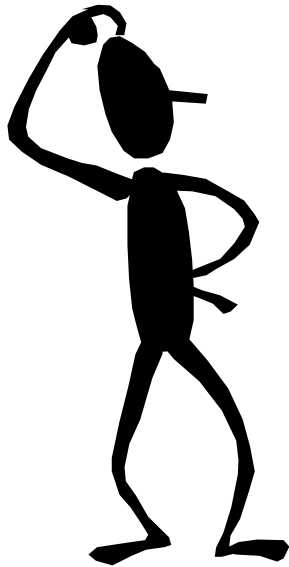
In this section you learn how to:

✓ **Identify some key business considerations before setting up Product Change Control (PCC)**

- ♦ Process Product Change Orders (PCOs) in MFG/PRO
- ♦ Process Product Change Requests (PCRs) in MFG/PRO

PCC-BU-010

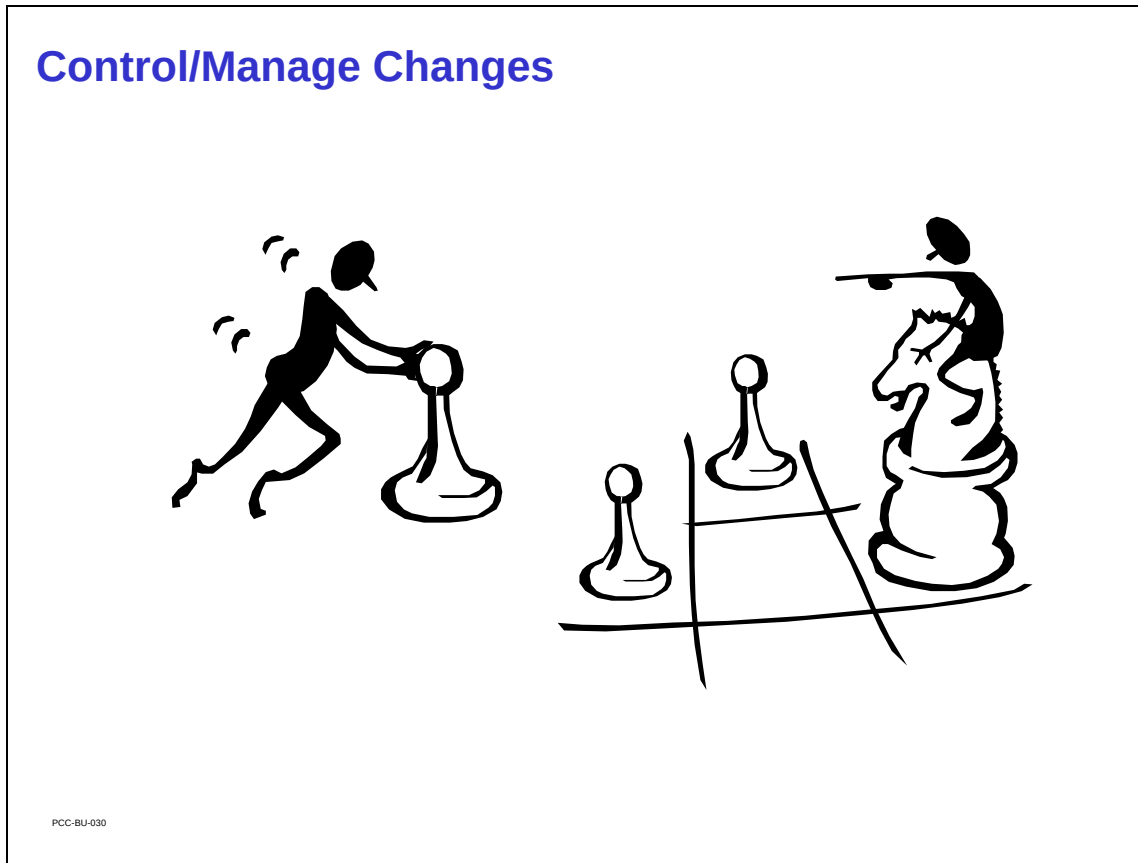
Business Considerations



PCC-BU-020

- ✓ Control/Manage Changes
- ✓ Approval Methods
- ✓ Inventory Management
- ✓ Approvals
- ✓ Change Notifications
- ✓ Broad Contact Inclusion
- ✓ Import/Export PCRs/PCOs
- ✓ Product Data Management (PDM)

There are several business issues to take into consideration before setting up MFG/PRO. This section does not discuss all potential issues, but presents some issues to generate thought and discussion.



Control/Manage Changes

Definition

Changes made to your items, product structures, routings, item specs, formulas, or processes can have significant effects on your financials and production. Controlling and Managing the types of changes, access to change administration, and timing of changes is critical.

Why Consider?

- Can effect budgets and standard costs
- Inventory issues

Functionality in MFG/PRO

- Security controls over who has authority to issue or approve product changes
- Routing severity manages rejections and reapprovals

Setup Implications

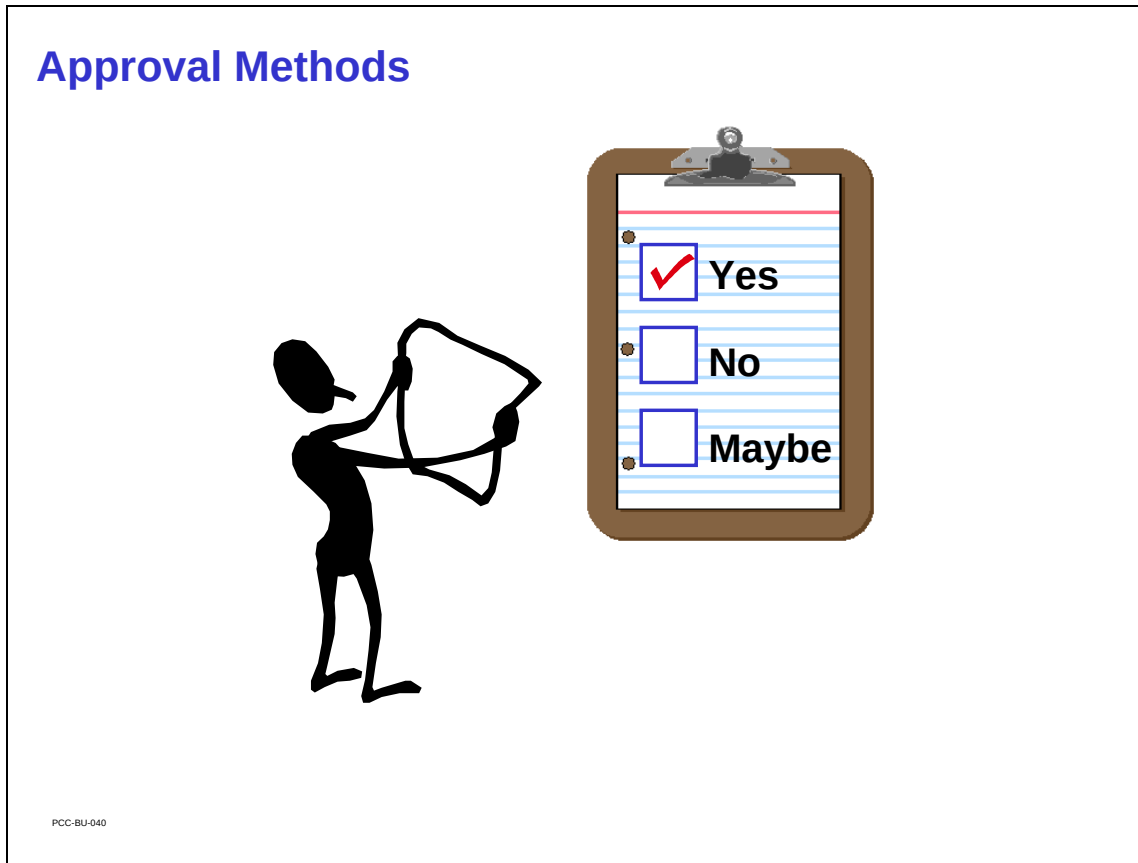
- Must set up users and security, approval groups, severity lists, and routing procedures



Discussed in the following Training Guide: Initial Setup, Product Structures



See in this training guide: *User Maintenance* on page 74, *Reason Codes Maintenance* on page 81, and *Group Maintenance* on page 87



Approval Methods

Definition

Who can approve a change and what types of conditional approval or rejection and rerouting are allowed

Why Consider?

- Can effect implementation time

Functionality in MFG/PRO

- E-mail distribution can streamline approval process
- Approval groups and security can control approval methods and access

Setup Implications

- E-mail systems must be setup
- User security and groups must be assigned



Discussed in the following Training Guide: Initial Setup



See in this training guide: *Set up E-mail* on page 77 and *Group Maintenance* on page 87



Inventory Management

Definition

Controlling obsolete and new items, product structures, and change implementation timing effects available inventory

Why Consider?

- Disposition for obsolete items
 - Scrap/Reject
 - Rework

- Cost of changes
- Existing Work Orders and Purchase Orders
- Implementation may be delayed to use up old items first

Functionality in MFG/PRO

- Mandatory implementation dates
- Cost Impact Report

Setup Implications

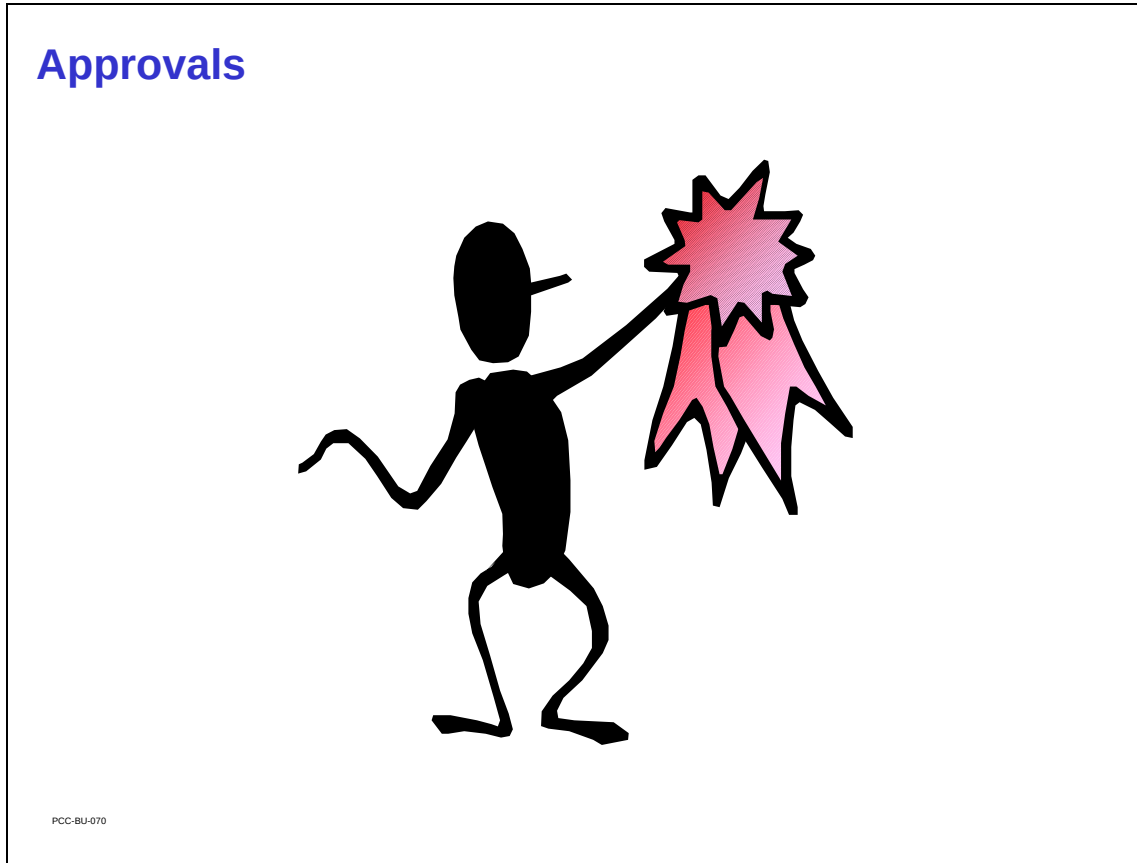
- Accurate effectivity dates



Discussed in the following Training Guide: Inventory Control



See in this training guide: *Enter Trailer* on page 162



Approvals

Definition

Assigning approval to proposed changes and allowing changes to enter MFG/PRO planning data and production data

Why Consider?

- Strict control of who can approve changes

Functionality in MFG/PRO

- Use PCR to evaluate change effects before converting to PCO
- Strict control of who belongs to approval groups

Setup Implications

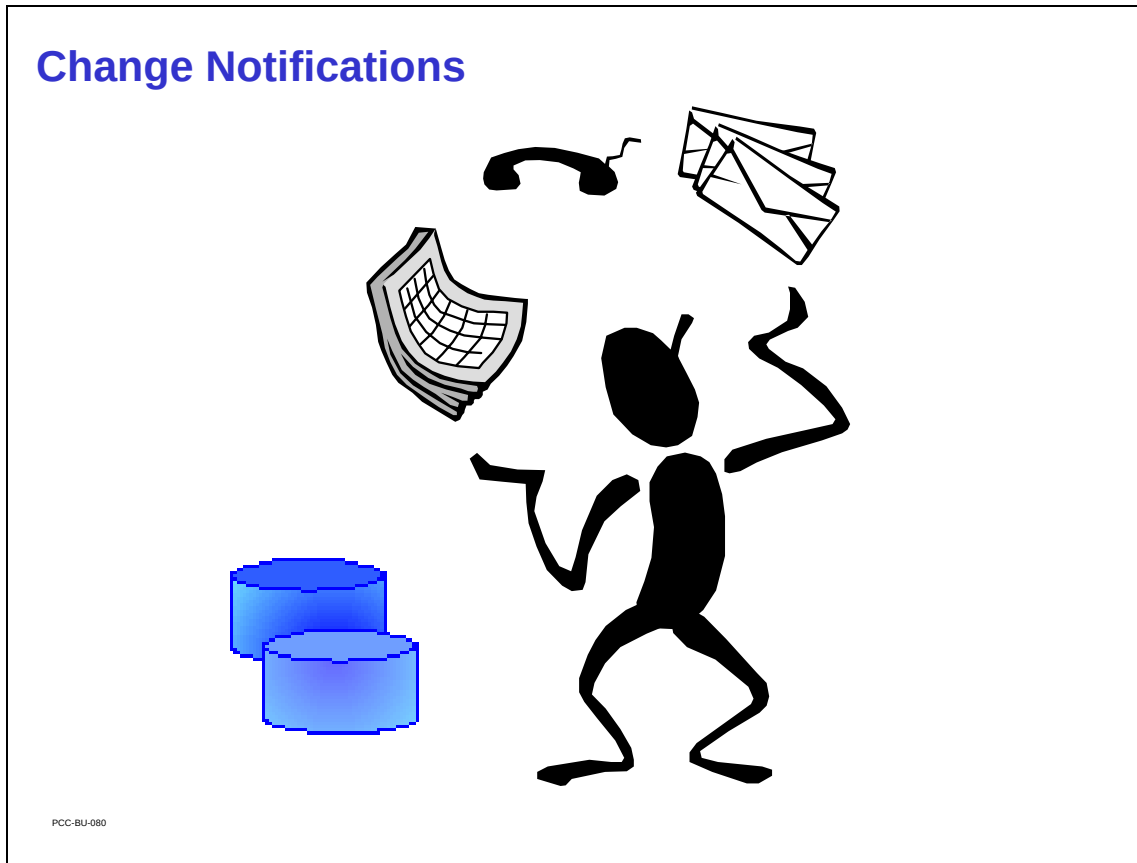
- Severity lists, groups, and routing setup



Discussed in the following Training Guide: Initial Setup



See in this training guide: *Create Groups* on page 86



Change Notifications

Definition

Announcing product changes have been submitted and/or approved

Why Consider?

- Various departments need to be prepared for product changes
 - Sales
 - Marketing
 - Production

- Finance
- Engineering
- Customers

Functionality in MFG/PRO

- Distribution Notification can be sent to non MFG/PRO users
 - Distributors, Field Reps, Resellers, Consultants

Setup Implications

- E-mail and groups setup



Discussed in the following Training Guide: Initial Setup



See in this training guide: *Set up E-mail* on page 76



Broad Contact Inclusion

Definition

Some product changes made need to be announced outside your company

Why Consider?

- May be a bigger change than just an internal decision

Functionality in MFG/PRO

- Distribution outside MFG/PRO users

Setup Implications

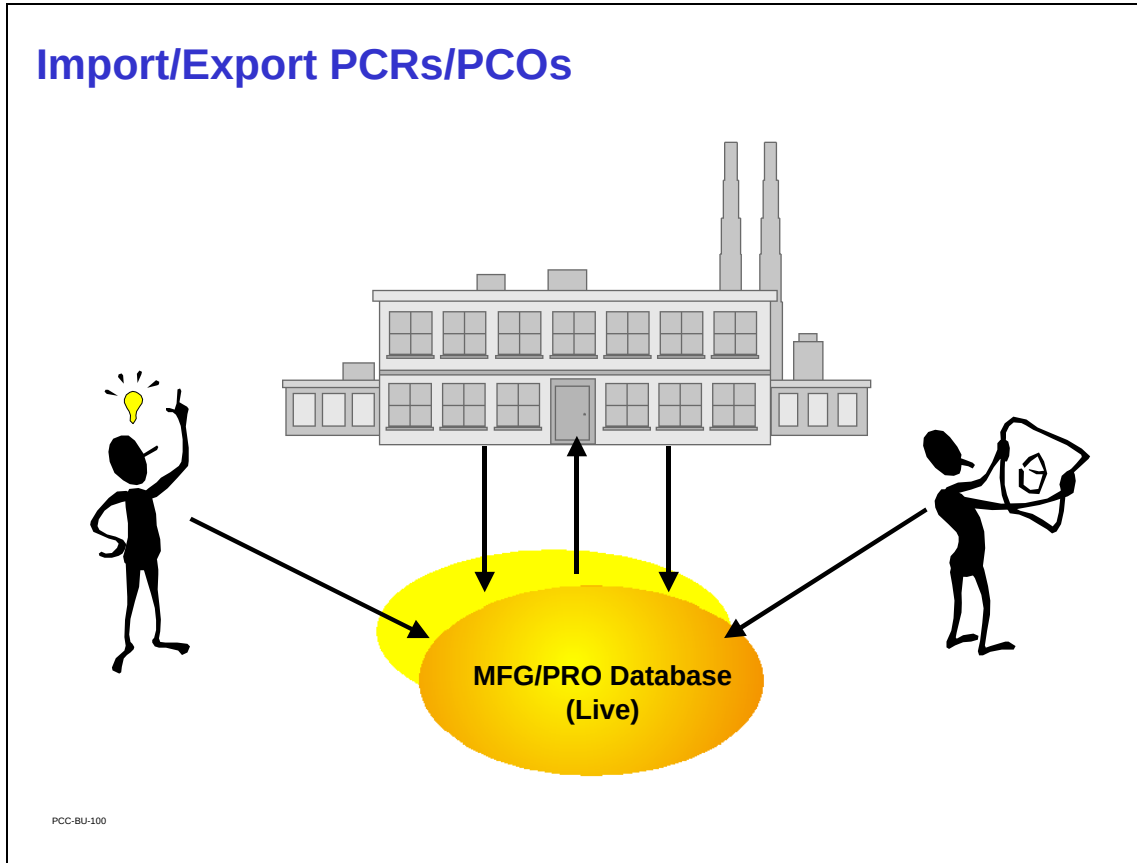
- E-mail and groups setup



Discussed in the following Training Guide: Initial Setup



See in this training guide: *Set up E-mail* on page 77 and *Group Maintenance* on page 87



Import/Export PCR/PCOs

Definition

Saving product change text to ASCII files for import into other databases, or importing restored archives

Why Consider?

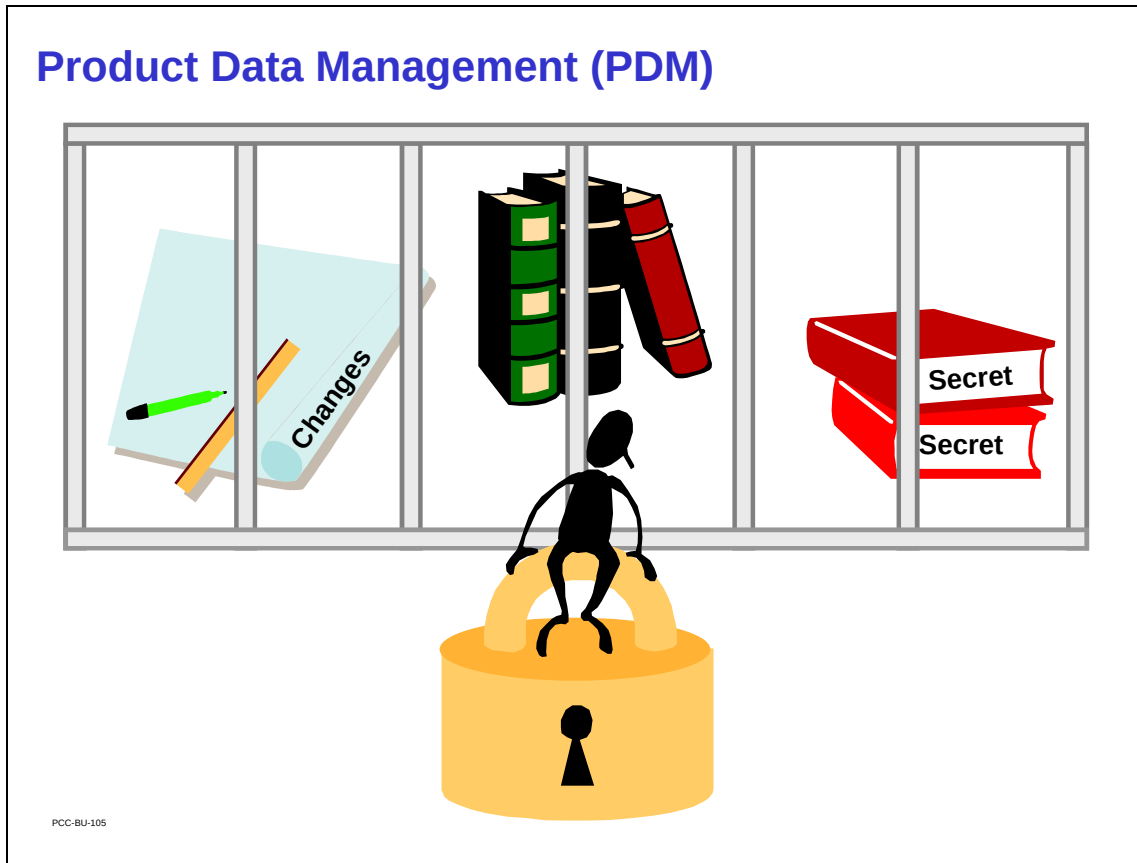
- Geographic separation of databases

Functionality in MFG/PRO

- ASCII file is easy to import into other programs
- Archival data remains accessible



See in this training guide: *Miscellaneous PCR/PCO Functions* on page 191



Product Data Management (PDM)

Definition

Strict internal control over access to documents and other product data

Why Consider?

- Confidentiality
- Trade secrets

Functionality in MFG/PRO

- Not part of the PCC module
- Import/export information to PDM programs

Focusing Exercise



PCC-BU-106

Focusing Exercise

Individually, or in small groups, examine your company, or a company your instructor suggests, against the business issues discussed in this chapter. Consider the following:

- 1 The business expectations given this type of company, and
- 2 Additional information you may need to elicit to successfully implement Product Change Control for this company.

Do not look ahead in this training guide or at the MFG/PRO software. The purpose of this exercise is to help you (and your group) focus on what is important to this company about Product Change Control. (Hint: There are no right or wrong answers.)

Your instructor may ask you to list your requirements on an easel or white board to make it easier to share your findings with the whole class.

After you have had a chance to brainstorm your requirements (15 to 20 minutes), your instructor may ask each group to quickly review its findings, and may compile a master list for your class.

Review

- ♦ Policies and Procedures
- ♦ Reporting Requirements
- ♦ Customer Expectations
- ♦ Product Configuration

PCC-BU-110



Course Overview

- ✓ Introduction to Product Change Control
- ✓ Business Considerations
 - ◆ Set up Product Change Control
 - ◆ Process Product Change Orders (PCOs)
 - ◆ Process Product Change Requests (PCRs)

PCC-BU-120

CHAPTER 3

Set Up Product Change Control



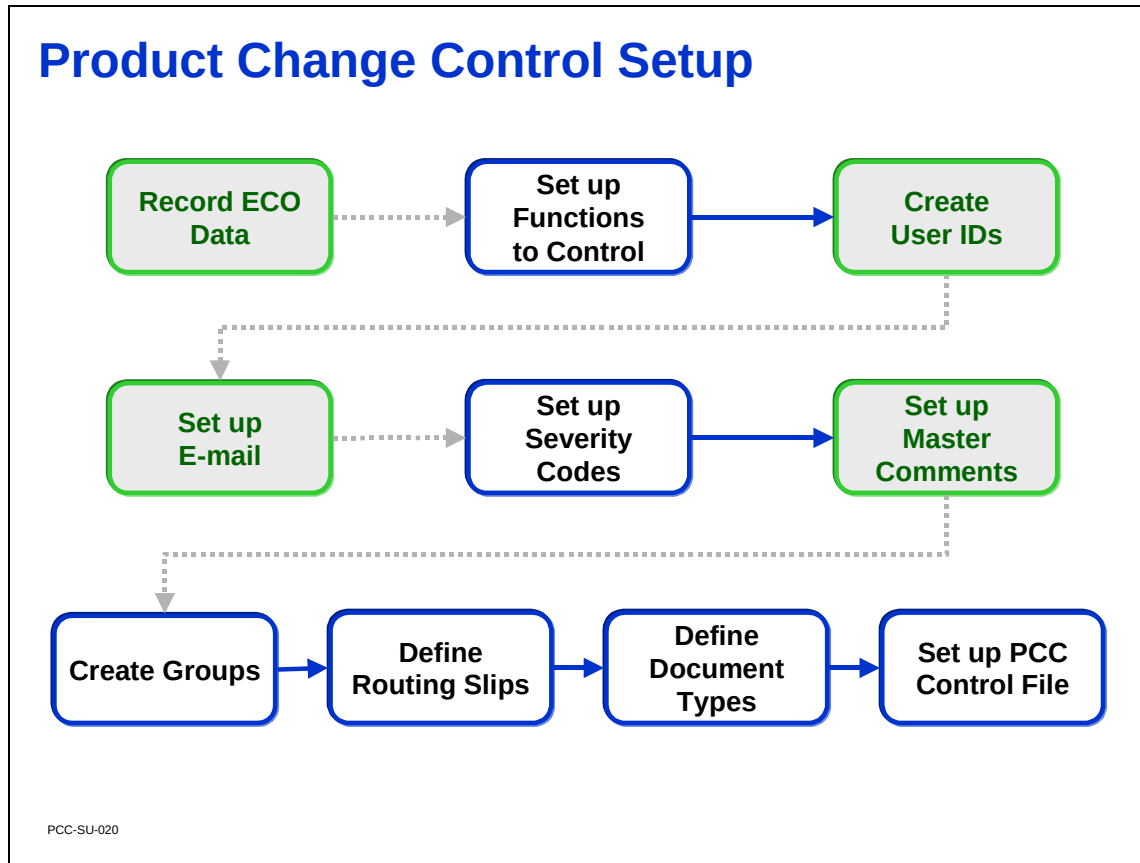


Set up Product Change Control

In this section you learn how to:

- ✓ Identify some key business issues you need to consider before setting up Product Change Control in MFG/PRO
- ✓ **Set up Product Change Control in MFG/PRO**
 - ♦ Process Product Change Orders (PCOs) in MFG/PRO
 - ♦ Process Product Change Requests (PCRs) in MFG/PRO

PCC-SU-010



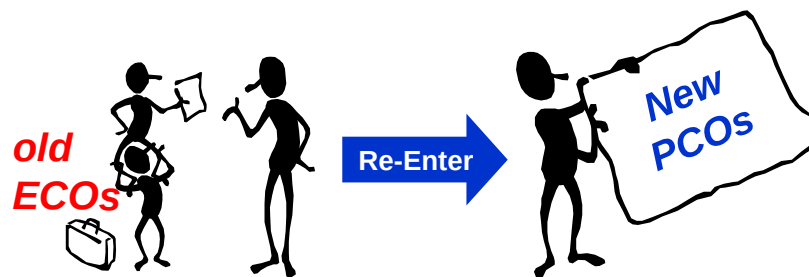
Product Change Control Setup

This illustration is a suggested setup sequence of master files for the Product Change Control module which is based on information that flows from one master file to another and prerequisites that need to be accomplished before setting up a file. Reading the illustration:

-  Boxes with solid lines are required for set up and are covered in this course
-  Shaded boxes reflect optional steps, but are covered in this course
-  Boxes with dotted lines are required, but are covered at length in another course

Prepare to Use PCC

- Changing to PCC permanently disables ECN module
- Need to re-enter old ECOs
- ECOs are not converted automatically
- Print all existing ECOs before enabling PCC



PCC-SU-030

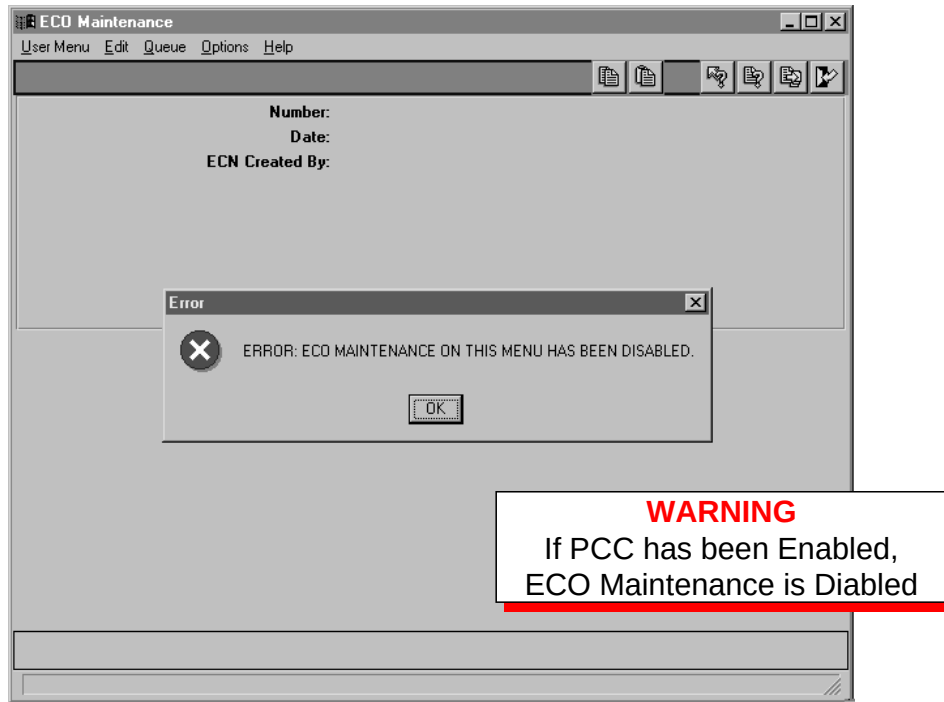
Prepare to Use PCC

- 1 If there are any existing Engineering Change Orders (ECOs) in the database:
 - Enter Engineering Change Notice (ECN) data manually into the PCC module
- 2 As you prepare to use PCC, remember that the major benefit your business gains is that changes are expressed at the data level for product structures and routings, so that MFG/PRO can execute your instructions.

For example, a typical PCO might say, “Release new part B and obsolete old part A.”

Effective upon release of the PCO, the product structure for C has been changed from 1 EA A to 1 EA B.

13.13.1 – ECO Maintenance

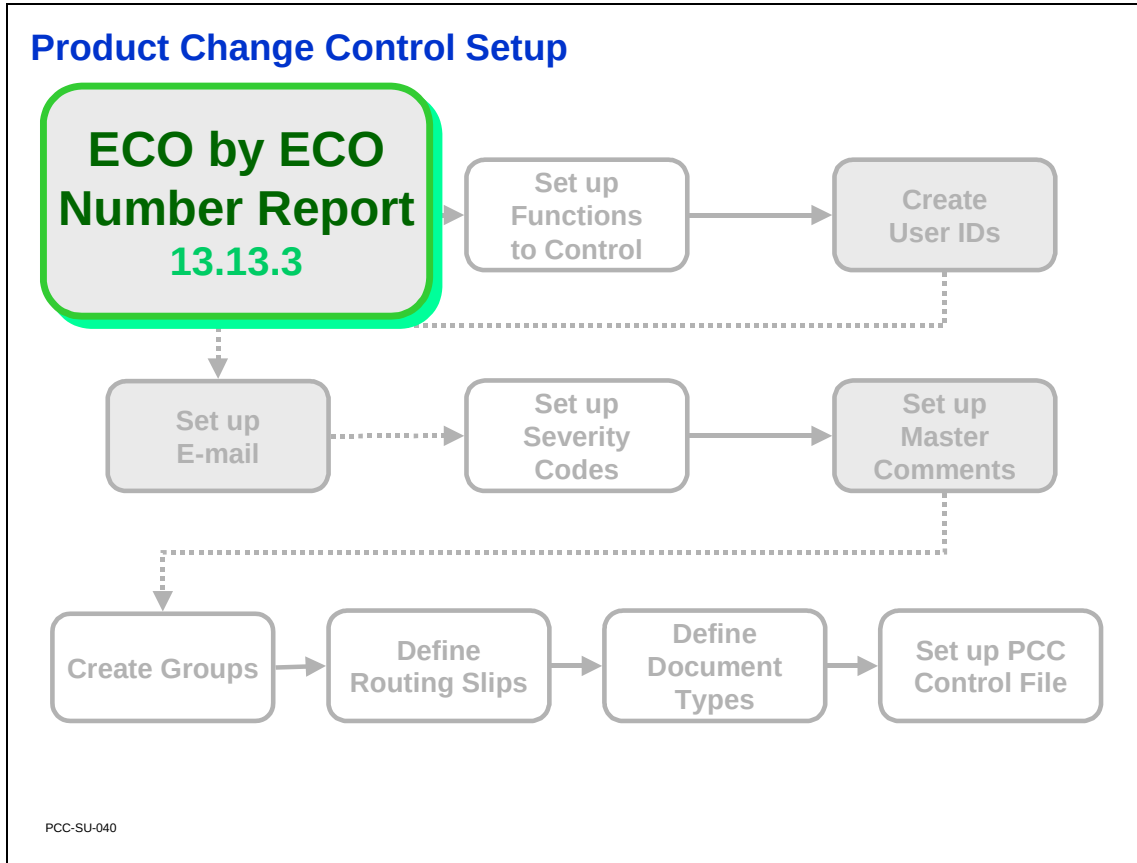


PCC-SU-035

ECO Maintenance

Menu Number 13.13.1

Warning Once PCC has been enabled, you can no longer access ECO Maintenance



Record ECO Data

- Enabling PCC is irreversible
- You must print existing ECO information for manual conversion to PCRs or PCOs

13.13.3 – ECO by ECO Number Report

Selection Criteria

ECO Number: To:

Item Number: To:

ECN Created By:

New Page Each ECO:

Print All Existing ECOs

Clear Print Exit

F1=Help F2=Go ESC=End Ctrl-X=Cut Ctrl-C=Copy Ctrl-V=Paste

Report - ECO by ECO Number Report

File Edit Search

bmcrcp.p 13.13.3 ECO by ECO Number Report Date: 11/05/98
 Page: 1 MFG/PRO Training DB - V86 Time: 13:56:00

Number: 1021 Description: NEW WELDING TECHNIQUE TO STRENGTHEN THE SHAFT CONNECTION
 Created By: KPH MODIFIED PRODUCTION INSTRUCTIONS
 Date: 05/15/89 UPDATED PART REVISION

Item Number	Description	UM Rev	Old	New	Start	End
03-0030	DISPLAY RACK	EA D	A	B	05/15/89	

F1=Help F2=Go ESC=End Ctrl-X=Cut Ctrl-C=Copy Ctrl-V=Paste

ECO by ECO Number Report

Menu Number 13.13.3

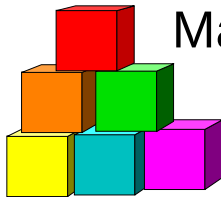
- Print all existing ECOs
- Keep the report to use as the basis for keying new PCOs



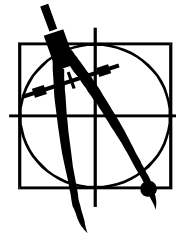
Exercise option: Continue with the material or go to *Set Up Addresses and Company Name* on page 108 and *Print Existing ECOs* on page 108

Set up PCC Functions to Control

- Different Maintenance Functions are Controlled Separately
 - Structure Maintenance (Disables ECO)
 - Routing Maintenance
 - Item (Quality) Spec Maintenance

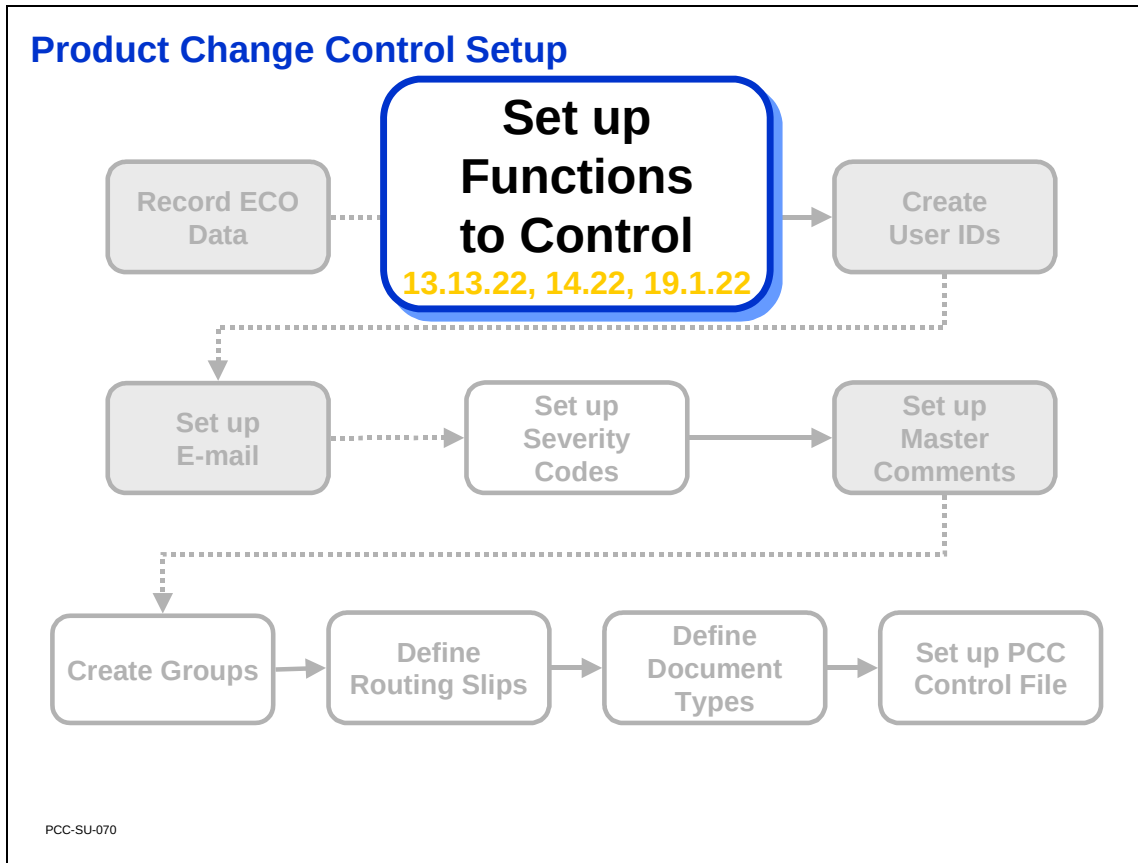


PCC-SU-060



Set up PCC Functions

- ECO is disabled by the PCC Structure Maintenance
- Different functions can be controlled
- Each function is activated separately

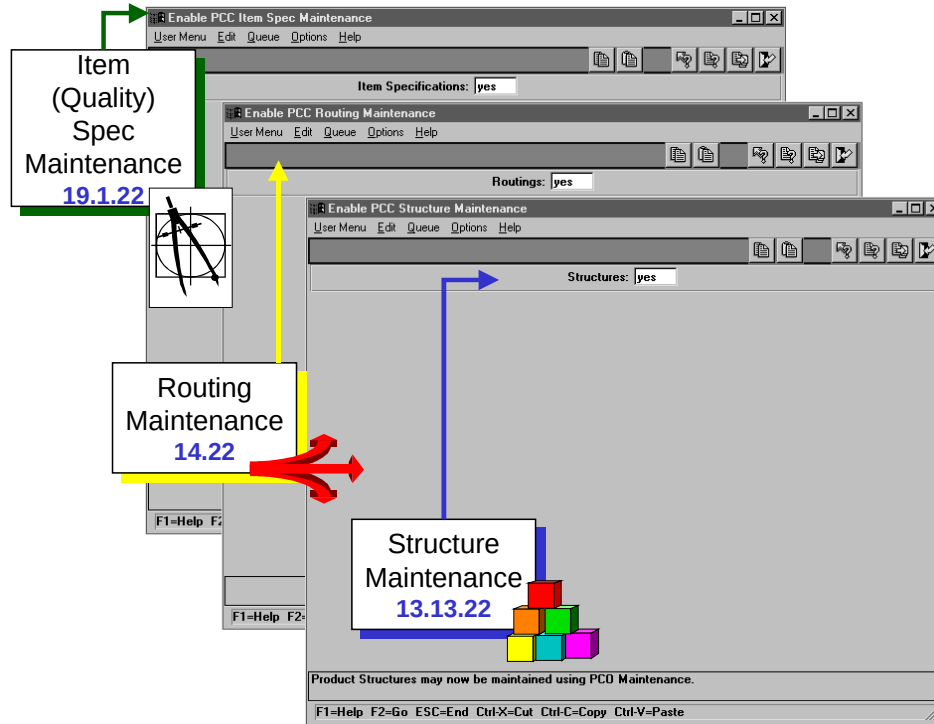


Set up Processes to Control

- We are covering three processes
 - Structure Maintenance
 - Routing Maintenance
 - Item Spec Maintenance

Note If your manufacturing process uses Formulas, you need to activate Formula Maintenance 15.22 to create PCRs or PCOs for formula changes.

Enable PCC Functions



PCC-SU-080

Product Structure Maintenance, Routing Maintenance, and Item Spec Maintenance

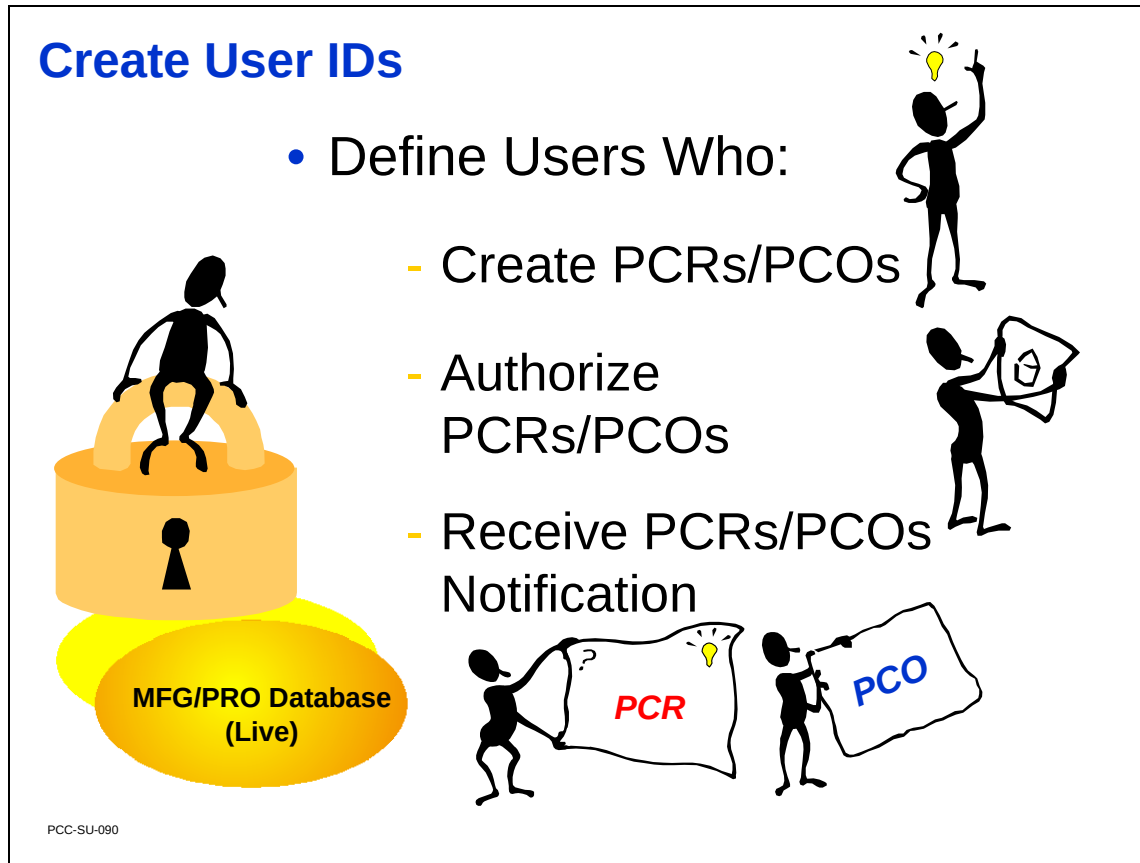
Menu Number 13.13.22, 14.22, and 19.1.22

- Each process is activated separately

Warning Enabling PCC makes changes to your database that cannot be reversed.

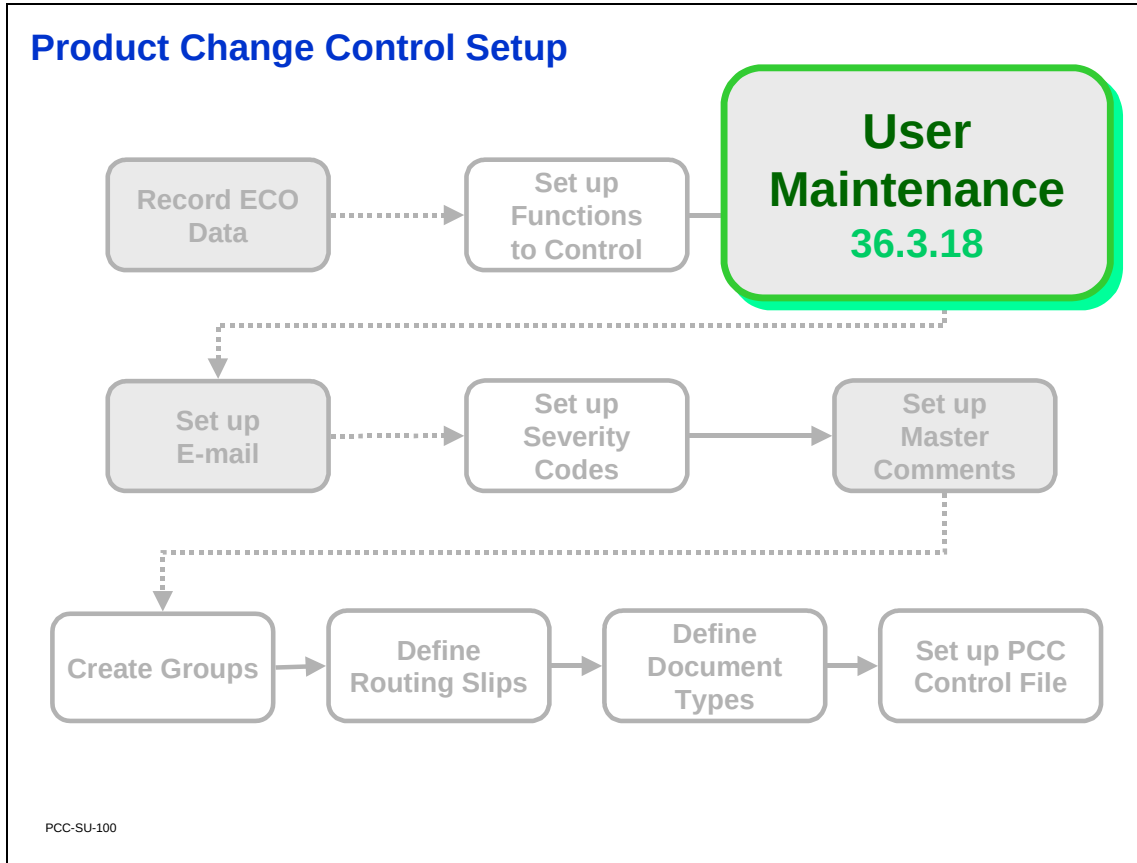


Exercise option: Continue with the material or go to *Set Up PCC Processes* on page 108



Create User IDs

- Different users in PCC groups can:
 - Create and maintain PCRs/PCOs
 - Authorize and approve (or reject) PCRs/PCOs
 - Receive notification regarding PCRs/PCOs
- Each member of a group must be defined as a user in MFG/PRO



User Maintenance

Menu Number 36.3.18

- Make changes to existing users
- Add new users

36.3.18 – User Maintenance

User Maintenance (1-User Master)

User Menu Edit Navigate Config Options Window Help

User Fields Browse Language **Profile** Password E-mail 1-User Master

User Id: instruct

Profile

User Name: Training Instructor

User Type

☒ Employee
☐ Customer

☐ Restricted

Groups

Add Remove

F1=Help F2=Go F9=Prev F10=Next F12=Save ESC=End.

PCC-SU-110

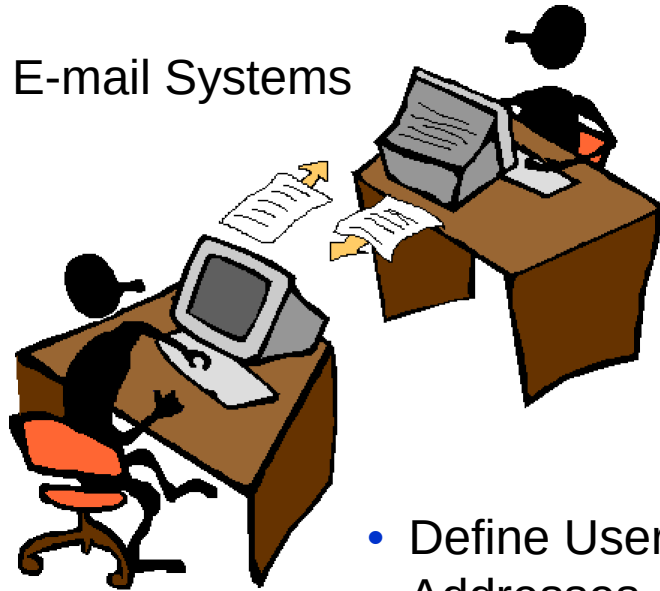
User Maintenance

Menu Number 36.3.18

- Assign User ID and User Name
- User Type and Restricted are reference only fields
- Groups will be added later

Set up E-mail

- Define E-mail Systems

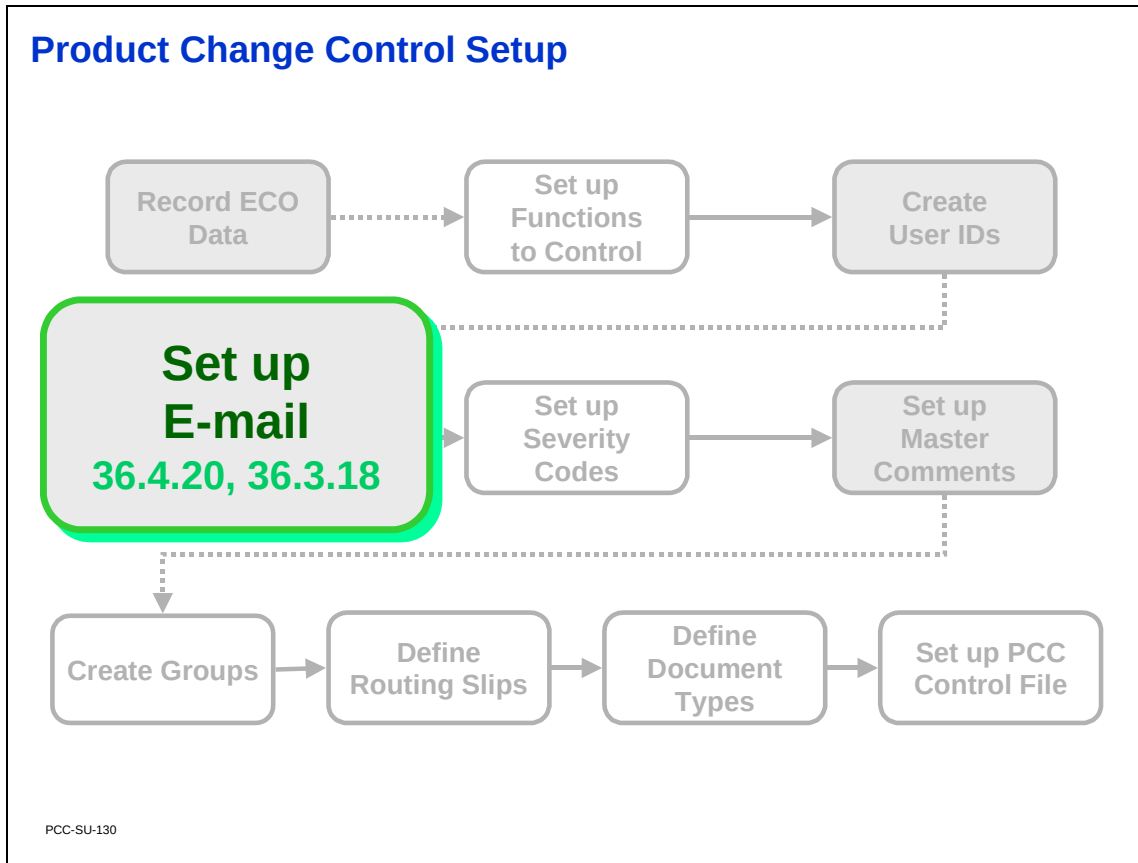


- Define Users' E-mail Addresses

PCC-SU-120

Set up E-mail

- Various reports in PCC can be routed via E-mail
- Very effective for PCC notification



Set up E-mail

- E-mail information is very system/implementation specific
- There are no default values for E-Mail Definition Maintenance 36.4.20
- After setting up all available e-mail systems, return to the User files to assign e-mail addresses

36.4.20 – E-mail Definition Maintenance

E-Mail Definition Maintenance

User Menu Edit Queue Options Help

E-mail Definition: Windows
 Operating System: WIN32
 Start Effective: End Effective:
 Description: Windows EMail
 Path and Program Name:
 C:\windows\apps\omgui\omgui.exe
 Command Line Parameters
 Sender: Sequence:
 Recipient: Sequence:
 Subject: Sequence:
 Message Text File: Sequence:
 Message Text String: Sequence:
 Start Effective: / /
 End Effective: / /
 E-Mail Command

Set up each available E-mail program

Adding new record.

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

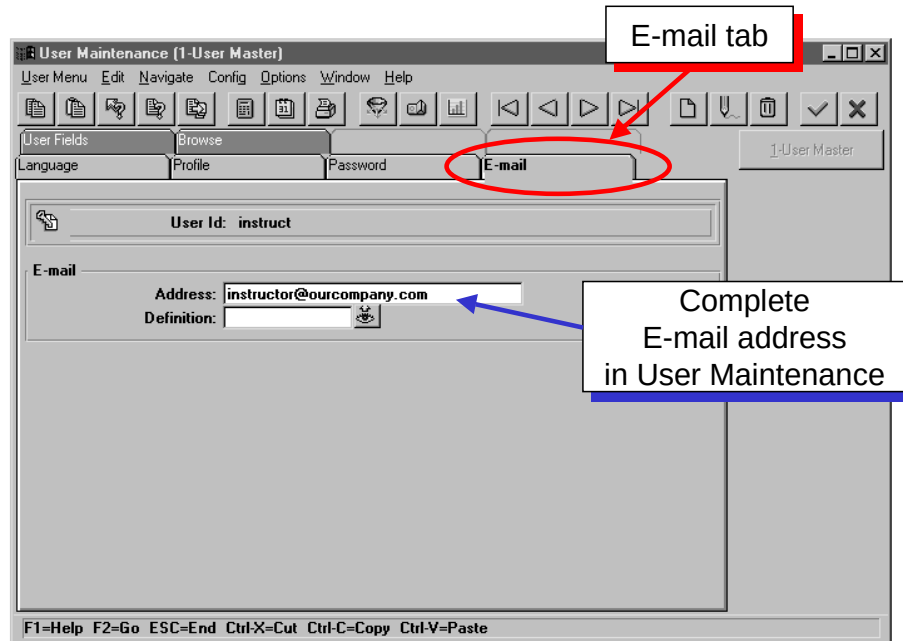
PCC-SU-140

E-Mail Definition Maintenance

Menu Number 36.4.20

- Name the system you are defining
- Choose your platform
- Assign the path and program name
- If more than one e-mail choice is available, assign additional systems
 - See your System Administrator

36.3.18 – User Maintenance



PCC-SU-150

User Maintenance

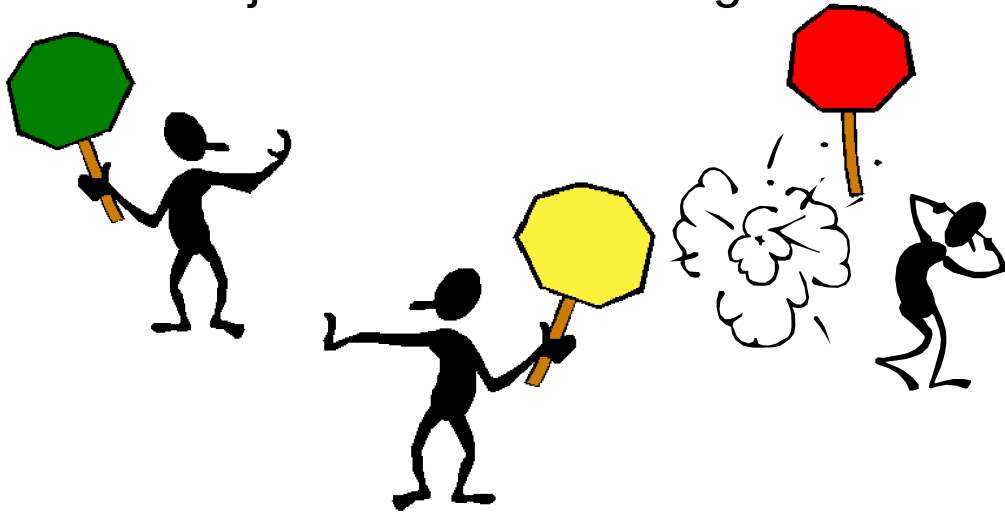
Menu Number 36.3.18

- Return to the User Maintenance screens to assign e-mail addresses
- Full addresses are required, including the domain name

Note Because e-mail systems are unique and must have exact information supplied in setup, there is no corresponding exercise for this procedure.

Set up Severity Codes

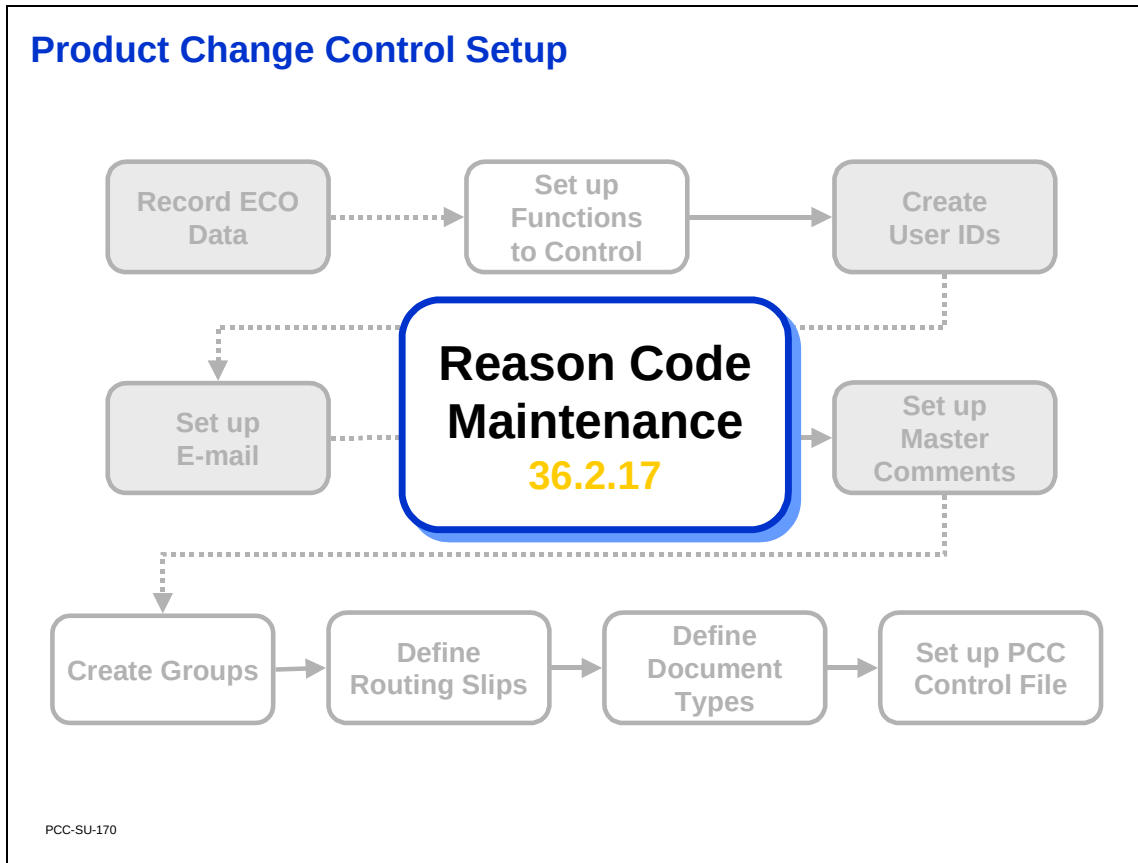
- Define Levels of Rejection for Rerouting



PCC-SU-160

Set up Severity Codes

- Severity codes define levels of rejection or conditional approval
- If re-routing is enabled, severity codes determine who needs to re-approve PCR/PCO



Reason Codes Maintenance

Menu Number 36.2.17

- Severity codes are assigned as Reason Codes
- If rerouting is enabled, severity codes must be numerical and hierarchical
 - Rerouting logic looks for greater than or equal to numeric values

36.2.17 – Reason Codes Maintenance

Reason Codes Maintenance (1-Reasons)

User Menu Edit Navigate Config Options Window Help

Description User Fields Browse

Reason Code: ELEC

Reason Type: REJECT

Description: ELECTRICAL MALFUNCTION

Reason Codes to Identify Severity of Rejection

F1=Help F2=Go F5=Delete F9=Prev F10=Next ESC=End F12=Edit.

PCC-SU-180

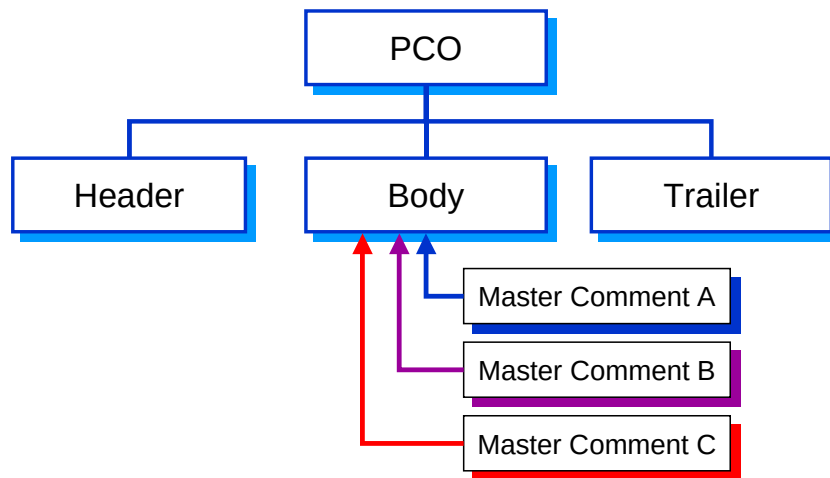
Reason Codes Maintenance

Menu Number 36.2.17

- Use numerical and hierarchal codes if you want to enable rerouting logic
- Assign the type
- Description field prints on displays and reports

Set up Master Comments

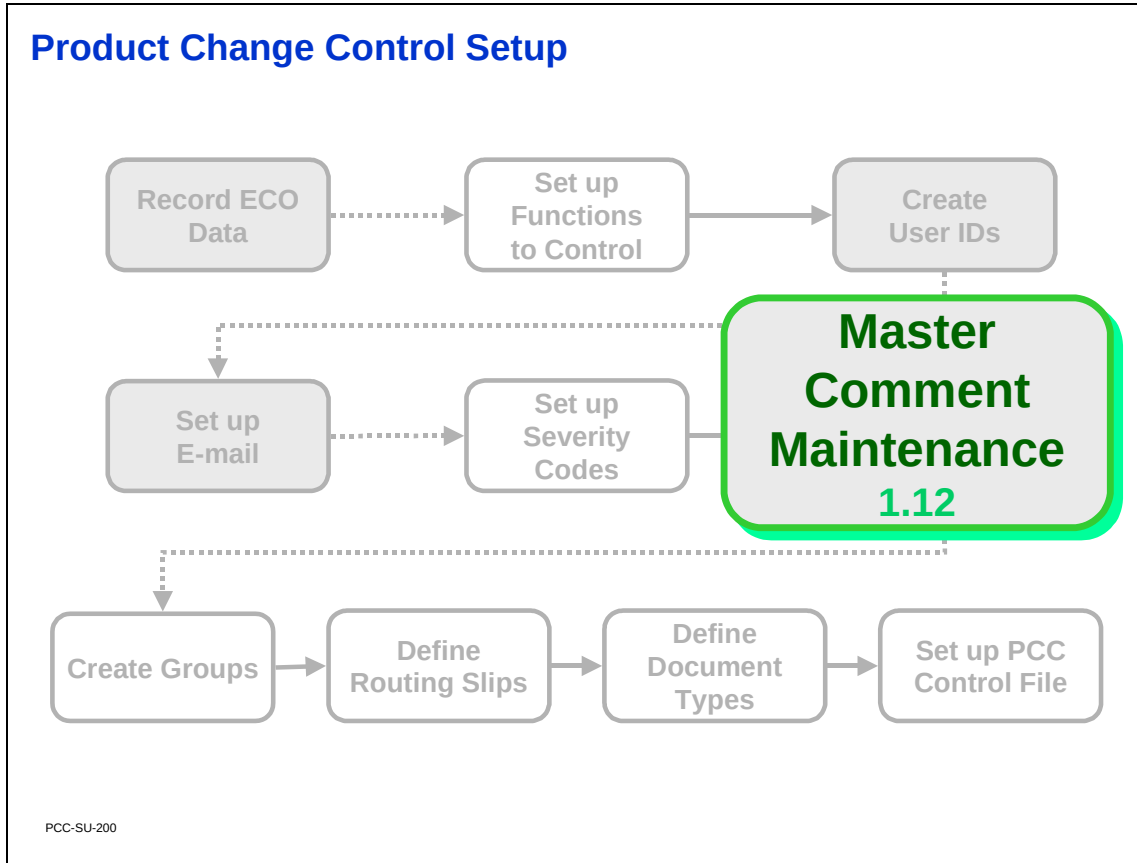
- Define Standard Comments for PCR/PCO Text File



PCC-SU-190

Set up Master Comments

- Standard comments are used to copy into the PCO body



Master Comment Maintenance

- Useful for:
 - Disclaimers
 - Policies
 - Checklists
 - Surveys
 - Standard Procedures
 - Disposition Forms

1.12 – Master Comment Maintenance

Master Comment Maintenance

User Menu Edit Queue Options Help

MASTER COMMENTS

Master Reference: @IMPLMNT: Language: us

Type: ke Page: 1

IMPLEMENTATION-ISSUES:

F1=Help F2=Go ESC=End *Next/Prev* Ctrl-X/C/V=Cut-Copy-Paste

PCC-SU-210

Master Comment Maintenance

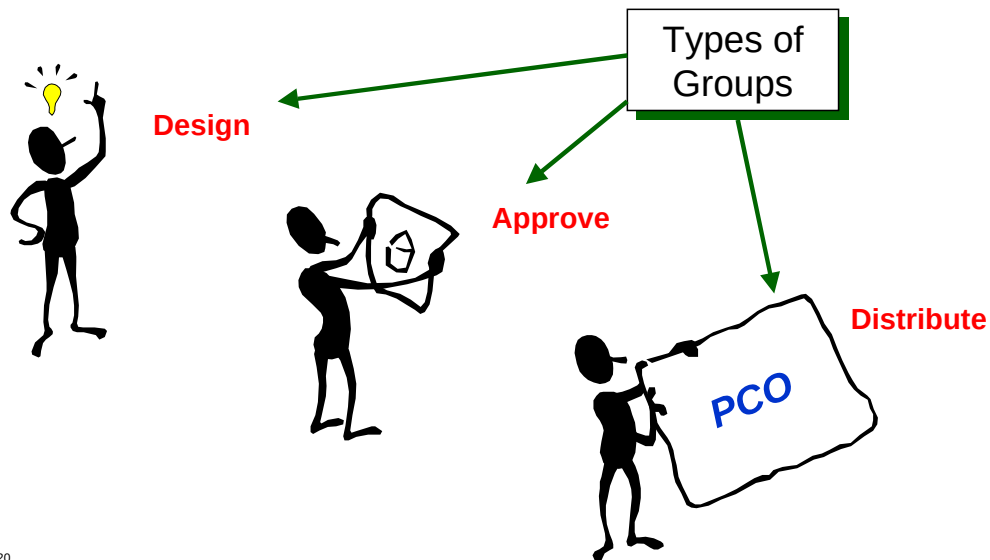
Menu Number 1.12

- Assign a reference for the comment
- Comment text can be up to 99 pages of free-form text, accessible by reference code, type, language, and page number
- Associate comments with entities by setting *Master Reference* equal to an item number or customer or supplier code

Note Comment text has no owner and therefore is not private.

Create Groups

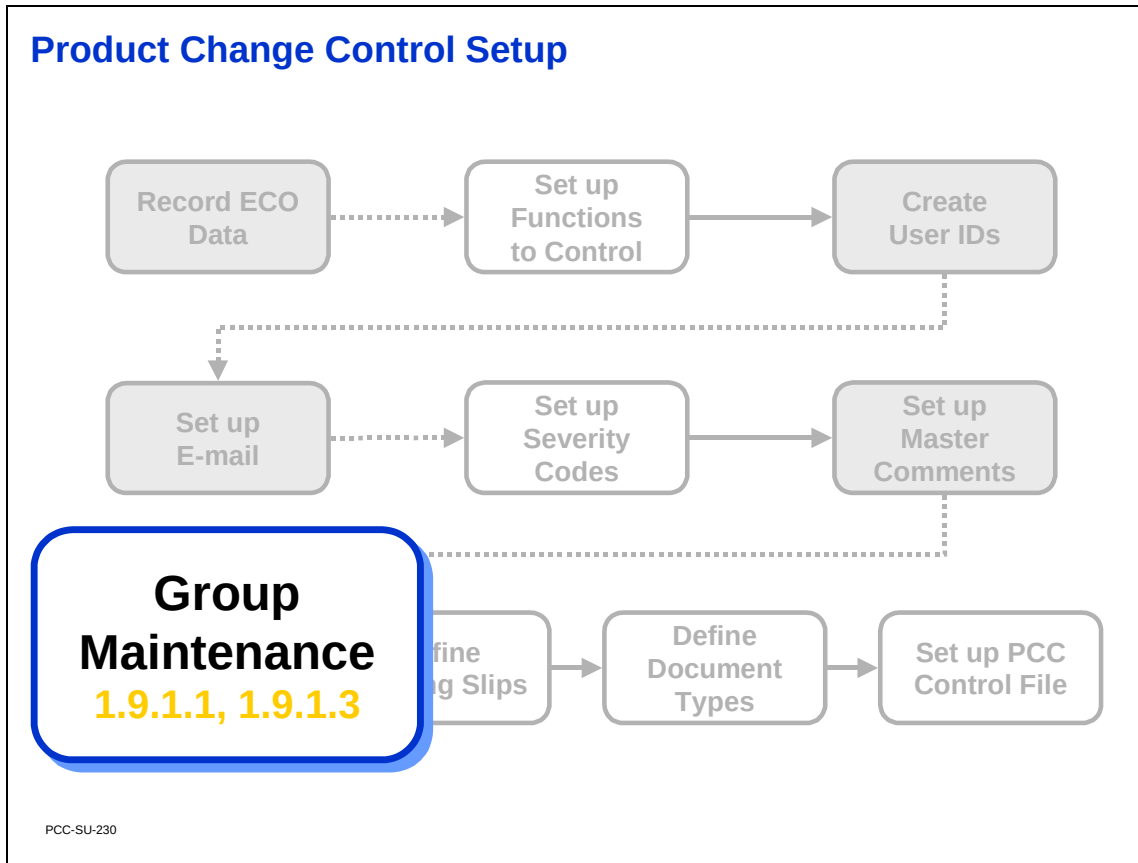
- Type Indicates in Which Part of PCR/PCO Process is Group Used



PCC-SU-220

Create Groups

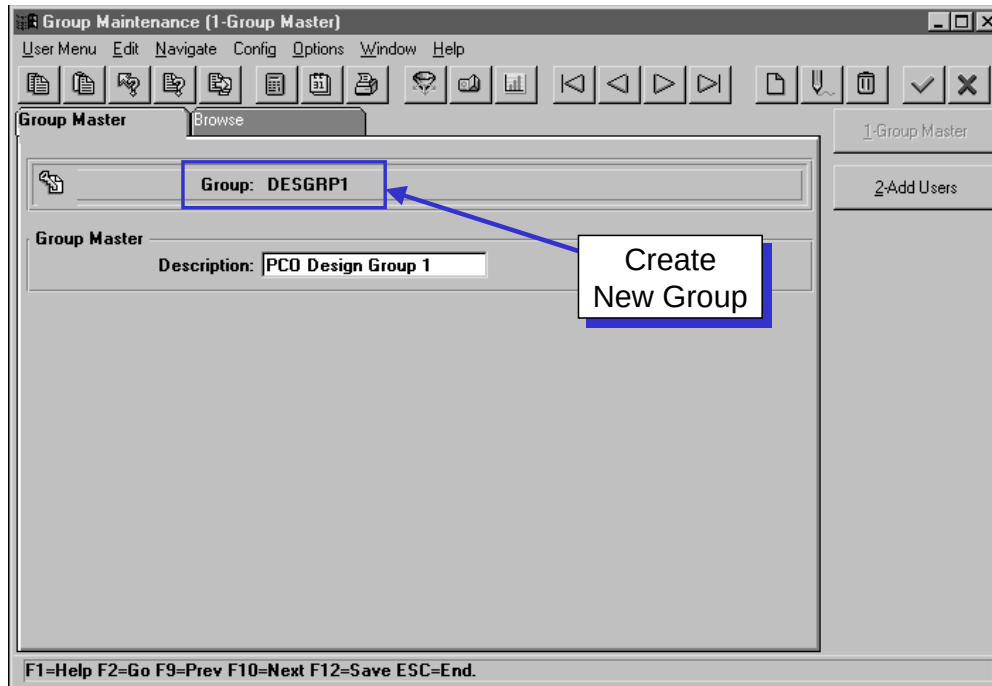
- MFG/PRO does not distinguish different types of groups
 - Type is how it is used, not how it is defined
 - Group names should reflect their type
- Users can be in more than one group, and more than one type of group



Group Maintenance

- Users added to groups must be previously defined in User Maintenance 36.3.18
- You can specify a date when user membership expires in a group
- You can also specify the number of copies of a PCR or PCO they should receive and the output device to be used
- Users may also receive e-mail messages, based on the routing slip attached to a PCO or PCR

1.9.1.1 – Group Maintenance



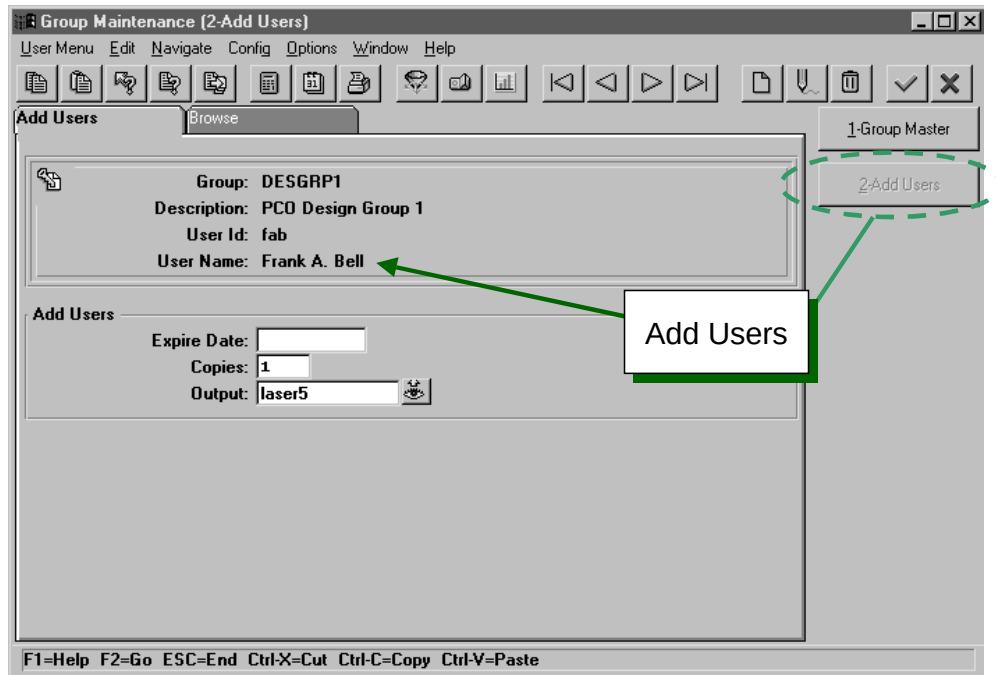
PCC-SU-240

Group Maintenance

Menu Number 1.9.1.1

- Specify a unique group name
- Give a brief description of how the group is used in PCC

1.9.1.1 – Group Maintenance



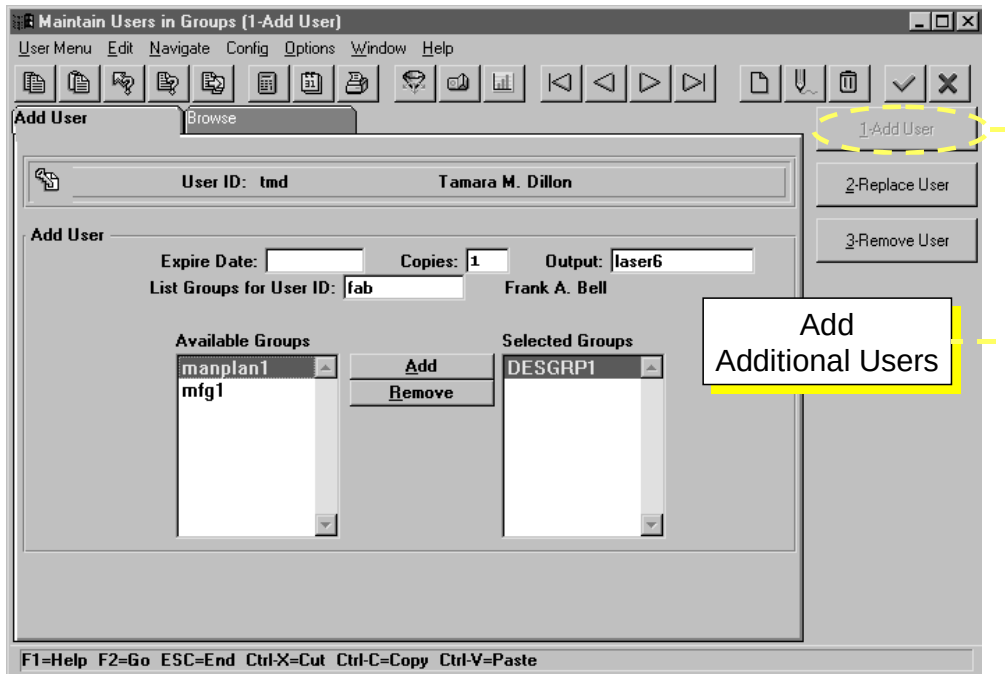
PCC-SU-250

Add Users

Menu Number 1.9.1.1

- Use the window button to advance to adding users
- Expire date is optional for assigning when group membership ends
- If copies is set = 0, the user receives only e-mail
- If copies is set = 1 or above, this assigns the number of printouts at the specified Output

1.9.1.3 – Maintain Users in Groups



PCC-SU-260

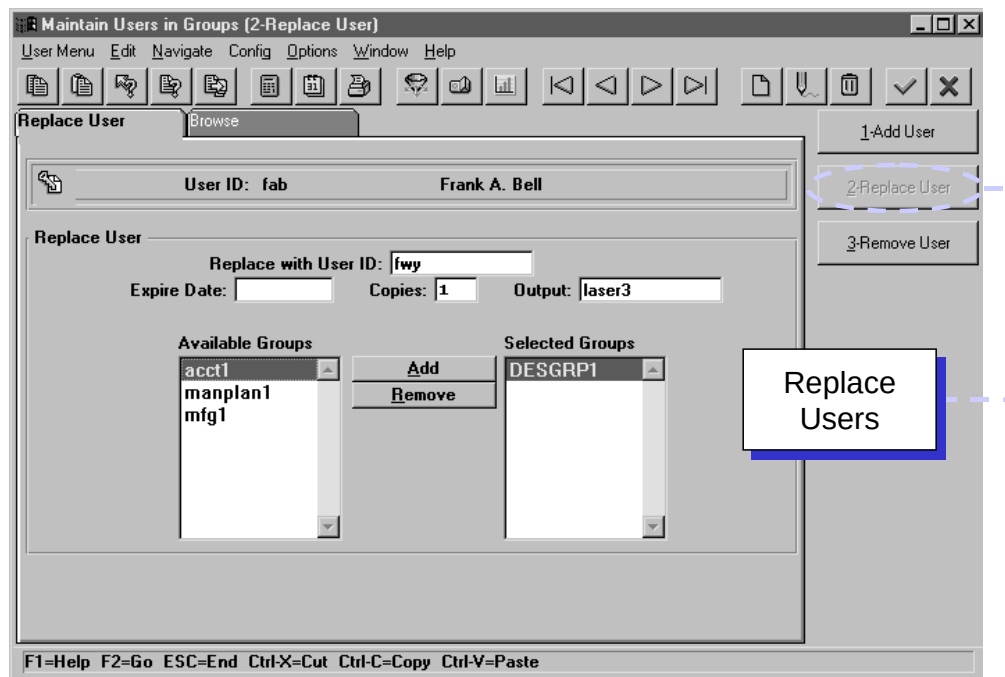
Maintain Users in Groups

Add Users

Menu Number 1.9.1.3

- Add new users
- Change user attributes
- Replace users
- Remove users
- Available groups shows PCC groups to which the user does not yet belong

1.9.1.3 – Maintain Users in Groups



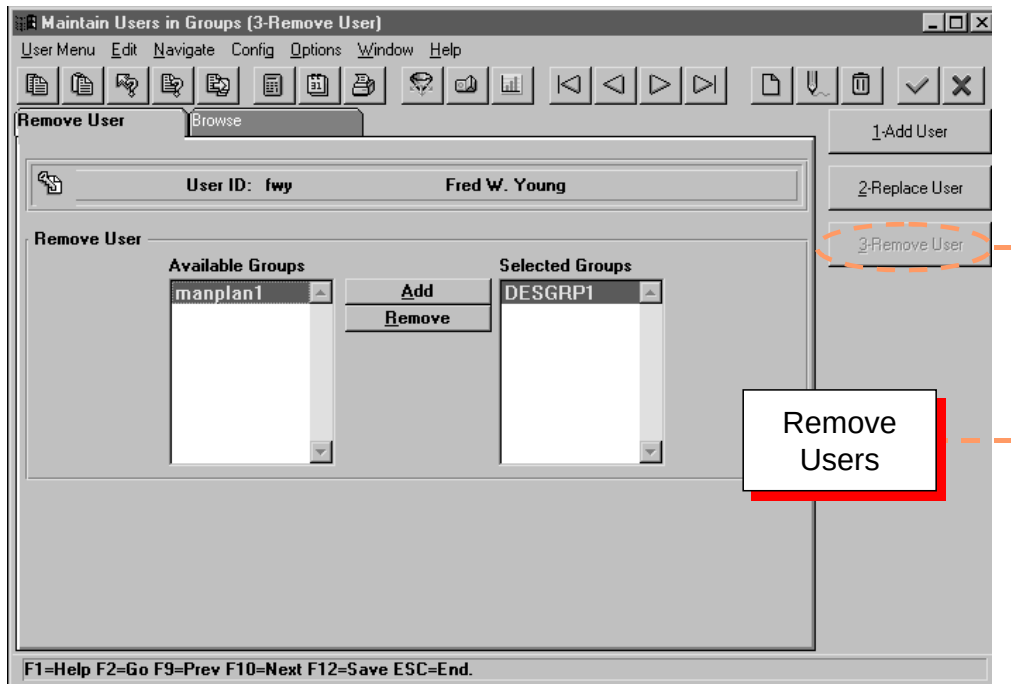
PCC-SU-270

Replace Users

Menu Number 1.9.1.3

- Works like adding users to groups
- Specify both the current user ID and the user ID of the person will replace them
- Update the replacing user's attributes and groups by specifying the same ID in both fields

1.9.1.3 – Maintain Users in Groups



PCC-SU-280

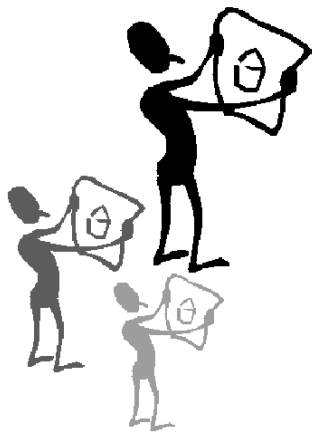
Remove Users

Menu Number 1.9.1.3

- Delete users from groups
- You must remove users from group membership if you plan to delete a user ID

Define Routing Slips

- Routing Slips Provide Basis for PCR/PCO Approval Process

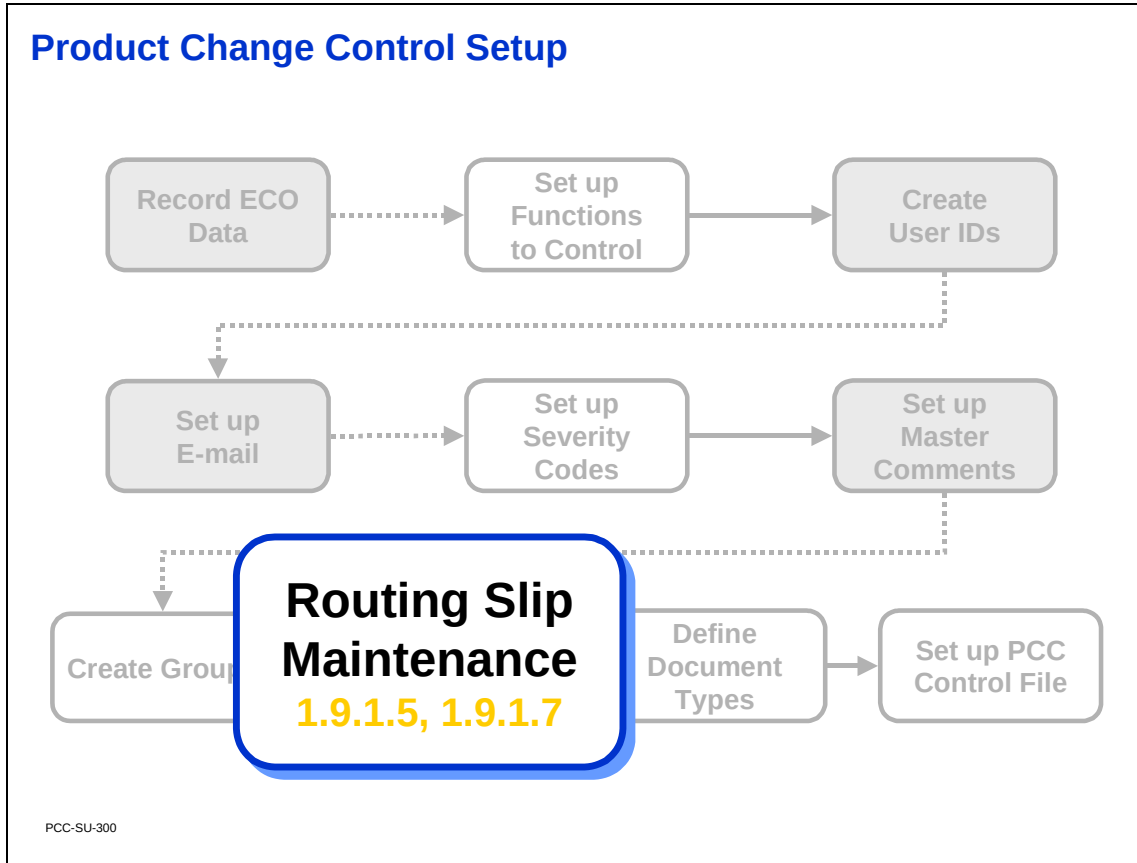


- Who Approves
- In What Order
- When Approved, Who is Notified

PCC-SU-290

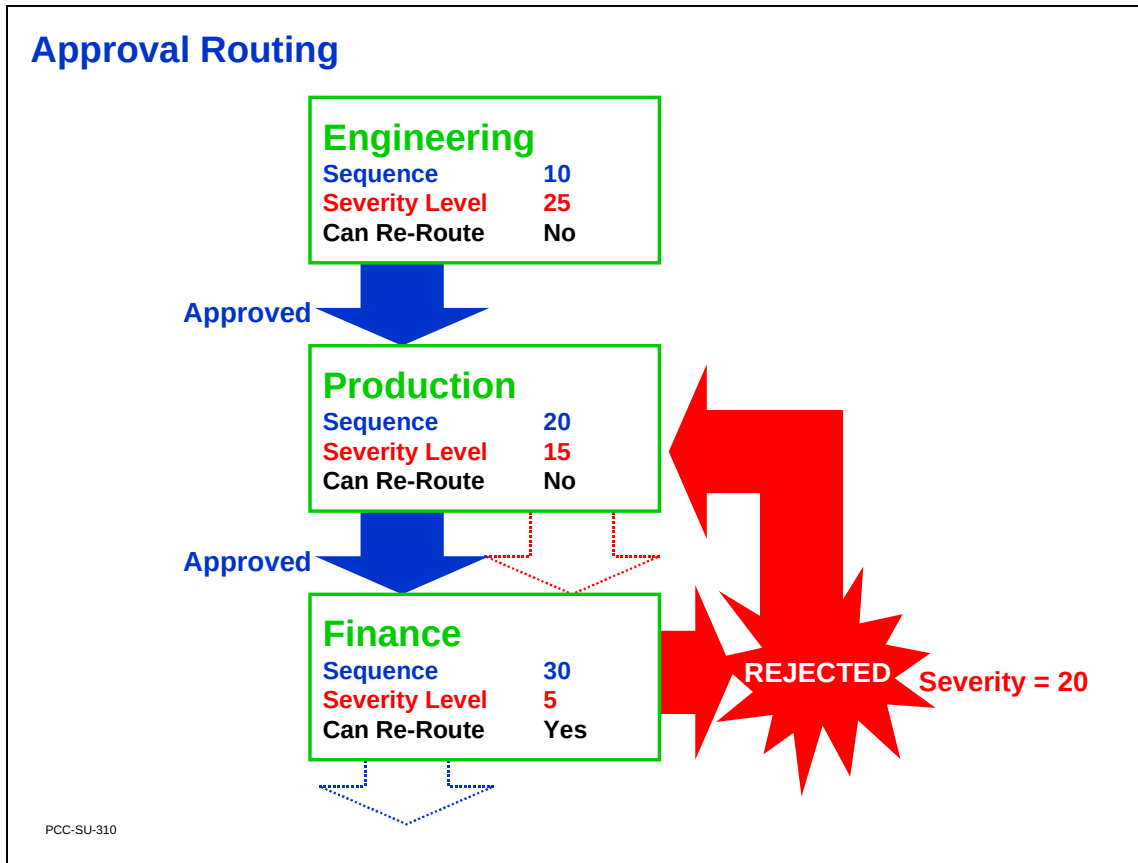
Define Routing Slips

- Identifies who needs to approve and who needs notification
- Routing details are PCC specific
- Provides a platform for obtaining ISO 9000 certification



Routing Slip Maintenance

- The same routing slip can be used for both PCOs and PCRs
- Create new routing slips in Routing Slip Maintenance 1.9.1.5
- Copy from existing slips to a new slip in Routing Slip Copy 1.9.1.7



Approval Routing

- *Sequence* indicates order of approval
 - Each group must have a different sequence number
- *Can Re-Route* indicates whether group can reroute PCR/PCO if rejected
- *Severity Level* determines whether a rejected/rerouted PCR/PCO is re-routed to this group
 - In our example, the Finance group assigned rerouting severity = 20
 - If the Severity is greater than or equal to the Severity Level assigned to a group, the group must reapprove
 - If the Severity had been 25, it would have rerouted to the Engineering group
- Rerouting is not related to approval sequence

1.9.1.5 – Routing Slip Maintenance

Routing Slip Maintenance (1-Routing Slip Maint)

User Menu Edit Navigate Config Options Window Help

Routing Slip Browse

Routing Slip: PCR_RT1

Routing Slip

Description: Basic Approval Routing

Severity List: REWORK

Users Notified at Submit:

Users E-mailed at Submit:

fab

Users Notified at Approval:

Users E-mailed at Approval:

fab

1-Routing Slip Maint

2-Detail Maint

Initial Setup

F1=Help F2=Go F9=Prev F10=Next F12=Save ESC=End.

PCC-SU-320

Routing Slip Maintenance

Menu Number 1.9.1.5

- Specify unique routing slip name and a short description
- Identify the name of the severity list (a Reason Code)
 - Should be numerical and hierarchical
- Assign users based on when they are involved in the process
- Users E-mailed are non-MFG/PRO users
- Check accuracy carefully because MFG/PRO cannot verify these addresses

1.9.1.5 – Routing Slip Maintenance

Routing Slip Maintenance (2-Detail Maint)

User Menu Edit Navigate Config Options Window Help

Detail Maint

Routing Slip: PCR_RT1
Group: DESGRP1
PCO Design Group 1

Detail Maint

Sequence: 1
Severity Level: 1

☒ Can Re-Route
☒ Notify When Next

1-Routing Slip Maint

2-Detail Maint

Detail Maintenance

F1=Help F2=Go F9=Prev F10=Next F12=Save ESC=End.

PCC-SU-330

Detail Maintenance

Menu Number 1.9.1.5

- *Sequence* specifies sign-off order
 - To provide for sequence additions, you may want to number 10, 20, 30, etc.
- *Severity Level* indicates at which level this group provides re-approval
 - The higher the value, the less likely the group will have to re-approve rejected PCRs/PCOs
- *Can Re-Route* streamlines reject/reroute process if set = Yes
 - If set = No, each rejected document must be reapproved by every group in the routing
- *Notify Next* sends notification to group members when they are next in the approval process

1.9.1.7 – Routing Slip Copy

Routing Slip Copy (1-Routing Slip)

User Menu Edit Navigate Config Options Window Help

Routing Slip Copy Browse

Copy Routing Slip: PCR_RT1 To: PC0_RT1

Routing Slip Copy

Description: Basic Approval Routing

Severity List: REWORK

Users Notified at Submit:

Users E-mailed at Submit:

fab

Users Notified at Approval:

Users E-mailed at Approval:

fab

Copy Routing Slip

1-Routing Slip

F1=Help F2=Go F9=Prev F10=Next F12=Save ESC=End.

PCC-SU-340

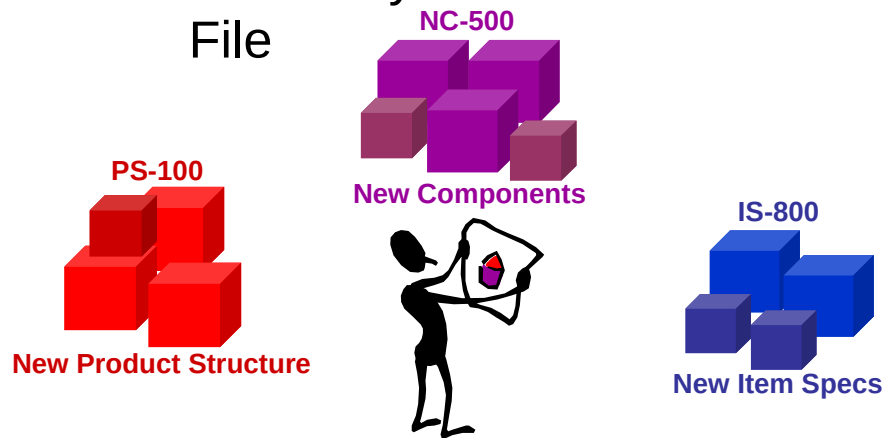
Routing Slip Copy

Menu Number 1.9.1.7

- Allows you to create a new routing slip based on a previously created one
- Lists of users notified at submission and approval are copied
- Copy function will query if you want to copy routing detail
- Further editing is done in Routing Slip Maintenance 1.9.1.5 (see page 96)

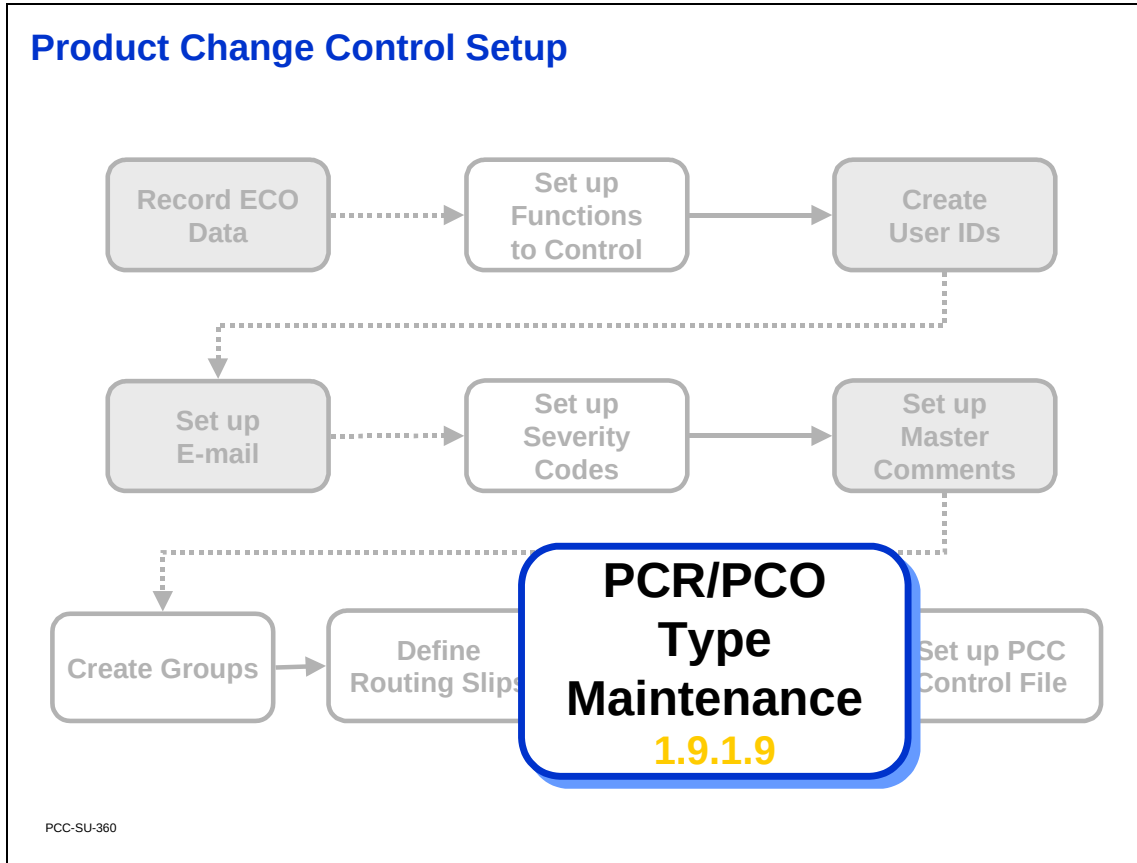
Define Documents

- Set up Different PCR/PCO Document Types
 - Each can be numbered differently in PCC Control File



Define Documents

- Valid document types are selected when creating a new PCR/PCO



PCR/PCO Type Maintenance

- Change types involve careful planning:
 - Should document be PCR or PCO?
 - Type of routing slip?
 - Distribution group?
 - Prefix and number for this document?

1.9.1.9 – PCR/PCO Type Maintenance

PCR/PCO Type Maintenance

User Menu Edit Queue Options Help

Type: PCOTYPE1
Design Group: DESGRP1

Description: Basic Change Order
Document Type: PCO
Prefix: PCO
Routing Slip: PCO_RT1
Distribution: DESGRP1

Define Documents

Adding new record.

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

PCC-SU-370

PCR/PCO Type Maintenance

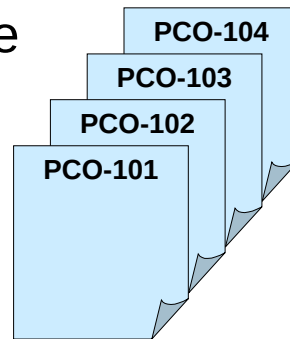
Menu Number 1.9.1.9

- Assign a unique type to new document
- Assign *Design Group* authorized to make changes to this document type
- Select whether this document is a PCR or a PCO
- *Prefix* is also assigned in PCC Control File 1.9.24 for autonumbering
 - Warning message will notify you if the prefix is not in the control file yet
- Assign an existing routing slip to use with this document
- *Distribution* group selected will be notified when these are Released and Distributed

Set up PCC Control File

- Settings are for both PCOs and PCRs

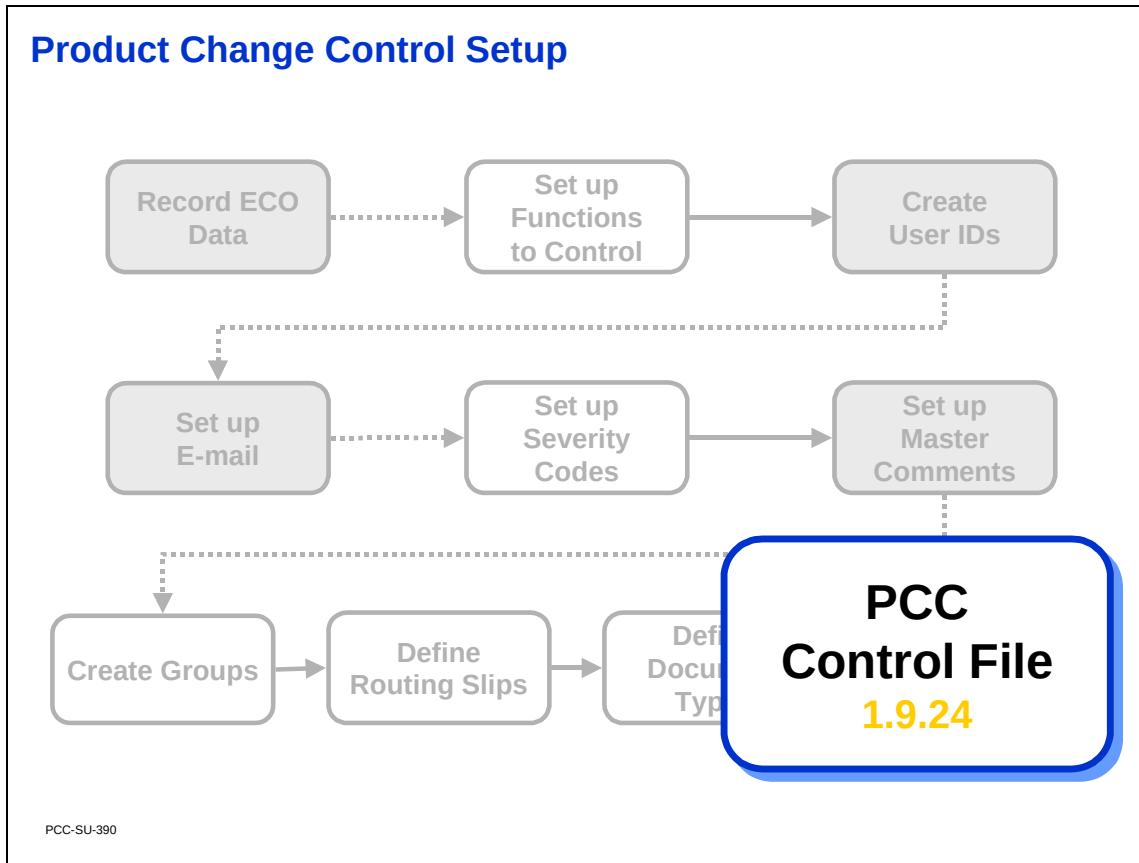
- Select and Define Security
- Select and Define Aut numbering



PCC-SU-380

Set up PCC Control File

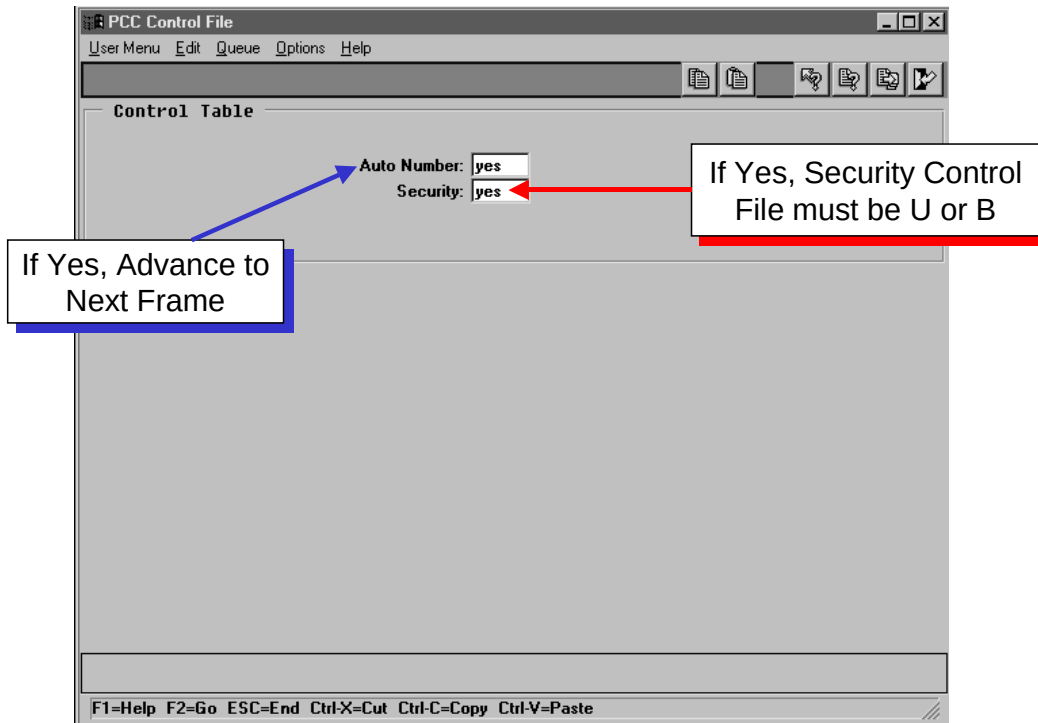
- Security has the option to check user IDs during approval
- Aut numbering can generate document numbers for PCR/PCO documents
 - Manual override of these numbers is still available



PCC Control File

- Numbering
- Security
- Groups
 - Design groups to create/maintain PCRs/PCOs
 - Approval groups to sign off on PCRs/PCOs
 - Distribution groups to notify when PCO is released
- Routing slips for approvals
- Document types

1.9.24 – PCC Control File



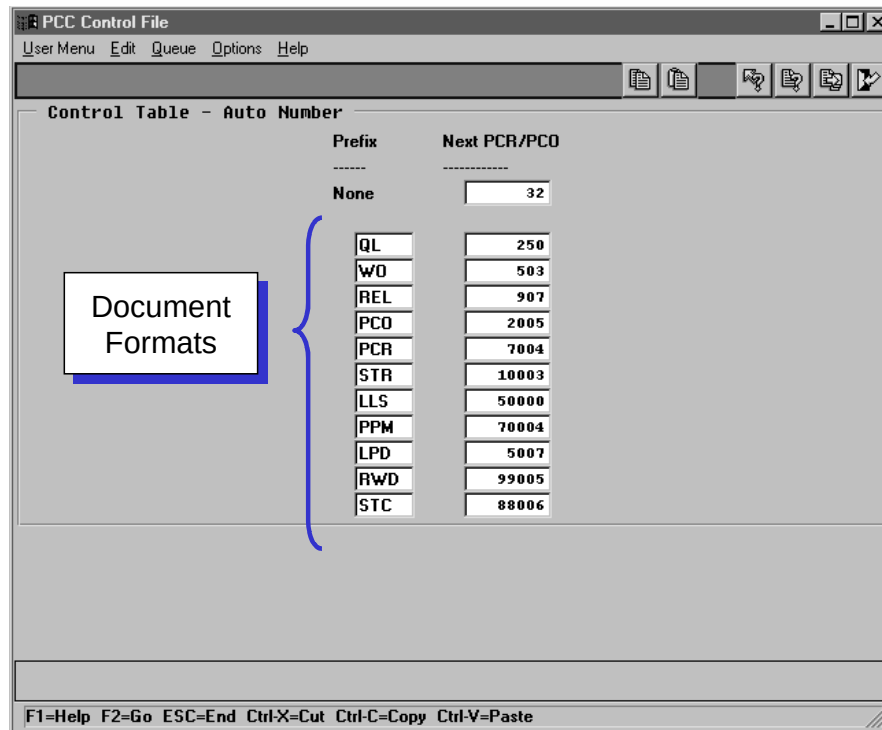
PCC-SU-400

PCC Control File

Menu Number 1.9.24

- If you require PCC to verify user IDs during PCC approval, you must also set Security Control File 36.3.24 to type U or B
 - P is not sufficient

1.9.24 – PCC Control File



The screenshot shows the 'PCC Control File' window with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area is titled 'Control Table - Auto Number' and contains a table with two columns: 'Prefix' and 'Next PCR/PCO'. The 'Prefix' column lists 'None', 'QL', 'WO', 'REL', 'PCO', 'PCR', 'STR', 'LLS', 'PPM', 'LPD', 'RWD', and 'STC'. The 'Next PCR/PCO' column lists corresponding values: '32', '250', '503', '907', '2005', '7004', '10003', '50000', '70004', '5007', '99005', and '88006'. A blue box labeled 'Document Formats' is positioned to the left of the prefix list, with a blue bracket indicating its association with the prefixes.

Prefix	Next PCR/PCO
None	32
QL	250
WO	503
REL	907
PCO	2005
PCR	7004
STR	10003
LLS	50000
PPM	70004
LPD	5007
RWD	99005
STC	88006

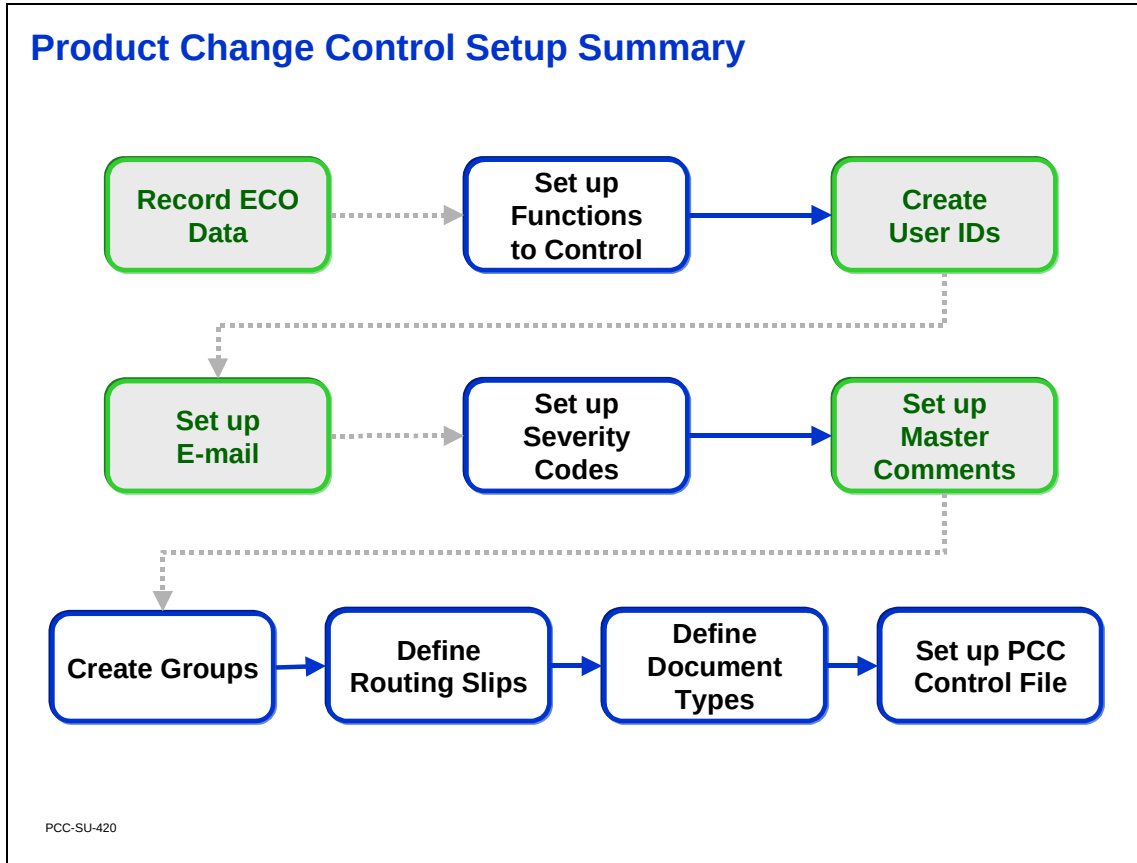
Document Formats

F1=Help F2=Go ESC=End Ctrl-X=Cut Ctrl-C=Copy Ctrl-V=Paste

PCC-SU-410

Menu Number 1.9.24

- Prefixes are limited to three characters
- Prefixes correspond to existing Document Types



Summary of Product Change Control Setup

Setup Exercises



PCC-SU-430

Setup Exercises

Important The data used in these exercises may not be the same as the data shown in the screen captures in this lesson.

Set Up Addresses and Company Name

Instructions: In this exercise, customize the screens and reports to show your company name.

- 1 The company address for Quality Products Inc., Company ID = 10000, has already been entered into the system. Personalize your database by replacing the Quality Products company name with your name in address code 10000.
- 2 Enter your name under the Address codes ~reports and ~screens. This causes your name to be displayed on the top of all reports and at the top of all the menu screens.

Note Menu screen changes may not take effect until reentering MFG/PRO.

Use: Company Address Maintenance 2.12

Print Existing ECOs

Instructions: In this exercise you print the existing ECOs before enabling PCC.

- 1 In an environment where you have ECOs, print the ECO by ECO Report. In a live database you would use this report to create new PCOs later. For the purposes of these exercises you can print to WINDOW.

Use: ECO by ECO Number Report 13.13.3

Set Up PCC Processes

Instructions: In this exercise you ensure that PCC is enabled for several processes.

- 1 Enable PCC Product Structure Maintenance.
Use: Enable PCC Product Structure Maintenance 13.13.22
- 2 Enable PCC Routing Maintenance.
Use: Enable PCC Routing Maintenance 14.22
- 3 Enable PCC Item Spec Maintenance.
Use: Enable PCC Item Spec Maintenance 19.1.22

Instructions: Formula and Process changes are optional exercises. However, you must enable Formula Maintenance for PCC if you plan to do any of the optional formula or processing exercises in this training guide.

4 Enable PCC Formula Maintenance, for both Formulas and Processes.

Use: Enable PCC Formula Maintenance 15.22

Set Up a Cost Center

Instructions: Set up a Cost Center for Magic Box in the General Ledger.

Cost Ctr: 12
Description: Magic Box
Active: Yes
From Account: 1035
To Account: 9510

Use: Cost Center Code Maintenance 25.3.20

Set Up Inventory Data

Instructions: Set up the following inventory status code:

Status Code: OI-NO
Available: Yes
Nettable: Yes
Overissue: No

Use: Inventory Status Code Maintenance 1.1.1

Instructions: Set up the following product line information:

Product Line: 12
Description: Magic Box
Taxable: No
Tax Class: Blank

Inventory Accounts

Inventory Acct:	1500	12
Inv Discrep Acct:	5900	12
Scrap Acct:	5800	12
Work in Process Acct:	1600	12
Method Variance Acct:	6200	12
Cost Revalue Acct:	1550	12

Sales Accounts

Sales Acct:	3000	12
Sales Disc Acct:	3900	12
COGS Material Acct:	5050	12
COGS Labor Acct:	6860	12
COGS Burden Acct:	6480	12
COGS Overhead Acct:	6495	12
COGS Subcontract Acct:	5070	12

Use: Product Line Maintenance 1.2.1

Set Up Item Status Codes

Instructions: Enter the following restricted transactions for item status code Proto:

Item Status:	Proto
Description:	Prototype
Restricted Transactions	
ADD-SO	
ISS-DO	
ISS-SO	

Use: Item Status Code Maintenance 1.1.5

Set Up Site Data

Instructions: Enter site information for the Magic Box Plant.

Site:	12	
Description:	Magic Box Plant	
Entity:	1000	
Default Inventory Status:	OI-NO	
Automatic Locations:	No	
Database:	Blank	
EMT Supplier:	Blank	
External Supplier:	No	
Transfer Variance Acct:	5030	12

Use: Site Maintenance 1.1.13

Set Up Location Data

Instructions: Set up a Stock location at Site 12.

Site:	12
Location:	Stock
Description:	Component Stock Room

Instructions: Set up a location for finished goods inventory at Site 12.

Site:	12
Location:	FGI
Description:	Finished Goods Inventory

Use: Location Maintenance 1.1.18

Set Up the Inventory Control File

Instructions: Enter the following information in the Inventory Control File:

Journal Reference Method: 1
 Default Site: 12

Use: Inventory Control File 3.24

Set Up User IDs

Instructions: Set up the following user IDs:

User Id:	Eng1	Language:	US	User Name:	Engineer 1	Employee
User Id:	Eng2	Language:	US	User Name:	Engineer 2	Employee
User Id:	Pln1	Language:	US	User Name:	Planner 1	Employee
User Id:	Pln2	Language:	US	User Name:	Planner 2	Employee
User Id:	Mfg1	Language:	US	User Name:	Mfg. Manager 1	Employee
User Id:	Mfg2	Language:	US	User Name:	Mfg. Manager 2	Employee
User Id:	QEng1	Language:	US	User Name:	Quality Engineer 1	Employee
User Id:	QEng2	Language:	US	User Name:	Quality Engineer 2	Employee
User Id:	Acct	Language:	US	User Name:	Cost Accountant	Employee
User Id:	Your Login	Language:	US	User Name:	Your Name	Employee

Use: User Maintenance 36.3.18

Note There are no default values for E-Mail Definition Maintenance 36.4.20 because e-mail systems vary widely. When implementing PCC in your business, you need to set up the system parameters before using e-mail notification.

There are no exercises for setting e-mail in this training course, because of the system-specific administration. Your e-mail system administrator needs to be involved in setting up the parameters of e-mail within MFG/PRO. Continue with the User ID exercise.

Set Up Generalized Codes

Instructions: Enter the following generalized code:

Field Name: pt_rev

Value: 3

Comments: Prototype Rev 3

Instructions: Continue entering the following generalized codes:

Field Name: ECM_ECR_DSPN

Value:	UAI	POO	WIP	FGI	FUP
Comments:	Use as is	Rework parts on order	Rework WIP	Revise thru FGI	Requires field upgrade

Use: Generalized Codes Maintenance 36.2.13

Set Up Reason Reason Code Severity Levels

Instructions: Enter the information below in order to set up reason code severity levels.

Reason Code:	10	Reason Type:	PCO	Description:	No affect parts/process
Reason Code:	20	Reason Type:	PCO	Description:	Parts on order
Reason Code:	30	Reason Type:	PCO	Description:	On order/WIP
Reason Code:	40	Reason Type:	PCO	Description:	Thru WIP/scrap
Reason Code:	50	Reason Type:	PCO	Description:	Effect thru FGI
Reason Code:	60	Reason Type:	PCO	Description:	Thru FGI/scrap
Reason Code:	70	Reason Type:	PCO	Description:	Rework thru field units
Reason Code:	80	Reason Type:	PCO	Description:	Replace field units

Use: Reason Code Maintenance 36.2.17

Set Up PCC Groups

Instructions: Create PCC groups and assign members to the groups. Enter group name and press GO. Enter description and press GO. At right of window, press ADD. Enter user ID and press GO twice. Press Group Master button to enter next group. Repeat until all user IDs are entered.

<u>Group</u>	<u>Description</u>	<u>User IDs</u>
Design	PCC Design Group	Eng1 Eng2 QEng1 QEng2 Your Login
Eng/Apv	Engineering approval	Eng1 Eng2 Your Login
Pln/Apv	Buyer/planner approval	Pln1 Pln2 Your Login
Mfg/Apv	Mfg. manager approval	Mfg1 Mfg2 Your Login
Qual/Apv	Quality Eng. approval	QEng1 QEng2 Your Login
Dist	PCO Distribution List	Pln1 Mfg1 QEng1 Acct Your Login

Use: Group Maintenance 1.9.1.1

Set Up Item Master

Instructions: Enter the following information in the item master.

Item Number: 12-100

Description: Magic Box, Packaged

UM: EA

ProdLine: 12

Design Group: DSN 7000

Status: Proto

Rev: 2

Lot/Serial Control: S

Site: 12

Location: FGI

Use: Item Master Maintenance 1.4.1

Set Up Item Data

Instructions:

<u>Item #</u>	<u>Description</u>	<u>Prod Line</u>	<u>Status</u>	<u>Design Group</u>
12-100	Magic Box Assy	12	Proto	Design
12-101	Assembly	12	Proto	Design
12-102	PCB Assy	12	Proto	Design
12-103	Packaging material	12	Proto	Design
12-104	Label	12	Proto	Design
12-105	Switch	12	Proto	Design
12-115	Sub-assembly	12	Proto	Design

Use: Item Data Maintenance 1.4.2

Set Up Inventory Data

Instructions: Enter the following inventory data:

Item #	Lot/Serial	Site	Location
12-100	S	12	FGI
12-101	L	12	Stock
12-102	S	12	Stock
12-103		12	Stock
12-104		12	Stock
12-105		12	Stock
12-12	L	12	Stock

Use: Inventory Data Maintenance 1.4.5

Set Up Item Planning Data

Instructions: Enter the following item planning data:

Item #	Order Quantity	P/M	Mfg LT	Pur LT
12-100	10	M	1	
12-101	10	M	1	
12-102	10	P		5
12-103	10	P		2
12-104	10	P		12
12-105	10	P		5
12-15	10	P		12

Use: Item Planning Maintenance 1.4.7

Set Up Item Cost Data

Instructions: Enter the following item cost data:

Item #	Price	G/L Cost Material	Curr Cost Material
12-100	5.00		
12-101			
12-102			25.00
12-103			1.25
12-104			.05
12-105	15.00		1.25
12-15			35.00

Use: Item Cost Maintenance 1.4.9

Set Up Product Structures

Instructions: Enter the following product structure data for parent item 12-100.

Component Item	Description	Qty Per	UM	T
12-101	Magic Box, Assembly	1	EA	
12-102	PCB Assembly, Magic Box	1	EA	
12-105	Switch, Magic Box	1	EA	
12-15	Sub Assembly, Magic Box	1	EA	
12-103	Packaging Material Kit	1	EA	
12-104	Label, Magic Box	1	EA	
AP12-100	Assembly Procedure, Magic Box	1	EA	D

Use: Product Structure Maintenance 13.5

Review Product Structure Inquiry

Instructions: Verify the product structure data using Product Structure Inquiry 13.6.

Set Up a Department

Instructions: Set up a department for the production of the Magic Box by entering the following information:

Department: Dept
Description: Magic Box Production

Use: Department Maintenance 14.1

Set Up a Work Center

Instructions: Set up a work center for Magic Box Assembly by entering the following data:

Work Center: Magic
Description: Magic Box Assembly
Department: Dept
Setup Rate: 25.00
Labor Rate: 20.00
Lbr Bdn %: 1 00.00

Use: Work Center Maintenance 14.5

Set Up Routing

Instructions: Set up routing by entering the following data for Routing Code 12-101:

Operation:	10	20
Work Center:	Magic	Magic
Description:	Assemble Magic Box	Test Magic Box
Setup Time:	1.0	0.0
Run Time:	0.4	0.1

Use: Use Routing Maintenance 14.13.1

Instructions: Set up routing by entering the following data for Routing Code 12-100:

Operation: 10
 Work Center: Magic
 Description: Package the product
 Setup Time: 0.5
 Run Time: 0.1

Set Up Routing Slips

Instructions: In this exercise you will set up a routing slip for PCOs.

Routing Slip: PCO-R1

Description: PCO Routing Slip R1

Severity List: PCO

Instructions: Press GO until cursor returns to *Routing Slip* then “Detail Maintenance” button and enter the following data:

Group:	Eng/Apv	Pln/Apv	Mfg/Apv	Qual/Apv
Sequence:	0	0	0	0
Severity Level:	10	20	30	10

Check the Can Re-Route and Notify When Next Boxes for all of the above.

Use: Routing Slip Maintenance 1.9.1.5

Set Up a PCR Routing List

Instructions:

- 1 Copy Routing Slip: PCO-R1 To: PCR-R1.
- 2 Press GO until the cursor returns to the initial field.

Use: Routing Slip Copy 1.9.1.7

Instructions:

- 1 Enter the following information in Routing Slip Maintenance 1.9.1.5:

Routing Slip: PCR-R1

Description: PCR Routing Slip R1

- 2 Press GO and select *Detail Maintenance*.
- 3 With your cursor in the *Group* field, press the down arrow until Mfg/Apv appears in the field.
- 4 Press the F5 Key (Confirm Delete)
- 5 Press the down arrow until Pln/Apv appears in the field.
- 6 Press the F5 Key (Confirm Delete)
- 7 Use the up and down arrow keys to verify that only Eng/Apv and QEng/Apv remain. Leave all values the same.
- 8 Exit function.

Set Up PCR/PCO Type Maintenance

Instructions: Enter the following data:

Type:	PCO	PCR
Design Group:	Design	Design
Description:	PCO Document	PCR Document
Doc Type:	PCO	PCR
Prefix:	PCO	PCR
Routing Slip:	PCO-R1	PCR-R1
Distribution:	DIST	Design

Use: PCR/PCO Type Maintenance 1.9.1.9

Set Up PCC Control File

Instructions: Enter the following data in the indicated fields in the PCC Control File:

Auto Numbers: Yes

Security: No

PCO: 1000

PCR: 8000

Use: PCC Control File 1.9.24



Course Overview

- ✓ Introduction to Product Change Control
- ✓ Business Considerations
- ✓ Set up Product Change Control
- ◆ Process Product Change Orders (PCOs)
- ◆ Process Product Change Requests (PCRs)

PCC-SU-440

CHAPTER 4

Process Product Change Orders



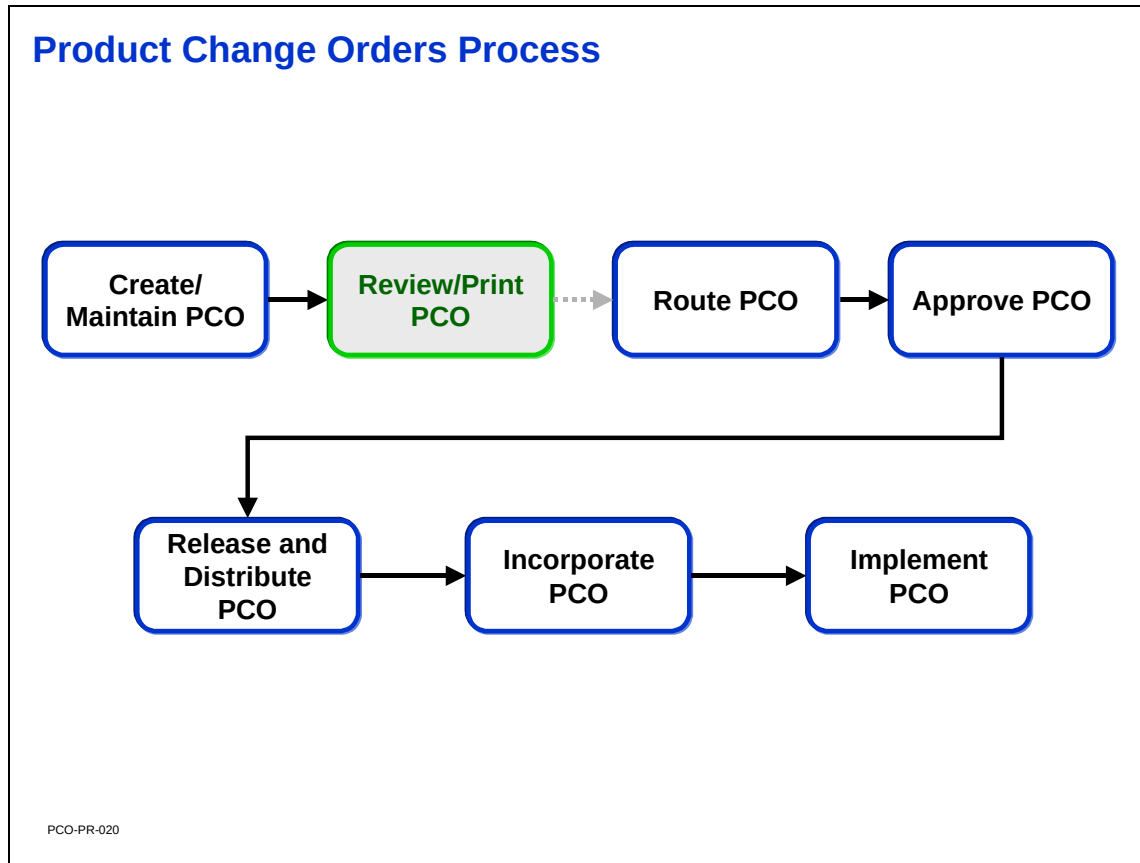


Process Product Change Orders

In this section you learn how to:

- ✓ Identify some key business issues you need to consider before setting up Product Change Control in MFG/PRO
- ✓ Set up Product Change Control in MFG/PRO
- ✓ **Process Product Change Orders (PCOs) in MFG/PRO**
 - ♦ Process Product Change Requests (PCRs) in MFG/PRO

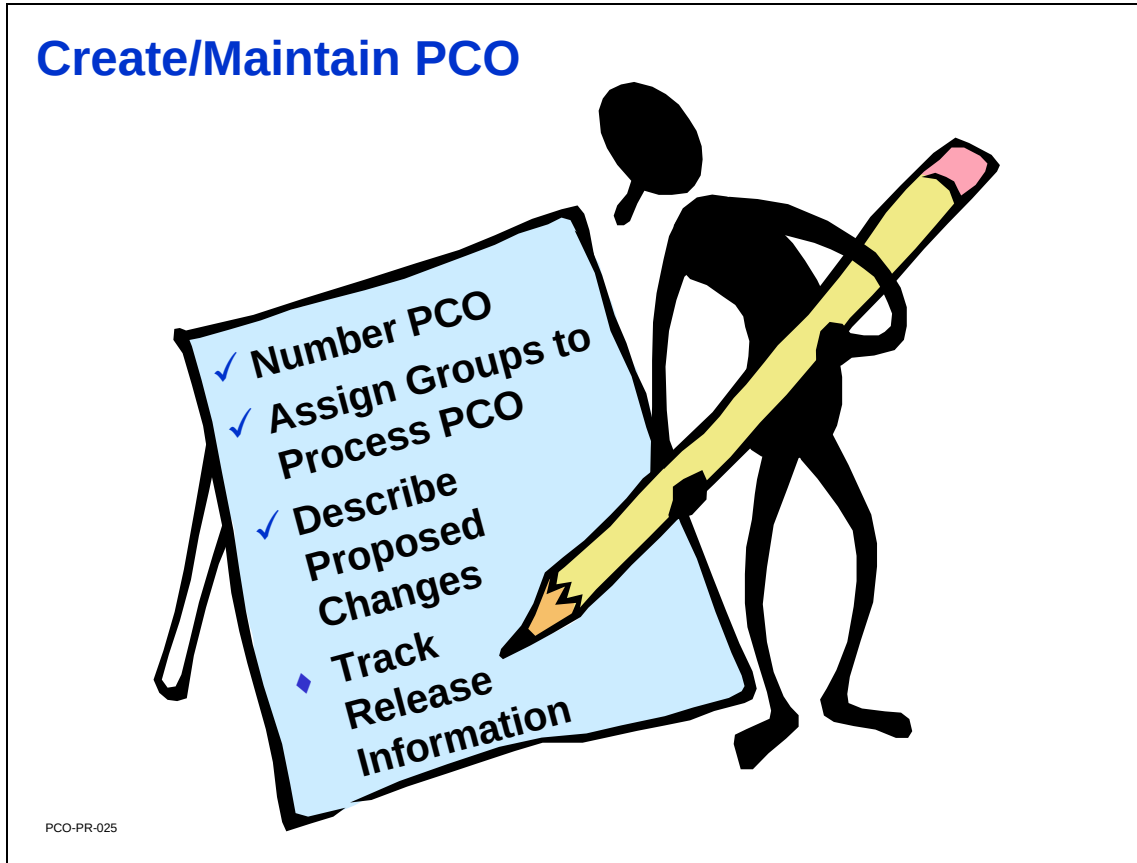
PCO-PR-010



Product Change Orders Process

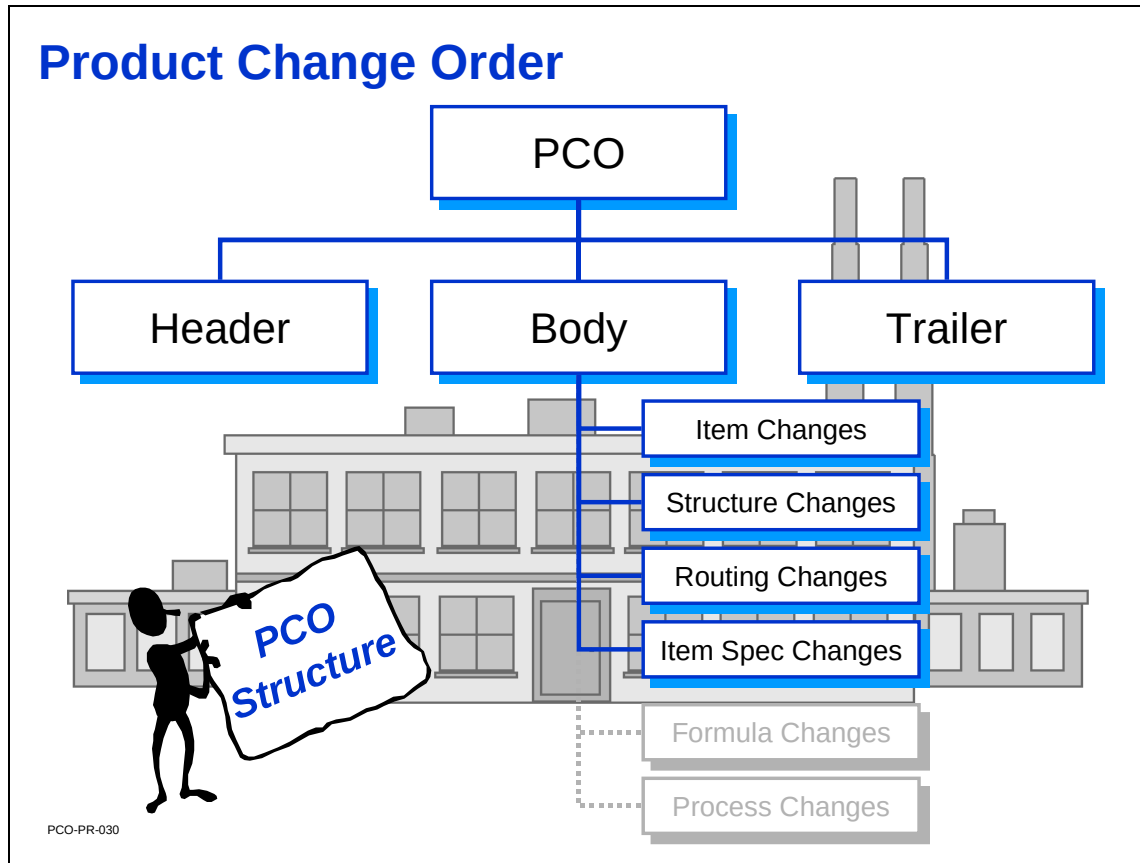
This illustration is a suggested process sequences of master files for the Product Change Control module, for Product Change Orders, which is based on information that flows from one master file to another and prerequisites that need to be accomplished. Reading the illustration:

-  Boxes with solid lines are required for processing and are covered in this course
-  Shaded boxes reflect optional steps, but are covered in this course
-  Boxes with dotted lines are required, but are covered at length in another course



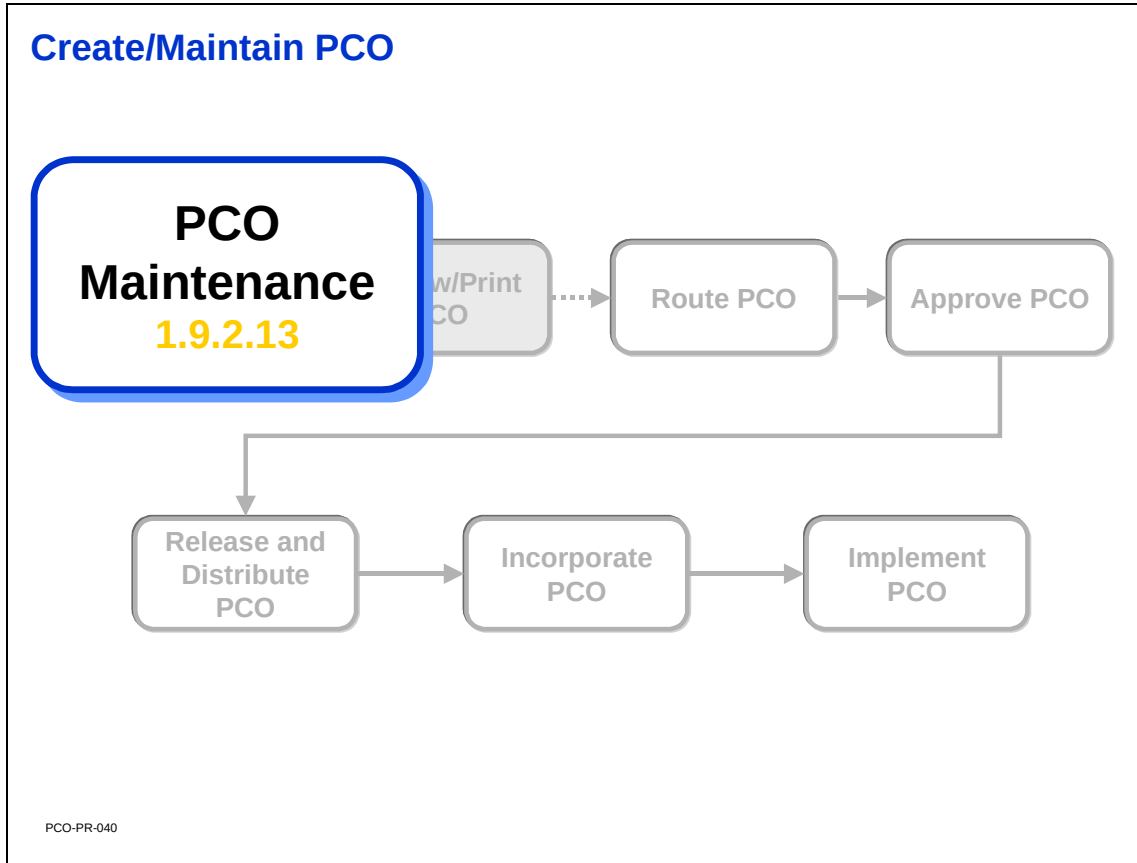
Create/Maintain PCO

- The Product Change Order includes:
 - PCO Number
 - Who will process the PCO
 - Descriptions of the proposed change(s)
 - Tracking methods for controlling the release of this information



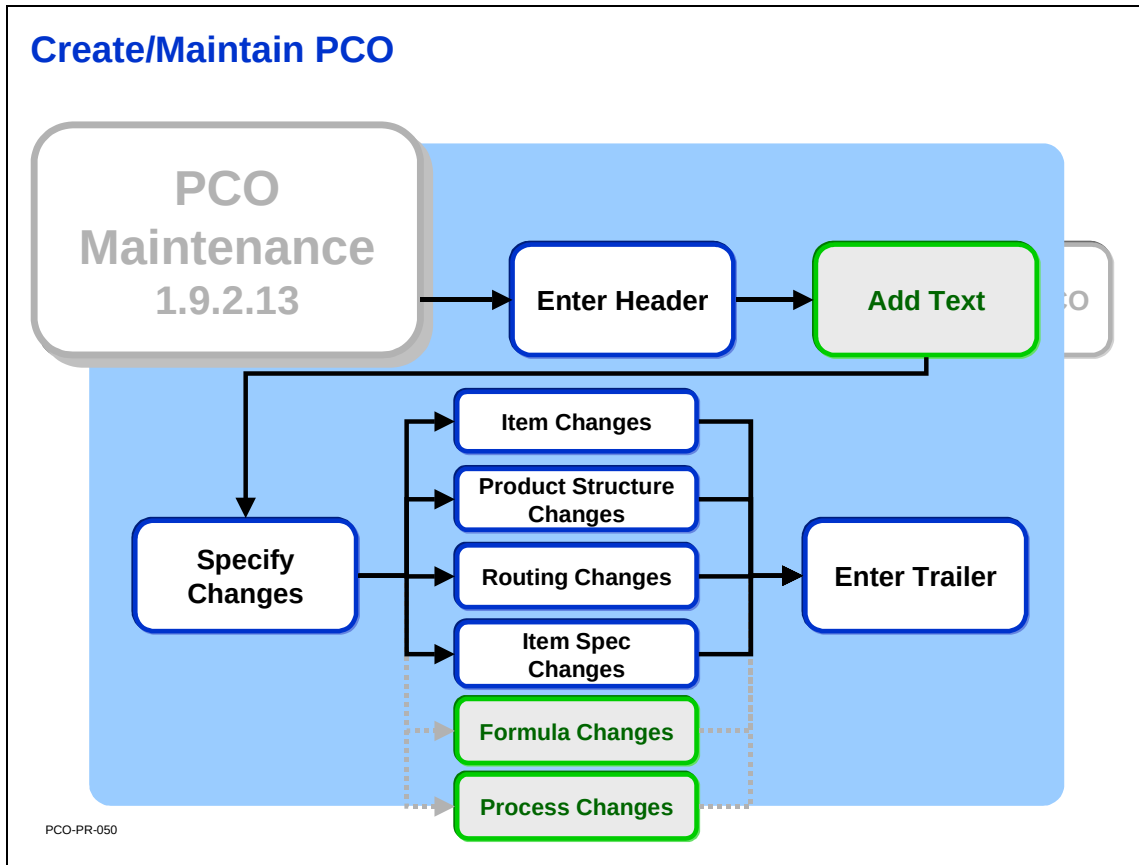
Product Change Order Structure

- PCOs have three main parts
 - Header
 - Body (optional text)
 - Trailer
- Changes are specified in the Body
 - We will discuss Item, Product Structure, Routing, and Item Spec changes
 - Formula and Process changes are optional to this discussion



Create/Maintain PCO

- Creating and maintaining PCOs is done in PCO Maintenance 1.9.2.13
- After completing the first screen, a menu will appear that gives you access to functions which allow detail modification of the product change order
 - Use your arrow keys to select a menu option
 - Each menu item (except Trailer Maintenance) leads to another menu
 - Select from the menu to bring up a screen to perform a function

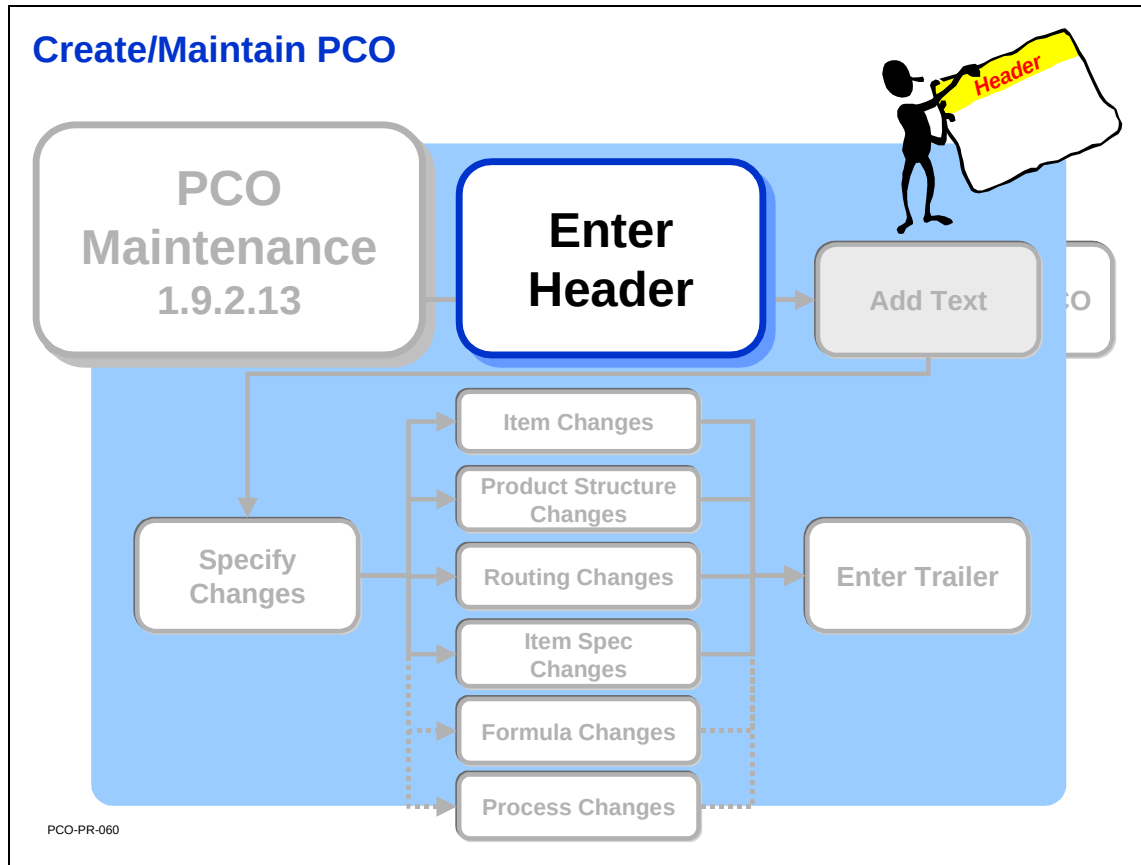


PCO Maintenance

Menu Number 1.9.2.13

- PCO creation can be broken down into the following steps:
 - Enter Header
 - Add Text (optional)
 - Specify Changes
 - Enter Trailer

Warning Direct Item Master Access, a function under the Item File Maintenance Menu, gives you access to all items in the database. The modifications you perform using Direct Item Master Access take place in the item master files, not in the PCO. Be careful, this function is the only function in PCO Maintenance which directly affects MFG/PRO production files.



Enter Header

- Number the PCO document
- Identify type and design group
- Add any user specific information

1.9.2.13 – PCO Maintenance

The screenshot shows the 'PCO Maintenance' window. The header section contains the following information:

Number: PC000023	ID:	Database: PCO
Type: PCO	Design Group: DESIGN	Created By: ENG
		06/28/99

The main form area contains the following fields:

- Title: Major Redesign of Coolers
- Reason: A major enhancement to the motor installed as part of the OASIS Cooler is required to increase its competitive advantage
- Class: DESIGN
- Originator: Field
- User Code [1]:
- User Code [2]:

A stick figure is holding a sign that says 'Header'. A callout box points to the User Code fields with the text 'User Fields, Do Not Affect Processing (optional)'.

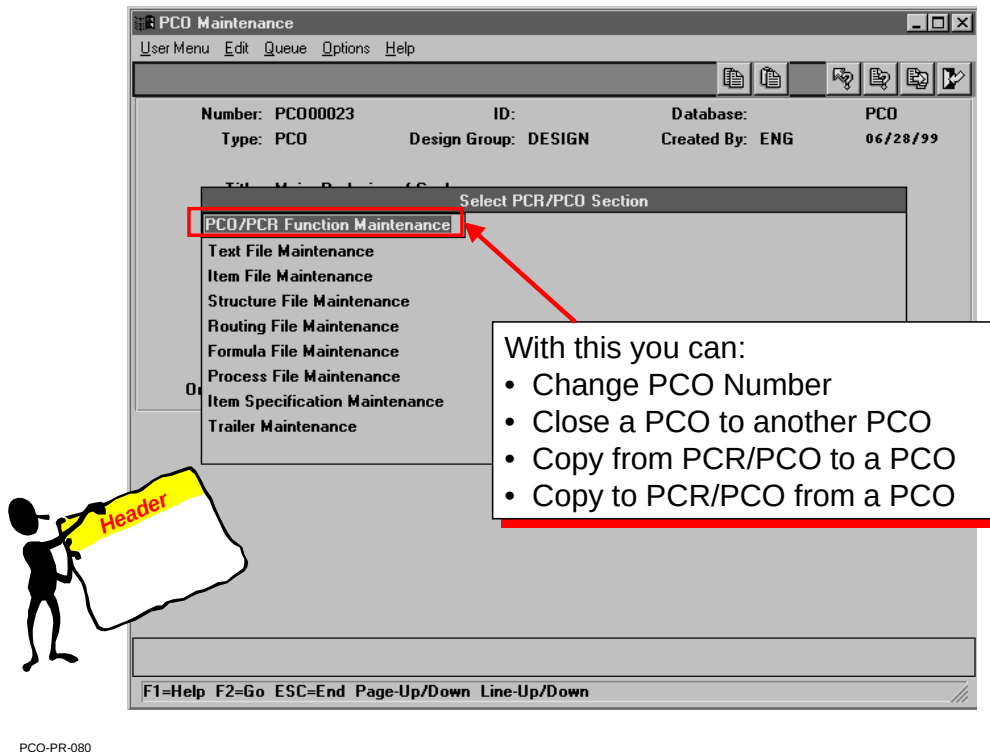
PCO-PR-070

Header

Menu Number 1.9.2.13

- *Number* is filled in automatically if the PCC Control File 1.9.24 is set for Autonumbering
- Break up large PCOs by assigning multiple PCOs with the same number and different *IDs*
- *Type* and *Design Group* will determine approval cycle, distribution group, and autonumbering for the PCO number (if applicable)
- The user defined fields (highlighted in the picture above) do not affect processing and are optional fields

1.9.2.13 – PCO Maintenance

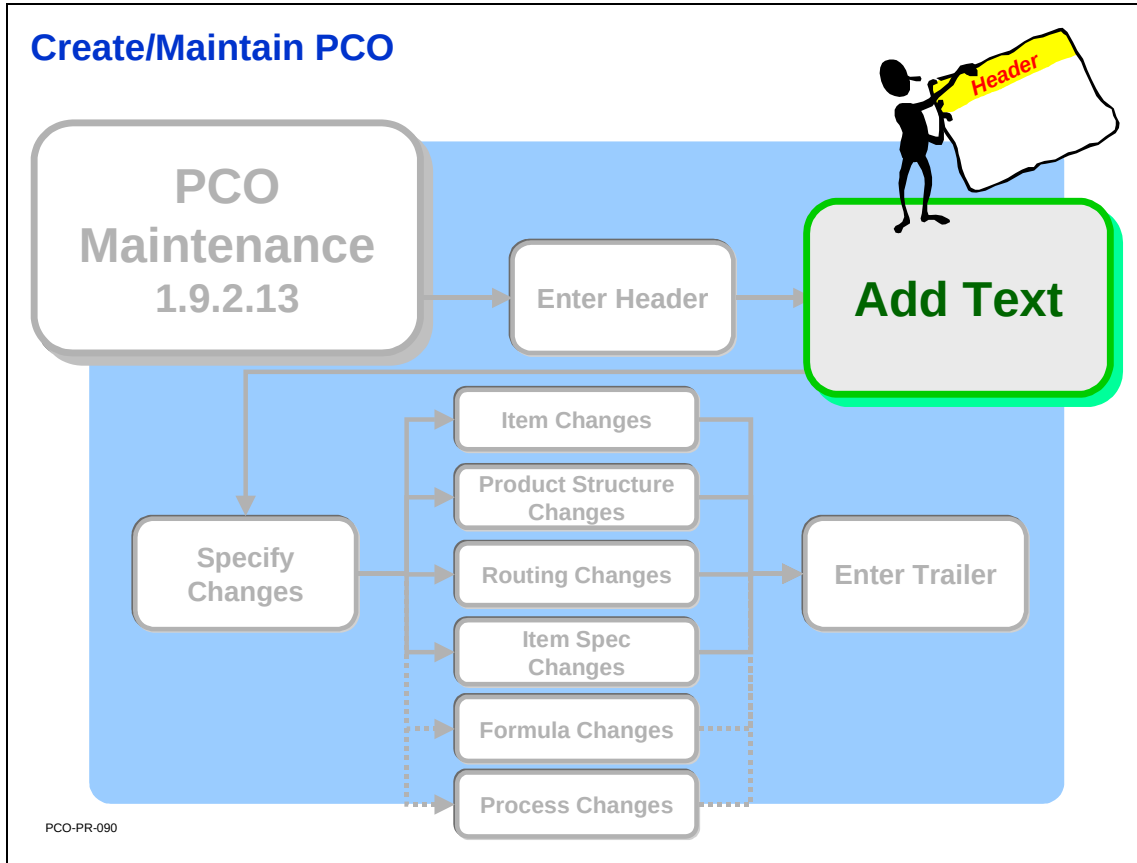


PCO-PR-080

Select PCR/PCO Section

Menu Number 1.9.2.13

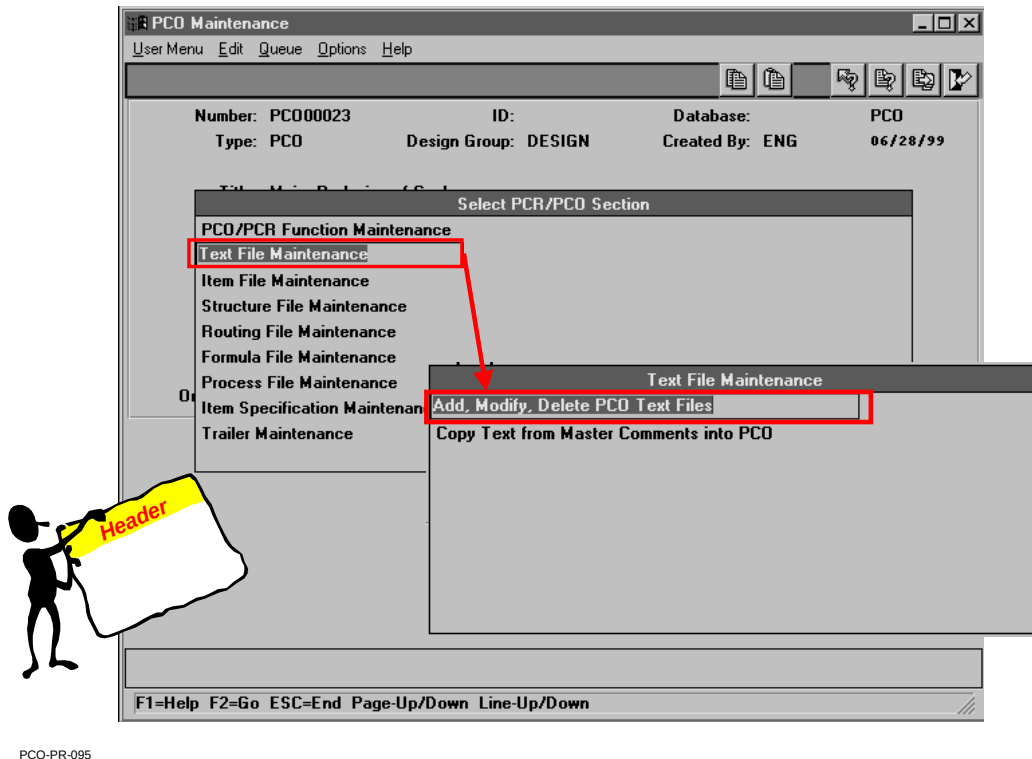
- A section menu allows you to complete other parts of the PCO
 - Only enabled processes appear on the section menu
- Accessing PCO/PCR Function Maintenance allows you to:
 - Change a PCO Number
 - Close a PCO to another PCO
 - Copy either to or from PCR/PCO to or from another PCO



Add Text

- Adding text is optional
 - Manually enter or modify transaction comments
 - Copy Master Comments to PCO

1.9.2.13 – PCO Maintenance



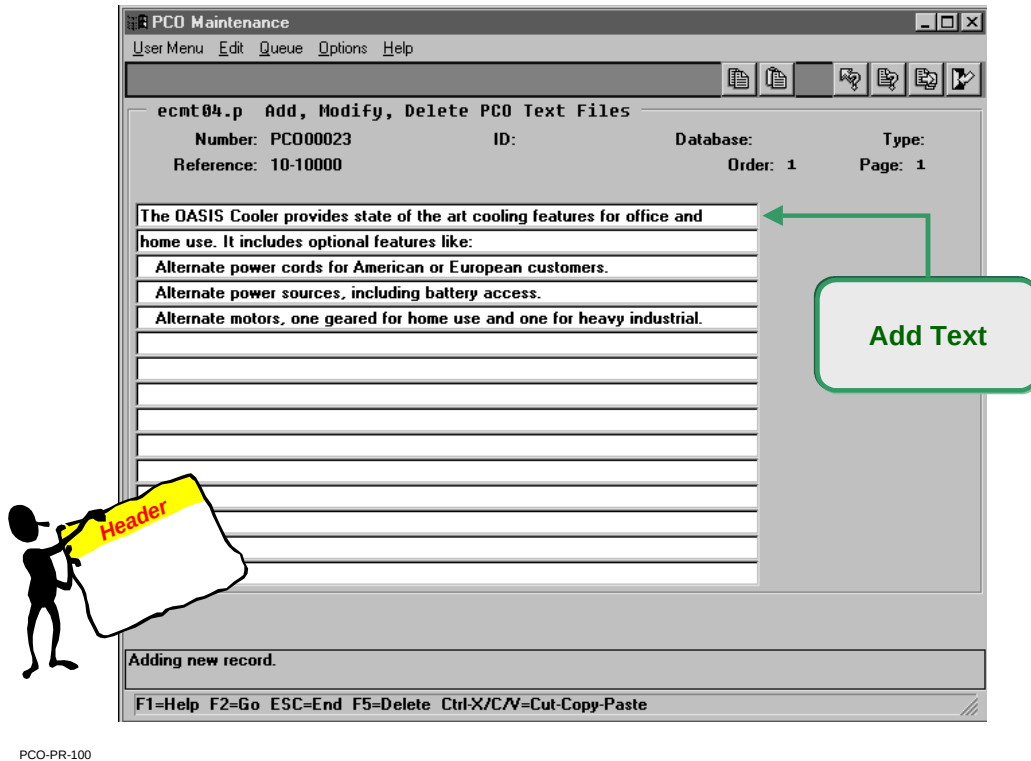
PCO-PR-095

Text File Maintenance — Add, Modify, Delete PCO Text Files

Menu Number 1.9.2.13

- Selection menu moves you to Text File Maintenance menu
- Choose to create a new text file or modify or delete an existing text file

1.9.2.13 – PCO Maintenance



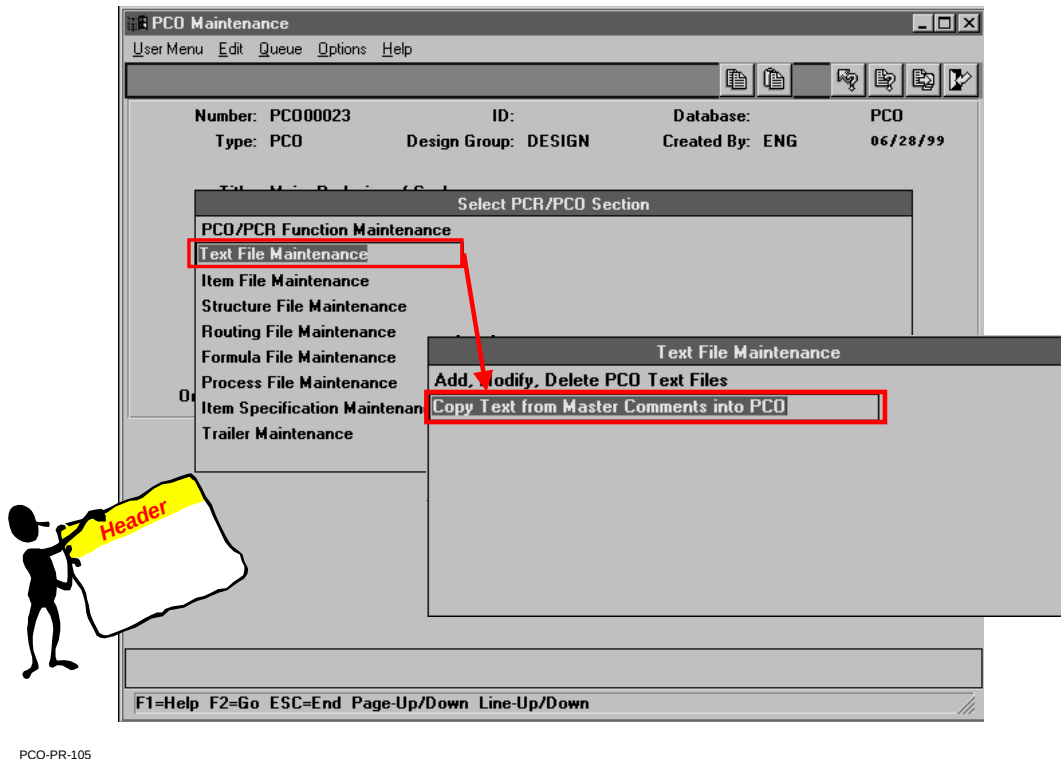
PCO-PR-100

Add, Modify, Delete PCO Text Files

Menu Number 1.9.2.13

- Works the same way as other transaction comments in MFG/PRO

1.9.2.13 – PCO Maintenance



PCO-PR-105

Text File Maintenance — Copy Text from Master Comments into PCO

Menu Number 1.9.2.13

- Selection menu moves you to Text File Maintenance menu
- Choose to copy text from Master Comments

1.9.2.13 – PCO Maintenance

PCO Maintenance

User Menu Edit Queue Options Help

ecmt03.p Copy Text From Master Comments into PCO

Number: PC000023 ID: Database: PCO

Title: Major Redesign of Coolers

Starting Master Reference: @FINANCE:

Type: Language: us

Master Comments Copy Selection

Master Reference	T	Language
@FINANCE	ke	us
@FLOW:	ke	us
@FP	ke	us
@FS	ke	us
@fs-purp	ke	us
@FSM	ke	us
@GL	ke	us
@go	ke	us
@GTM	ke	us
@help	ke	us

Enter to Select

Add Text By Copying

Useful for:

- Surveys
- Disclaimers
- Policies
- Standard Procedures
- Checklists
- Disposition Forms

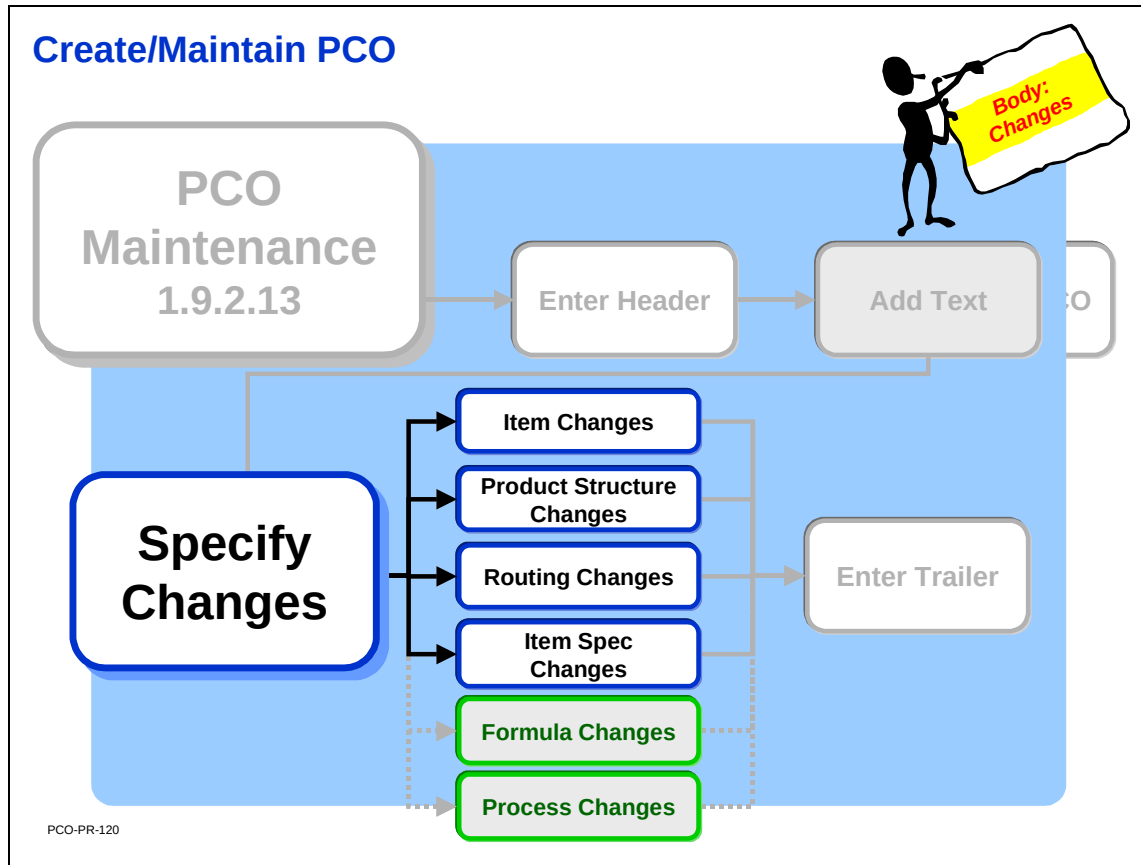
F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

PCO-PR-110

Copy Text from Master Comments into PCO

Menu Number 1.9.2.13

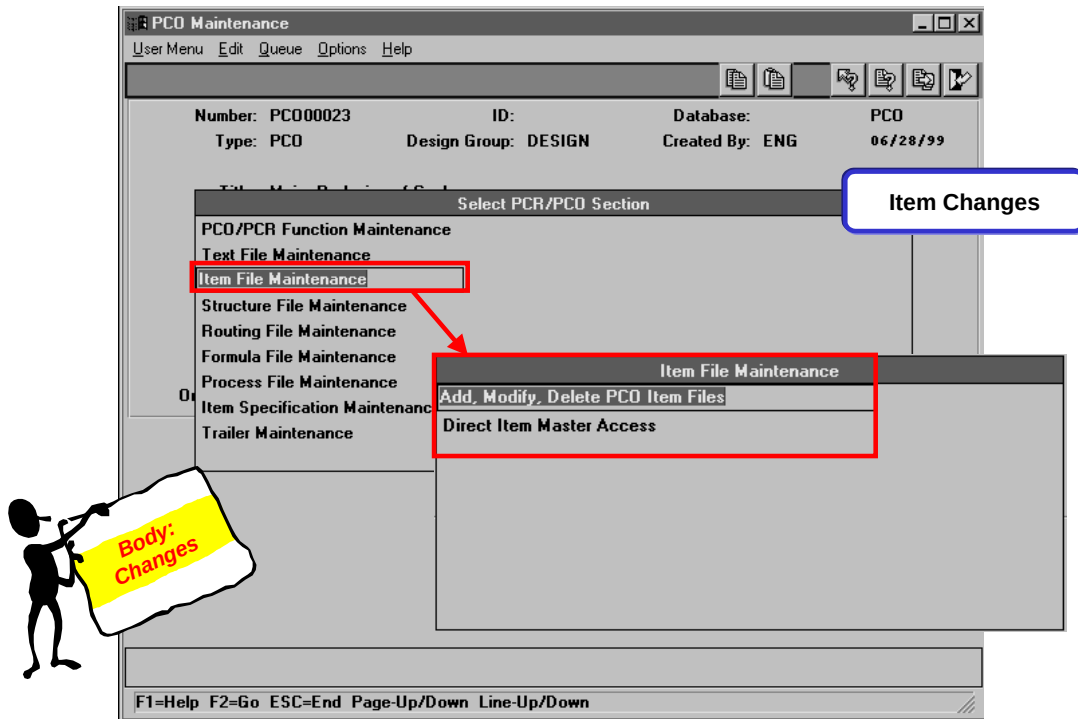
- Enter master reference and type in a pop-up frame, or select from a list of comments
 - Enter to select
 - F2 to save changes



Specify Changes

- Identify the proposed changes considered on this PCO

1.9.2.13 – PCO Maintenance



PCO-PR-130

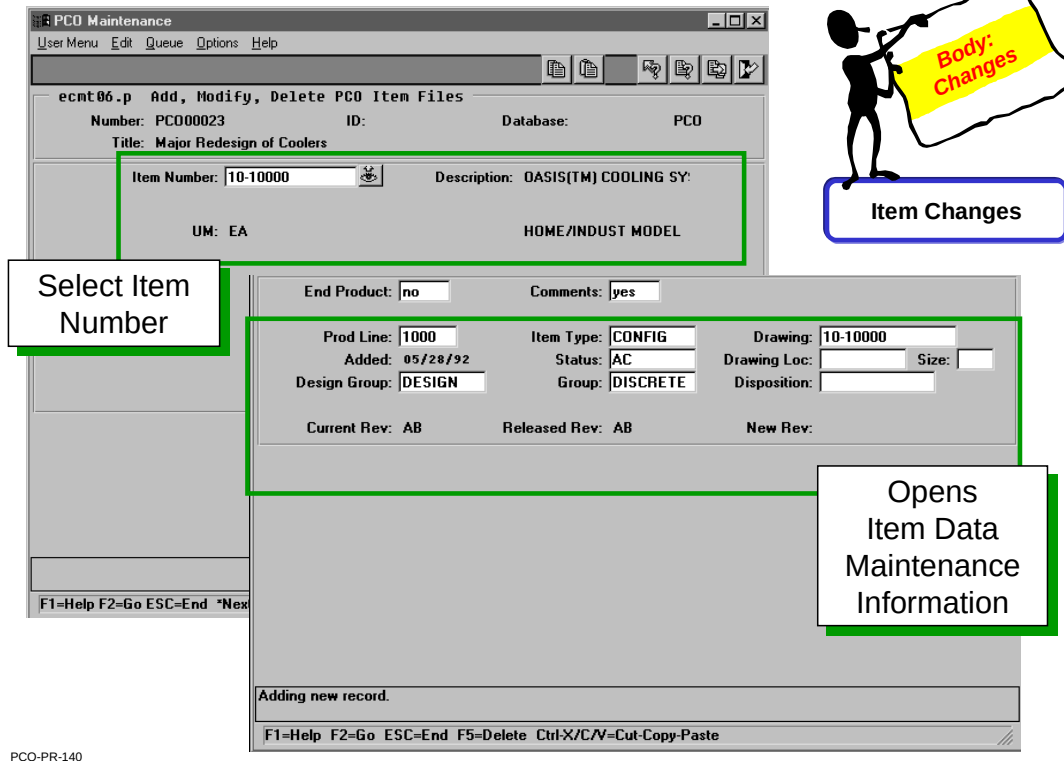
Item File Maintenance

Menu Number 1.9.2.13

- Proposed Item Master changes
- Directly affects Production files
- Possibly to enter new item numbers with Direct Item Master Access, rather than Item Data Maintenance 1.4.3, as part of a PCO

Note Some companies *require* all Item Data Maintenance to be maintained through the PCC function, *not* through Item Data Maintenance 1.4.3

1.9.2.13 – PCO Maintenance



The screenshot shows the 'PCO Maintenance' window. The title bar reads 'PCO Maintenance'. The menu bar includes 'User Menu', 'Edit', 'Queue', 'Options', and 'Help'. The main window has a header section with 'ecnt06.p Add, Modify, Delete PCO Item Files'. Below this, there are fields for 'Number: PC000023', 'ID:', 'Database: PCO', and 'Title: Major Redesign of Coolers'. A green box highlights the 'Item Number: 10-10000' field, with a callout box labeled 'Select Item Number'. To the right of the 'Item Number' field is a 'Description: OASIS(TM) COOLING SY:'. Below these fields are 'UM: EA' and 'HOME/INDUST MODEL'. A callout box with a stick figure holding a sign that says 'Body: Changes' points to the 'Item Number' field, and another callout box labeled 'Item Changes' is nearby. Below the header section, there are fields for 'End Product: no' and 'Comments: yes'. A green box highlights a section containing 'Prod Line: 1000', 'Item Type: CONFIG', 'Drawing: 10-10000', 'Added: 05/28/92', 'Status: AC', 'Drawing Loc: ', 'Size: ', 'Design Group: DESIGN', 'Group: DISCRETE', 'Disposition: ', 'Current Rev: AB', 'Released Rev: AB', and 'New Rev: '. A callout box labeled 'Opens Item Data Maintenance Information' points to this section. At the bottom of the window, there is a status bar with 'F1=Help F2=Go ESC=End *Next' and 'Adding new record.'.

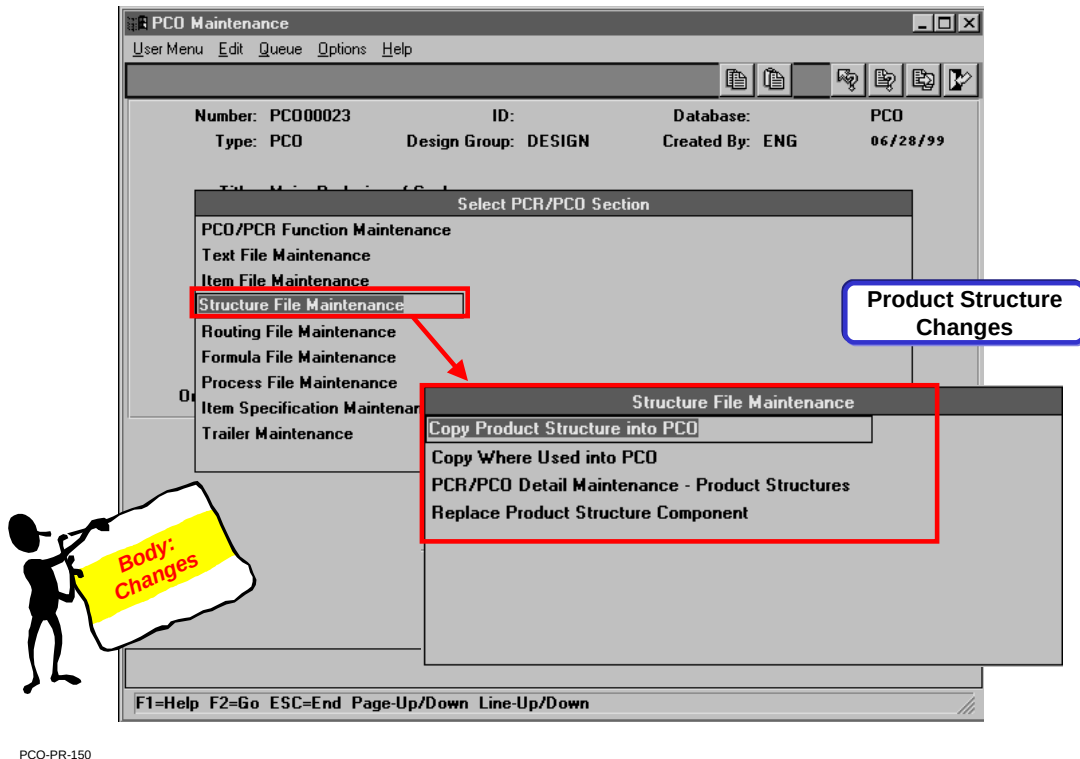
PCO-PR-140

Item File Maintenance — Add, Modify, Delete PCO Item Files

Menu Number 1.9.2.13

- Change existing items
 - Only one PCO per item
- Does not support:
 - Item-Site data
 - Item Planning data
 - Inventory data
 - Cost and price data

1.9.2.13 – PCO Maintenance



PCO-PR-150

Structure File Maintenance

Menu Number 1.9.2.13

- Copy product structures or where-used to the PCO to propose changes
- Maintain changes with Detail Maintenance
- Proposed component replacements throughout multiple bills

Note You cannot delete a product structure from within PCO Maintenance since structures may contain “as of” information. Instead, deactivate the structure by entering an end-effective date. Because delete is not available, structure add and structure edit functions are separate. This distinguishes the structure maintenance functions in PCO Maintenance from all other maintenance programs.

1.9.2.13 – PCO Maintenance

Product Structure Changes

Select Parent

Enter to Select

Copy Original Structure to Indicate PCO Changes

Body: Changes

Parent Item	Description	UM	Eff Date	Rev	Levels
10-10000	QASIS(TM) COOLING SY	EA	06/28/99		99

Level	Component Item	Description	Reference
.2	44-5000	CONTROL PANEL,LCD,S	R4
.2	44-7000	PROCESSOR,PRE-PROG	R6
1	55-100	EVAPORATOR,SERIES 1	STANDARD
1	66-100	MOTOR,440AC3PHASE	MOTOR
1	66-110	MOTOR,7500WATT 110V	MOTOR
1	66-120	MOTOR,DODGE 440CC E	MOTOR
1	77-100	PUMP,1000GPH,SERIES	PUMP-VOLUME
1	77-110	PUMP,1000GPH,SERIE	PUMP-VOLUME

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

Structure File Maintenance — Copy Product Structure into PCO

Menu Number 1.9.2.13

- Specify *Parent Item*
- Current Bill of Materials displays
- Select or de-select items from the bill to copy into the PCO by pressing the Enter key

1.9.2.13 – PCO Maintenance

Product Structure Changes

Select Component

Useful to Make Same Change in Several Bills

Body: Changes

PCO-PR-170

Structure File Maintenance — Copy Where Used into PCO

Menu Number 1.9.2.13

- Works the same as *Copy Product Structure into PCO* except:
 - Displays bill of material as indented where-used bill of material
- Useful for making the same change to several product structures

1.9.2.13 – PCO Maintenance

The screenshot shows the 'PCO Maintenance' window with the title bar 'ecmt07.p PCR/PCO Detail Maintenance - Product Structures'. The window contains the following fields and annotations:

- Product Structure Changes** (blue box): A label pointing to the top right of the window.
- Change Items in the Bill** (green box): A label pointing to the 'Parent Item' and 'Component Item' fields.
- Body: Changes** (yellow box): A label pointing to the 'Structure Type' field.
- A, D, J, X, P, or O** (yellow box): A label pointing to the 'Structure Type' field.

The form fields include:

- Number: PC000023
- ID:
- Database: PC0
- Title: Major Redesign of Coolers
- Parent Item: 10-10000
- Component Item: 66-100
- Reference:
- OASIS(TM) COOLING SY: MOTOR,440AC3PHASE
- Batch Size:
- Deactivate: no
- Qty Per: 1.0
- Qty Type:
- Batch Percent: 0.0
- Scrap: 0.00%
- LT Offset:
- Op:
- Structure Type: ☐
- Mandatory: no
- Default Option: yes
- Remarks:
- Comments: no
- Sequence Number:
- Forecast: 100.00%
- Option Group:
- Process:

Adding new record.

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

PCO-PR-180

Structure File Maintenance — PCR/PCO Detail Maintenance - Product Structures

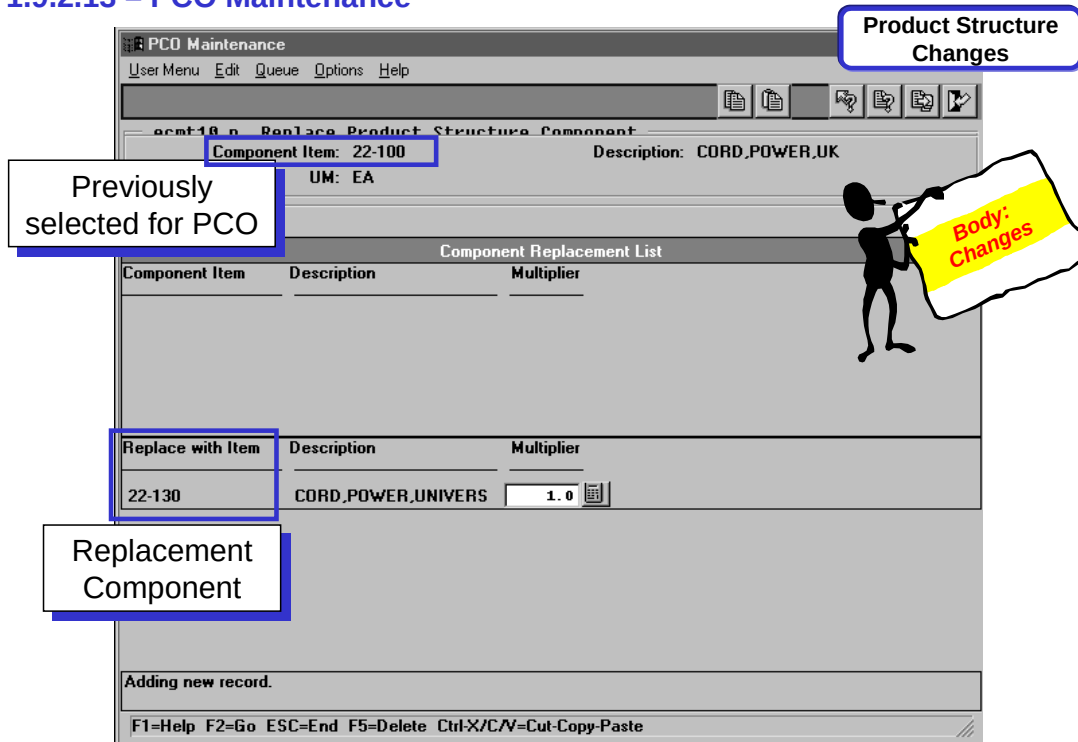
Menu Number 1.9.2.13

- Add items to product structures
- Delete product structure records
 - Sets an end effective date when PCO is incorporated
- Edit product structure changes



See discussion in Field Help for Structure Type

1.9.2.13 – PCO Maintenance



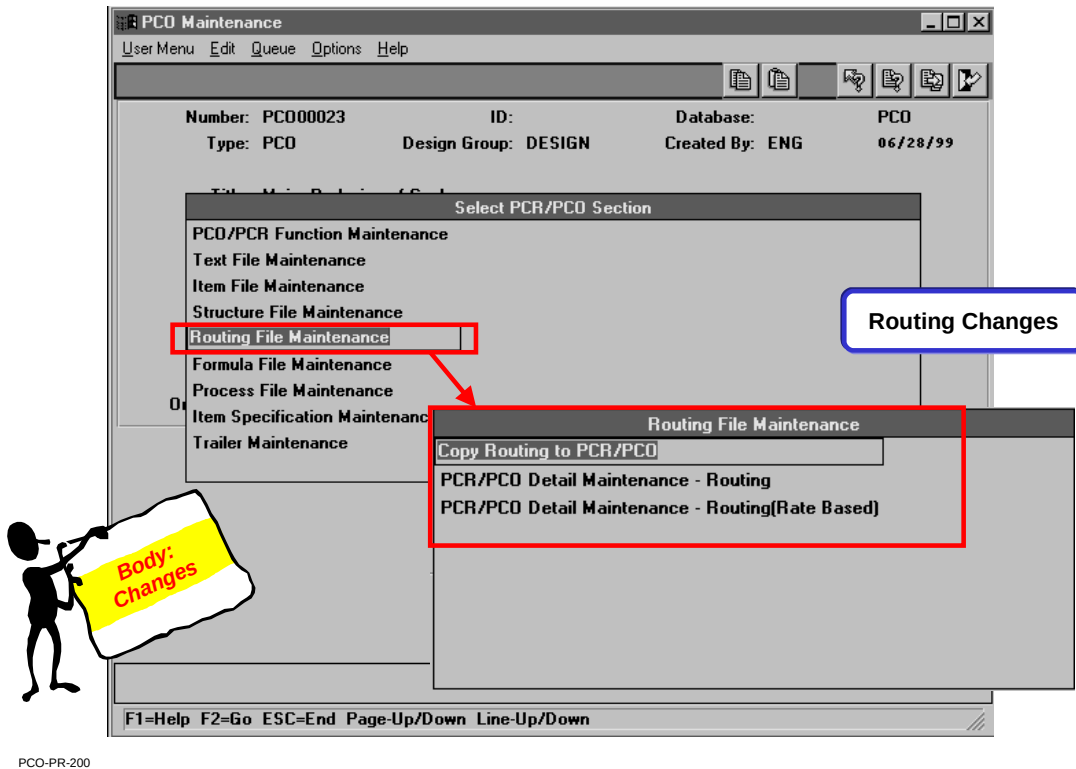
PCO-PR-190

Structure File Maintenance — Replace Product Structure Component

Menu Number 1.9.2.13

- Replaces one component item with another across multiple bills of material
 - Select the component in any previous Structure File Maintenance step
 - Searches product structure records already included in the PCO and sets end effective dates for replacements
 - Adds additional product structures to the PCO with the substitution
- Other detailed product structure data is copied from the existing record

1.9.2.13 – PCO Maintenance



Routing File Maintenance

Menu Number 1.9.2.13

- For both standard and rate-based routing
- Copy routings to the PCO
- Edit routings with Detail Maintenance
 - Both standard routings and routings that are rate based

Note Processes are not maintained with this function

1.9.2.13 – PCO Maintenance

PCO Maintenance

User Menu Edit Queue Options Help

ecnt11.p Copy Routing to PCR/PCO

Number: PC000023 ID: Database: PCO

Title: Major Redesign of Coolers

Routing Code	Description
10-10000	ASSEMBLE PER SPEC

Op	Description
* 10	ASSEMBLE PER SPEC
* 20	INSPECT PER PROC-009

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

PCO-PR-230

Routing File Maintenance — Copy Routing to PCR/PCO

Menu Number 1.9.2.13

- Start with a copy of existing routing to simplify editing
- Bring routing records into PCO for modification
- Displays the operation for a routing to select which steps to include
- Once records are copied, use *PCR/PCO Detail Maintenance - Routing* (see page 149) to modify

1.9.2.13 – PCO Maintenance

PCO Maintenance
User Menu Edit Queue Options Help

ecmt12.p PCR/PCO Detail Maintenance - Routing
Number: PC000023 ID: Database:

Routing Code: 10-10000 OASIS(TM) COOLING SY:
Operation: 10 Batch Qty: 1.0 EA

Deactivate: no
Standard Operation:
Work Center: 10000 ASSEMBLY.QASIS(TM) U
Machine:

Description: ASSEMBLE PER SPEC

Machines per Op:	1	Milestone Operation:	yes
Overlap Units:	1	Subcontract LT:	0
Queue Time:	0.0	Setup Crew:	0.00
Wait Time:	0.0	Run Crew:	2.00
Setup Time:	0.0	Tool Code:	
Run Time/Batch Qty:	1.0	Supplier:	
Run Time:	1.0	Inventory Value:	0.00
Move Time:	0.0	Subcontract Cost:	0.00
Yield%:	100.00%	Comments:	no

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

Routing Changes

Change Operations in Routing

Body: Changes

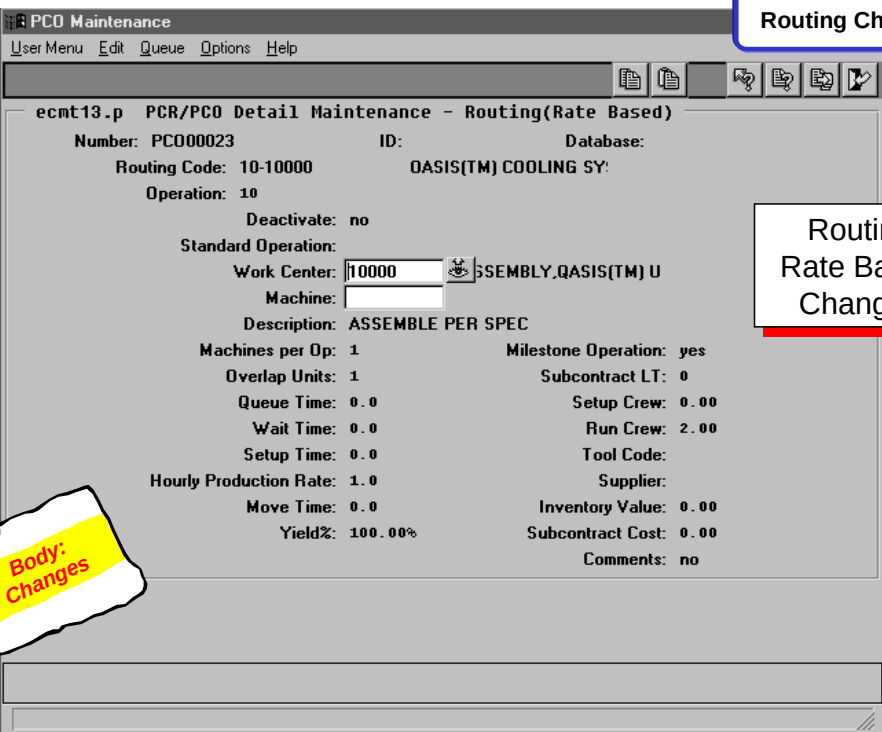
PCO-PR-210

Routing File Maintenance — PCR/PCO Detail Maintenance - Routing

Menu Number 1.9.2.13

- Add operations to a routing
- Delete operation steps
 - Sets an end effective date when the PCO is incorporated
- Edit routing changes

1.9.2.13 – PCO Maintenance



Routing Changes

Routing Rate Based Changes

Body: Changes

PCO Maintenance
User Menu Edit Queue Options Help

ecmt13.p PCR/PCO Detail Maintenance - Routing(Rate Based)

Number: PC000023 ID: Database:
Routing Code: 10-10000 OASIS(TM) COOLING SY:
Operation: 10

Deactivate: no
Standard Operation:
Work Center: 10000 ASSEMBLY.QASIS(TM) U
Machine:
Description: ASSEMBLE PER SPEC

Machines per Op: 1 Milestone Operation: yes
Overlap Units: 1 Subcontract LT: 0
Queue Time: 0.0 Setup Crew: 0.00
Wait Time: 0.0 Run Crew: 2.00
Setup Time: 0.0 Tool Code:
Hourly Production Rate: 1.0 Supplier:
Move Time: 0.0 Inventory Value: 0.00
Yield%: 100.00% Subcontract Cost: 0.00
Comments: no

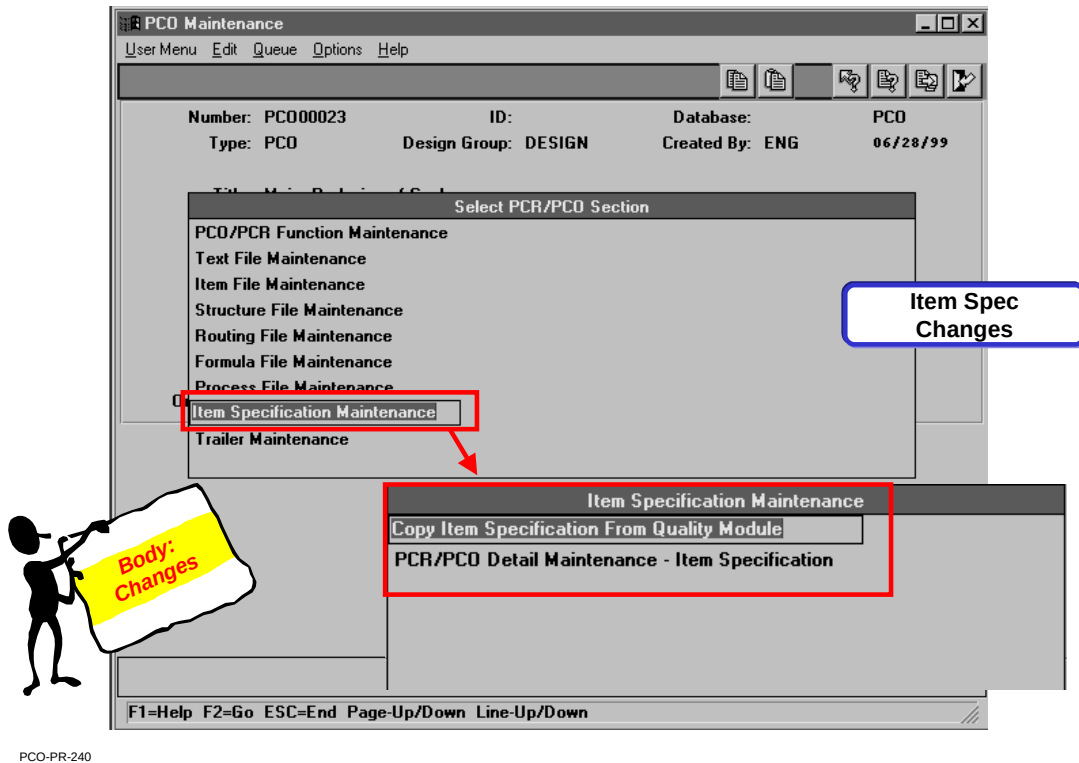
PCO-PR-220

Routing File Maintenance — PCR/PCO Detail Maintenance - Routing (Rate Based)

Menu Number 1.9.2.13

- Similar to *PCR/PCO Detail Maintenance - Routing* (see page 149)
- Same differences as between standard Routing Maintenance 14.13.1 and Routing Maintenance (Rate Based) 14.13.2

1.9.2.13 – PCO Maintenance



Item Specification Maintenance

Menu Number 1.9.2.13

- Copy quality records to PCO
- Manage changes to the quality tests associated with an item



Also discussed in Quality Management Training Guide

1.9.2.13 – PCO Maintenance

Item Spec Changes

ecqmcpy.p Copy Item Specification From Quality Module

Number: PC000023 ID: Database: PC0

Title: Major Redesign of Coolers

Item Number: 90-100 KOOLAIRE(TM) COOLANT

Routing: 90-100 MIX AND BOTTLE COOLANT

Seq	Op	Characteristic	Specification	Measure
1	10	Enter your name	*	Actual value
2	10	Purity	>99.9	%
	10	perfume potency	.012	maximum

Enter to Select

Copy Original to Modify in PCO

Body: Changes

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

PCO-PR-260

Item Specification Maintenance — Copy Item Specification From Quality Module

Menu Number 1.9.2.13

- Bring item specification records into PCO for modification
- Select from current sequence of steps for a given parent item and routing
- Once records are copied, use *PCR/PCO Detail Maintenance - Item Specification* (see page 153) to modify
 - Start with a copy of existing routing to simplify editing

1.9.2.13 – PCO Maintenance

The screenshot displays the 'PCO Maintenance' window with the following fields and annotations:

- Item Spec Changes** (blue box): Located at the top right of the window.
- Selected Item Spec** (orange box): Points to the 'Item Number: 90-100' field.
- Change Quality Tests** (red box): Located at the bottom right, with a red arrow pointing to the 'Test Sequence' field.
- Body: Changes** (yellow box): A stick figure character is holding this box on the left side of the screen.

Form Fields:

- Window Title: PCO Maintenance
- Menu: User Menu Edit Queue Options Help
- File: ececd4mt.p
- Title: PCR/PCO Detail Maintenance - Item Specification
- Number: PCO00023 ID: Database: PCO
- Title: Major Redesign of Coolers
- Item Number: 90-100 KOOLAIRE(TM) COOLANT
- Routing: 90-100 MIX AND BOTTLE COOLANT
- Operation: 10
- Test Sequence: 3
- Deactivate: no
- Test Sequence: 3
- Attribute: Strength
- Property Name: perfume potency
- UOM: maximum
- Test Method:
- Specification: .009
- Comments: no

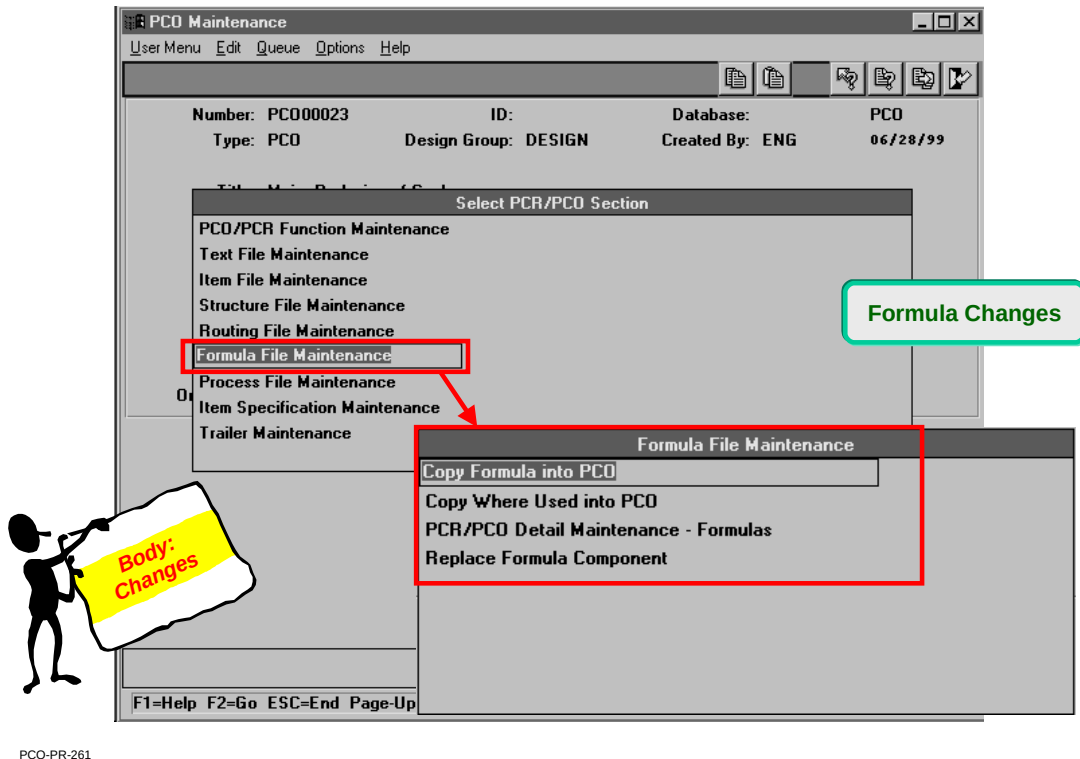
Footer: F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

Item Specification Maintenance — PCR/PCO Detail Maintenance - Item Specification

Menu Number 1.9.2.13

- Add test steps
- Deactivate test steps
 - Sets an end effective date when PCO is incorporated
- Modify existing test steps

1.9.2.13 – PCO Maintenance



PCO-PR-261

Formula File Maintenance

Menu Number 1.9.2.13

- Use Enable PCC Formula Maintenance 15.22 to access formula options
- Use Formula File Maintenance to:
 - Copy processes to the PCO
 - Copy where used
 - Maintain process records with Detail Maintenance
 - Replace components in multiple bills

1.9.2.13 – PCO Maintenance

PCO Maintenance

User Menu Edit Queue Options Help

ecmt88.p Copy Formula into PCO

Number: PC000023 ID: Database: PCO

Title: Major Redesign of Coolers

Structure/Formula Copy

Parent Item	Description	UM	Eff Date	Rev	Levels
90-100	KOOLAIRE(TM) COOLAN	EA	06/29/99		1

Copy Records into PCO

Level	Component Item	Description	Reference
* 1	88-300	BOTTLE,PLASTIC,1 LITR	
* 1	90-2000	PARFUM	
* 1	90-3000	ALCOHOL,MEDICAL GRA	
1	90-4000	HYDROGEN OXIDE,LIQU	

Enter to Select

Body: Changes

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

Formula File Maintenance — Copy Formula into PCO

Menu Number 1.9.2.13

- Specify Parent Item
- Displays current bill of material
 - You select records to copy into PCO
 - Modify any selected records with *PCR/PCO Detail Maintenance - Formulas* (see page 157)

1.9.2.13 – PCO Maintenance

PCO Maintenance
User Menu Edit Queue Options Help

ecmt09.p Copy Where Used into PCO
Number: PC000023 ID: Database: PCO
Title: Major Redesign of Coolers

Where Used Copy					
Component Item	Description	UM	Eff Date	Rev	Levels
88-6000	GREY COLORANT	L	06/29/99		1

Level	Parent Item	Description	Reference
* 1	88-100	CASE,AUTO-UNIT	
1	88-1000		
* 1	88-200	CASE,HOME/INDUST UN	
1	88-300	BOTTLE,PLASTIC,1 LITR	

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

PCO-PR-263

Formula File Maintenance — Copy Where Used into PCO

Menu Number 1.9.2.13

- Works the same as *Copy Formula into PCO* (see page 155) except:
 - Displays bill of material as indented where-used bill of material
- Useful to make the same change to several formulas

1.9.2.13 – PCO Maintenance

Formula Changes

ecmt07.p PCR/PCO Detail Maintenance - Formulas

User Menu Edit Queue Options Help

Number: PC000023 ID: Database: PCO

Title: Major Redesign of Coolers

Parent Item: 90-100
Component Item: 90-4000

Reference: Batch Size: 1,000.0 ea

Deactivate: no
Qty Per: 750.0
Qty Type: P
Batch Percent: 75.0

Scrap: 0.00%
LT Offset:
Op:

Structure Type:
Mandatory: yes
Default Option: yes
Remarks:
Comments: no

Sequence Number: 1
Forecast: 100.00%
Option Group:
Process:

Body: Changes

Change Records in Formula

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

PCO-PR-264

Formula File Maintenance — PCR/PCO Detail Maintenance - Formulas

Menu Number 1.9.2.13

- Add items to formulas
- Delete formula records
 - Sets end effective date when PCO is incorporated
- Edit formula changes

1.9.2.13 – PCO Maintenance

PCO Maintenance

User Menu Edit Queue Options Help

Component Item: 90-4000 Description: HYDROGEN OXIDE,LIQU

UM: L

Component Item	Description	Multiplier
90-40010	HYDROGEN-OXIDE,CRY	1.0

Replace with Item Description Multiplier

90-40010 HYDROGEN-OXIDE,CRY 1.0

Adding new record.

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

Formula Changes

Body: Changes

Replace Components

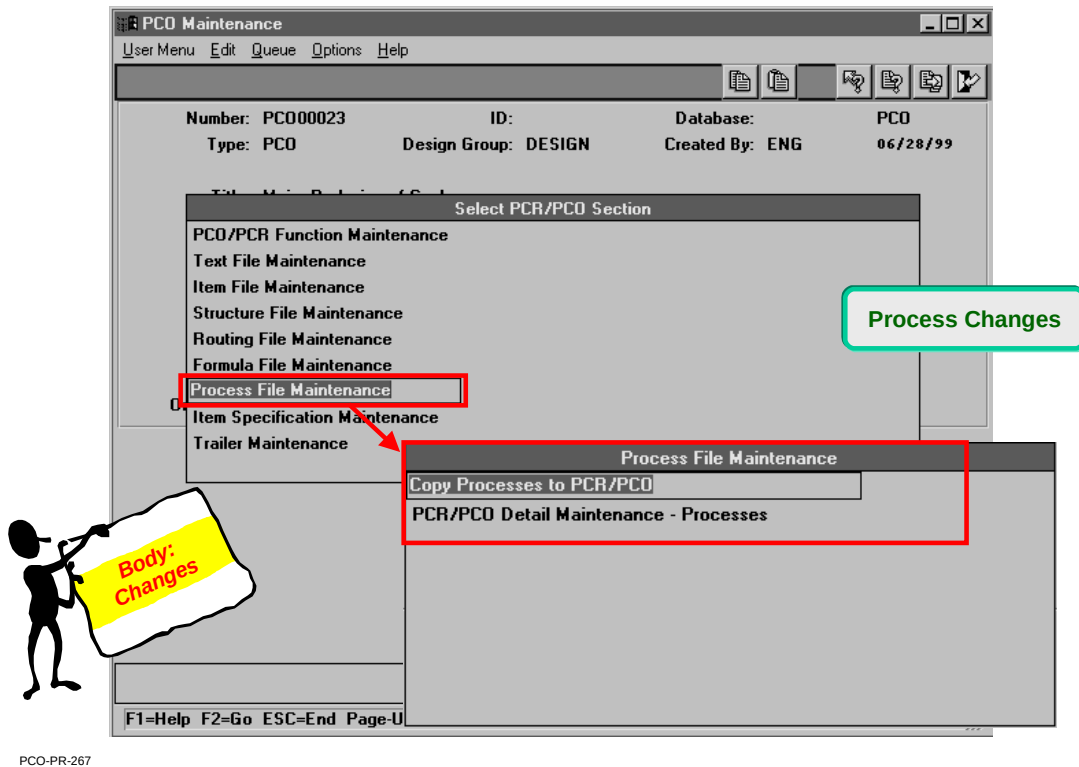
PCO-PR-265

Formula File Maintenance — Replace Formula Component

Menu Number 1.9.2.13

- Replace one component with another across multiple bills of material
 - Searches formula records already included in the PCO and marks the formulas as deactivated
 - Adds new formulas with the new component in place of the old component
- Modified quantities are multiplied against the *Multiplier* value
- Other detailed formula data is copied from the existing record

1.9.2.13 – PCO Maintenance



PCO-PR-267

Process File Maintenance

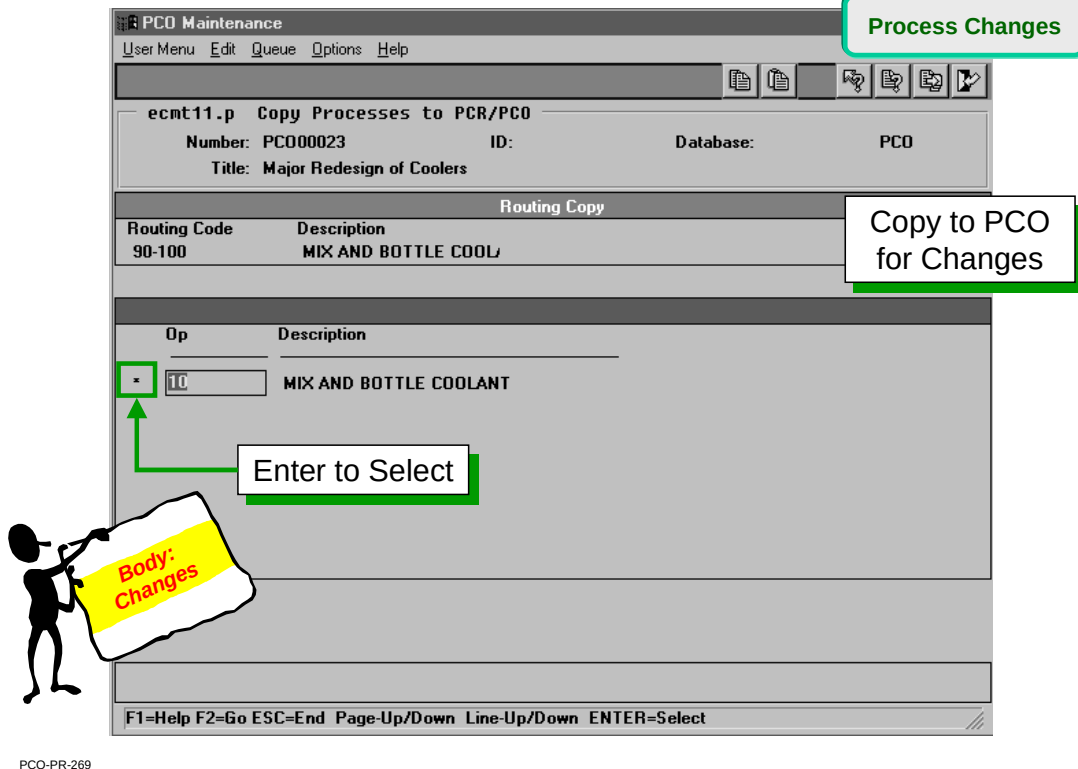
Menu Number 1.9.2.13

- Copy processes
- Modify existing processes with Detail Maintenance

Note Routings cannot be maintained with this function

- Use *Routing File Maintenance* (see page 147) for routing processes

1.9.2.13 – PCO Maintenance



PCO Maintenance
User Menu Edit Queue Options Help

ecmt11.p Copy Processes to PCR/PCO
Number: PC000023 ID: Database: PCO
Title: Major Redesign of Coolers

Routing Copy	
Routing Code	Description
90-100	MIX AND BOTTLE COOL

Op	Description
* 10	MIX AND BOTTLE COOLANT

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down ENTER=Select

PCO-PR-269

Process File Maintenance — Copy Processes to PCR/PCO

Menu Number 1.9.2.13

- Copy process records to PCO for modification
- Displays operations and lets you select which steps to include
- Once the records are copied, use *PCR/PCO Detail Maintenance - Processes* (see page 161) to modify
 - Start with a copy of existing processes to simplify editing

1.9.2.13 – PCO Maintenance

PCO Maintenance

User Menu Edit Queue Options Help

ecmt12.p PCR/PCO Detail Maintenance - Processes

Number: PC000023 ID: Database:

Routing Code: 90-100 KOOLAIRE(TM) COOLAN

Operation: 10 Batch Qty: 1,000.0 ea

Deactivate: no

Standard Operation:

Work Center: 30000 PROCESS.KOOLAIRE

Machine: 3000

Description: MIX AND BOTTLE COOL

Machines per Op: 1 Milestone Operation: yes

Overlap Units: 1 Subcontract LT: 0

Queue Time: 0.0 Setup Crew: 0.00

Wait Time: 0.0 Run Crew: 2.00

Setup Time: 0.0 Tool Code:

Run Time/Batch Qty: 1000.0 Supplier:

Run Time: 1.0 Inventory Value: 0.00

Move Time: 0.0 Subcontract Cost: 0.00

Yield%: 100.00% Comments: no

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

Body: Changes

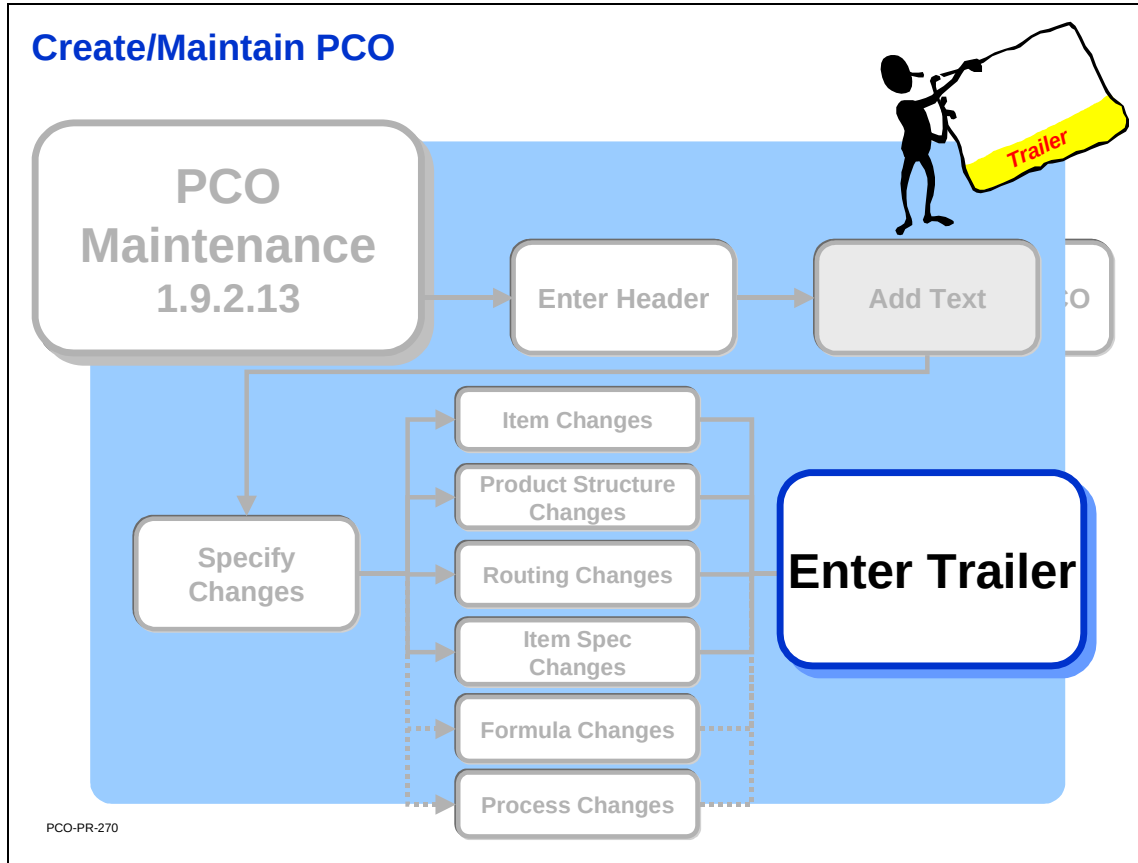
Process Changes

Change Processes

Process File Maintenance — PCR/PCO Detail Maintenance - Processes

Menu Number 1.9.2.13

- Add operations to a process
- Deactivate operation steps
 - Sets an end effective date when PCO is incorporated
- Edit process changes



Enter Trailer

- Can be used to close or reopen a PCO (before it is distributed)
- Displays information for the release process:
 - Routing slip
 - Distribution group
 - Date submitted
 - Date approved
- The only option that appears in the PCO maintenance section menu for closed, but undistributed, PCOs

1.9.2.13 – PCO Maintenance

The screenshot shows the 'PCO Maintenance' window with the following fields and annotations:

- Optional Fields:** A yellow box highlights the 'Expected Cost' (1,200.00), 'Routing Slip' (PCO-R1), 'Distribution' (DIST), and 'Disposition' fields.
- Tracking Fields for System:** A green box highlights the 'Submitted', 'Approved', 'Released', 'Effective', 'Implemented', and 'Closed Date' fields.
- Can only Close Before Distribution:** A blue box highlights the 'Closed' field (set to 'no') and the 'PCO Ref' field, with an arrow pointing from the 'Closed' field to the 'PCO Ref' field.
- Calendar:** A small calendar window for January 2000 is visible on the right.
- Trailer:** A stick figure is holding a yellow sign that says 'Trailer'.
- Footer:** A status bar at the bottom contains the text: 'F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste'.

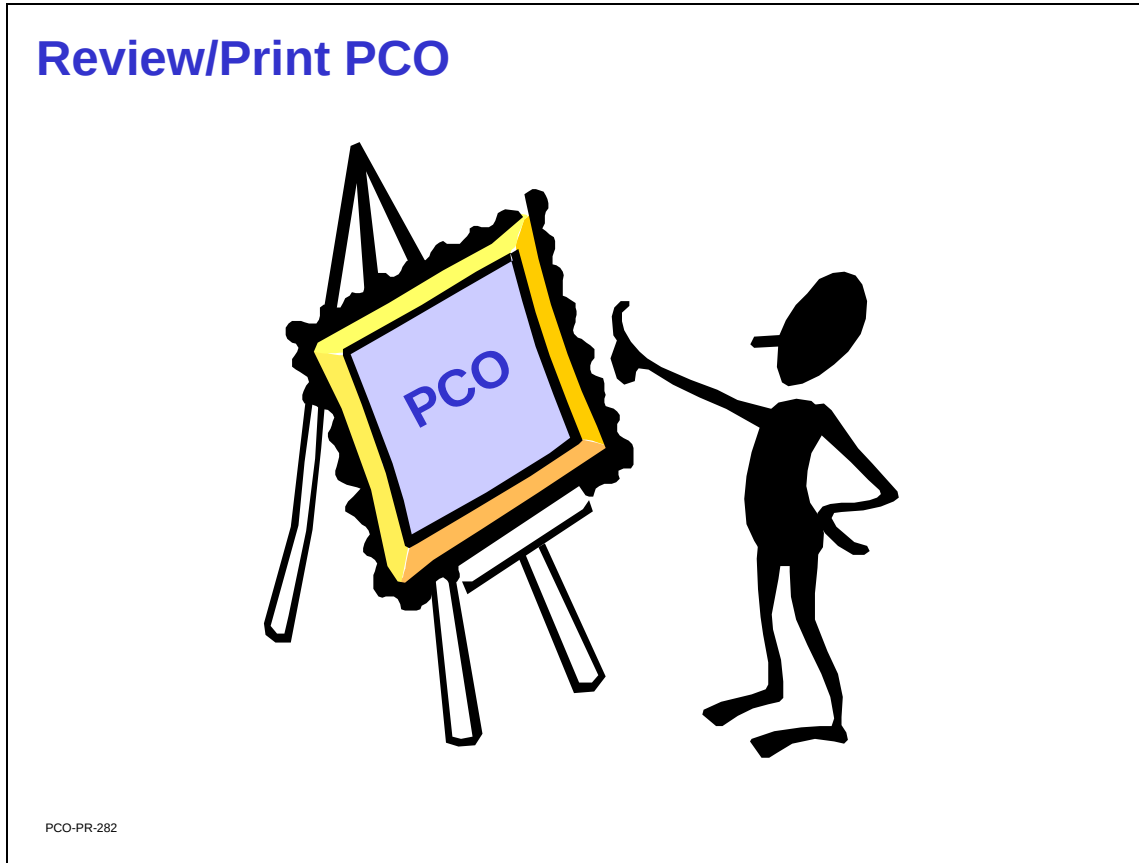
Trailer Maintenance

Menu Number 1.9.2.13

- *Closed* = Yes closes the PCO
 - A PCO cannot be reopened after it is distributed
- *Disposition* is an optional user-defined code for describing arrangement, grouping, and urgency of PCO
 - Generalized codes validated against `ecm_ecr_dspn`
- *Mandatory* is optional, indicating the latest day by which the PCO *must* be implemented

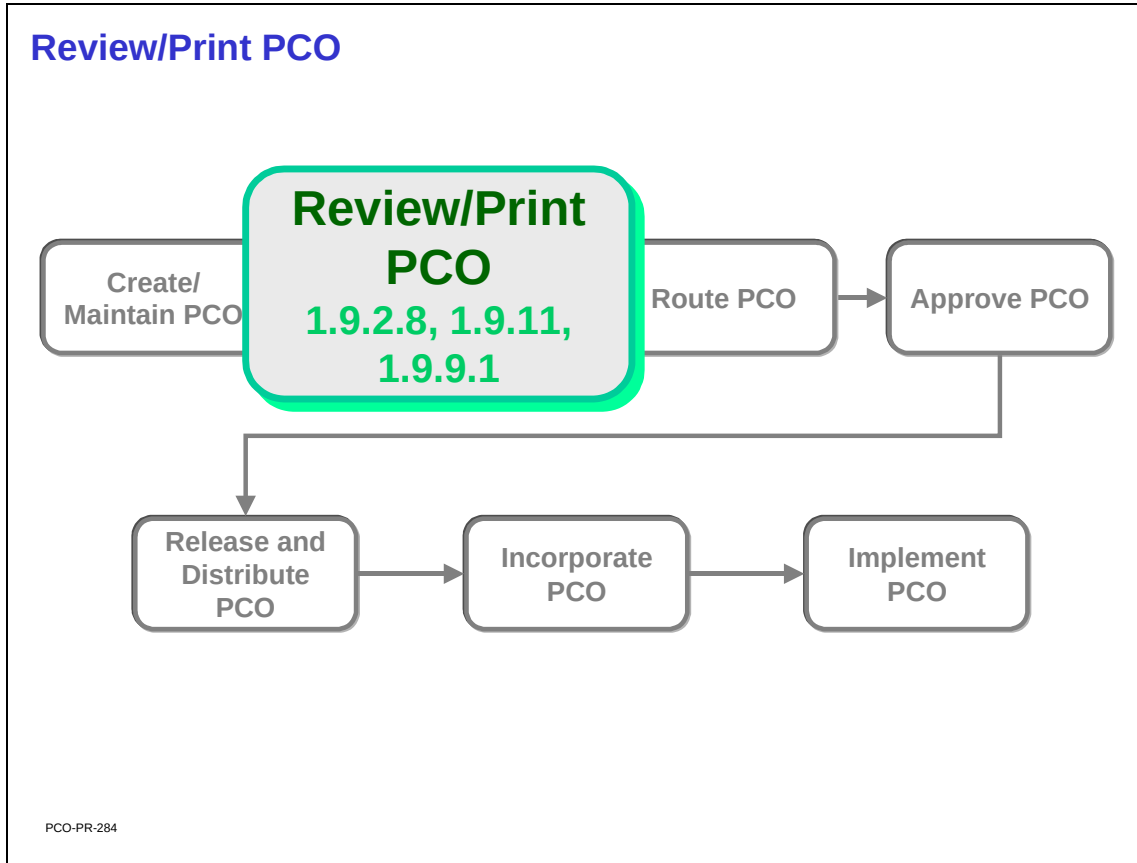


Exercise option: Continue with the material or go to *Create a PCO with Item Changes* on page 192, *Create a PCO with Product Structure Changes* on page 193, *Create a PCO with Routing Changes* on page 194, *Create a PCO with Item Spec Changes* on page 195, *Create a PCO with Formula Changes (optional)* on page 196, and *Create a PCO with Process Changes (optional)* on page 197



Review/Print PCO

- Optional in your procedure



Inquiries, Browsers, and Printing PCOs

- Individual Printing
- Browse Status
- Range Printing

1.9.2.8 – PCR/PCO Detail Inquiry

The screenshot shows a window titled "PCR/PCO Detail Inquiry" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area displays the following information:

Number: **PCO00023** ID: Database: Output: window

Type: PCO Design Group: DESIGN Created By: ENG ECR 06/28/99

Title: Major Redesign of Coolers
Reason: A major enhancement to the motor installed as part of the ORSIS Cooler is required to increase its competitive advantage

Class: DESIGN User Code [1]:
Originator: Field User Code [2]:

At the bottom, a status bar shows: F1=Help F2=Go ESC=End *Next/Prev* Ctrl-X/C/V=Cut-Copy-Paste

For Individual
PCOs

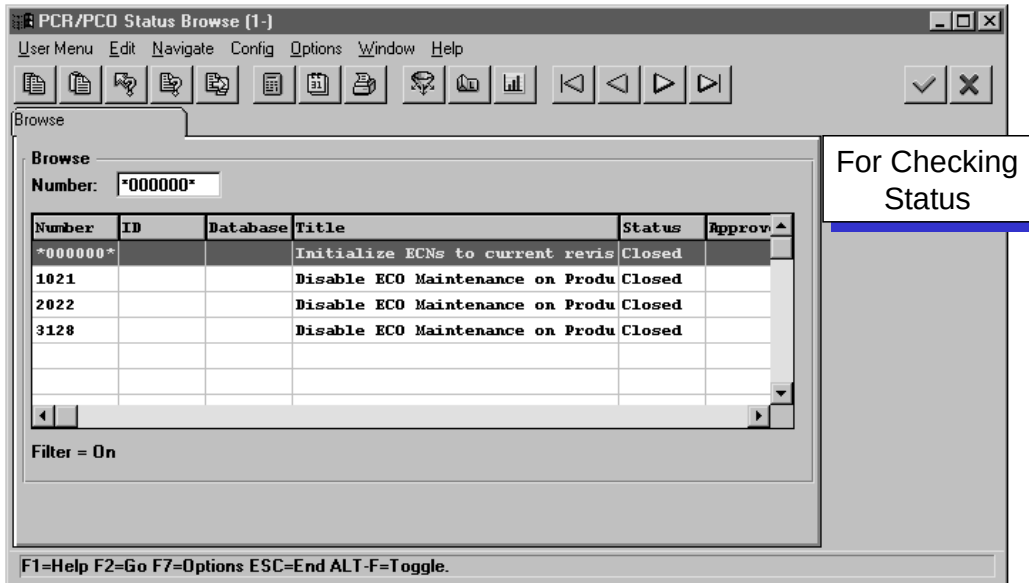
PCO-PR-286

PCR/PCO Detail Inquiry

Menu Number 1.9.2.8

- Prints similar to *Print PCR/PCO* 1.9.9.1 (see page 169) but designed for just a single inquiry

1.9.11 – PCR/PCO Status Browse



PCO-PR-288

PCR/PCO Status Browse

Menu Number 1.9.11

- Status shown as a column in the browse
- Blank status is Pre-submission

1.9.9.1 – Print PCR/PCO

The screenshot shows a window titled "Print PCR/PCO" with a menu bar (User Menu, Edit, Queue, Options, Help) and a toolbar. The main area contains two columns of input fields:

- Left Column:** Number, ID, Database, Type, Design Group, Created By, Status, User Code 1, User Code 2.
- Right Column:** To (repeated for each field in the left column).

Below these columns is a section with status filters:

- Pre-submission: ☐ yes
- Submitted: ☐ no
- Approved: ☐ no
- Released: ☐ no
- Incorporated: ☐ no
- Implemented: ☐ no
- Closed: ☐ no

To the right of these filters are fields for:

- Comment Page: 1 To: 99
- Text Order: 1 To: 99
- Approvals: no
- PCO/PCR: PCO

Annotations on the image:

- A green box highlights the status filters and the "PCO/PCR" field, with a callout: "For Ranges of PCOs".
- A green box highlights the "Pre-submission" filter, with a callout: "Example: Print all PCOs Pre-submission".

At the bottom, a status bar shows keyboard shortcuts: F1=Help F2=Go ESC=End Ctrl-X=Cut Ctrl-C=Copy Ctrl-V=Paste.

PCO-PR-287

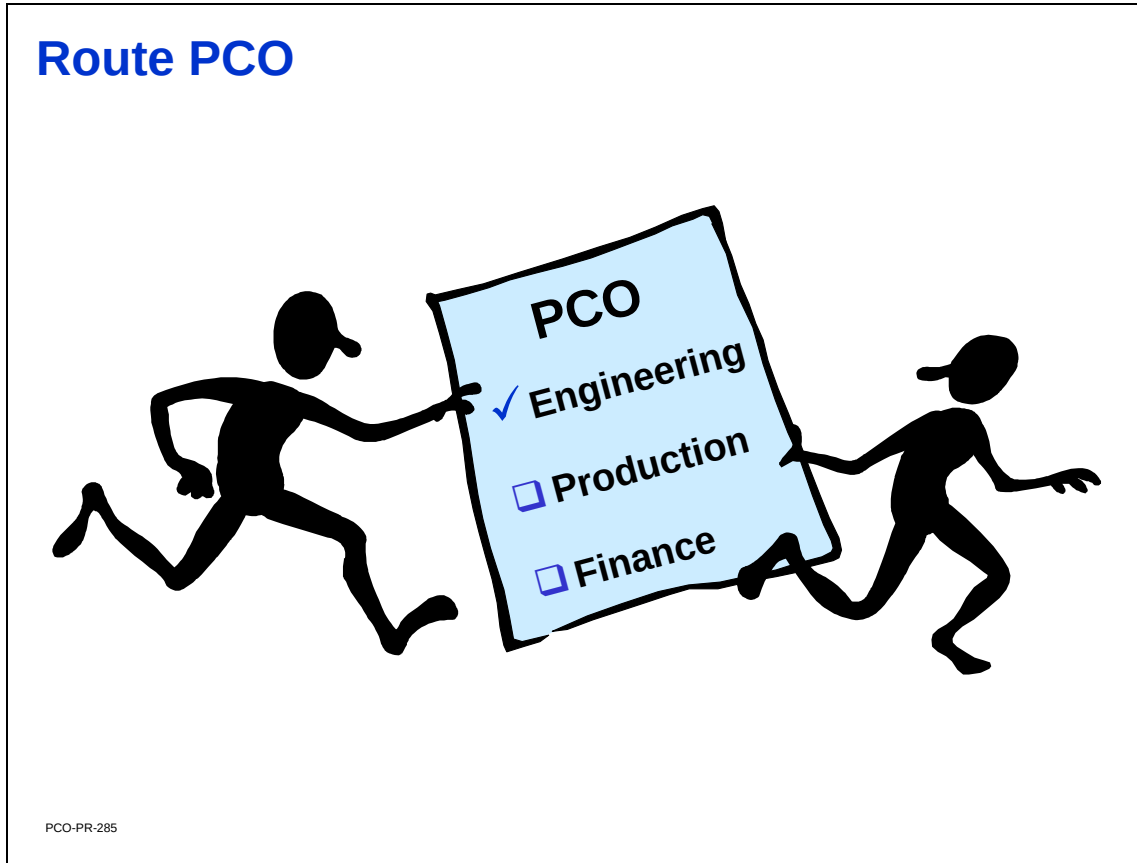
Print PCR/PCO

Menu Number 1.9.9.1

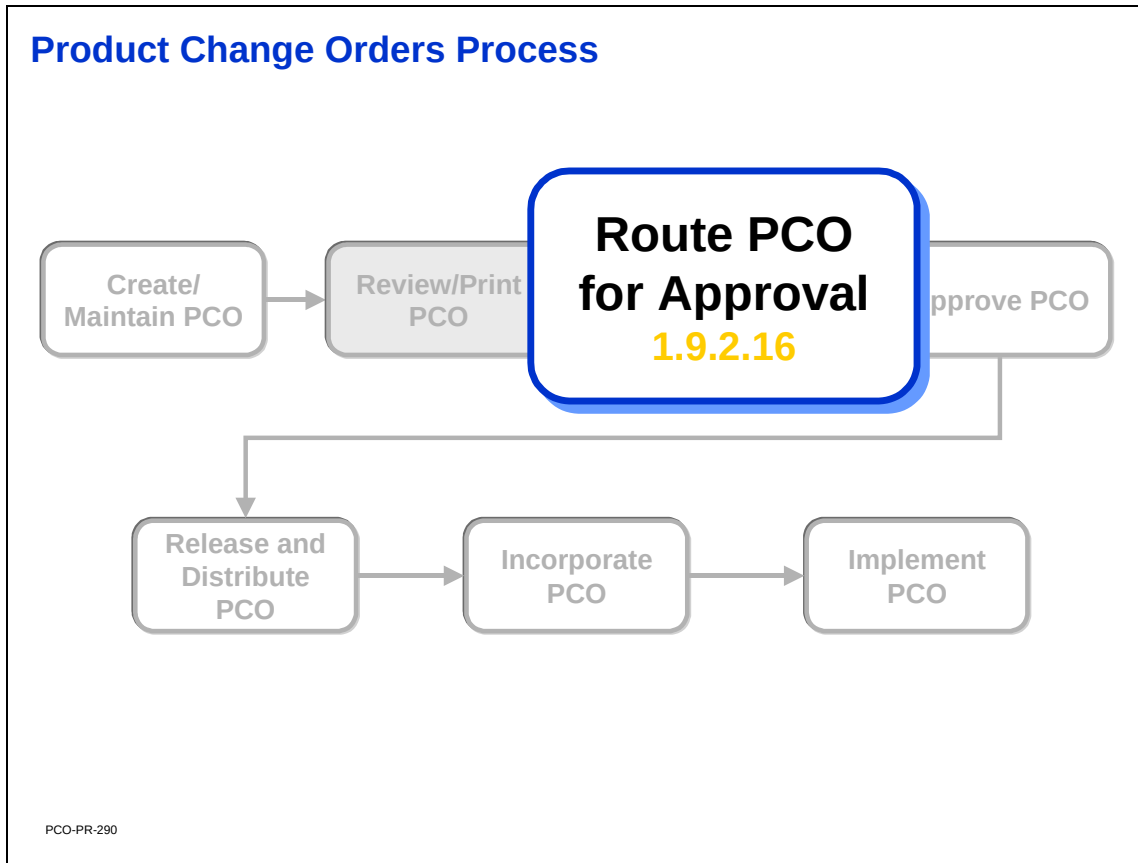
- Provides a complete printout of all PCO/PCR information for ranges of PCOs/PCRs
 - Prints header and status information, then (as appropriate) the approval group detail, item master detail, BOM detail in indented format, routing, process, and formula information, item specification data, and all text comments
 - Bill of materials section of the report prints only the PCO bill and includes the current Qty Per from the product structure or formula record and the PCO Qty Per
 - If a component has been deactivated, DEACTIVATED prints in the PCO Qty Per column



Exercise option: Continue with the material or go to *Check Status and Print PCOs* on page 198



Route PCO



Route PCO for Approval

- Send the PCO to members of the Approval group for their consideration, approval, comment, rejection, or reapproval
- Once the PCO has been routed, MFG/PRO restricts any changes to the document to ensure that the approved version is the most current version

1.9.2.16 – Route PCO for Approval

Route PCO for Approval

User Menu Edit Queue Options Help

Number: PC000023 ID: DBase: DocType: PCO
Type: PCO Dsgn Grp: DESIGN By: ENG Unsubmt Only: yes

Number	ID	Database	Title	By	Sub Date
PC000023			Major Redesign of Coolers	ENG	

Number	ID	Database	Title	By	Sbmt	Cmnt
PC000023			Major Redesign of Coolers	ENG	yes no	

Select in the Top Frame

Move to the Bottom Frame to Approve

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

PCO-PR-300

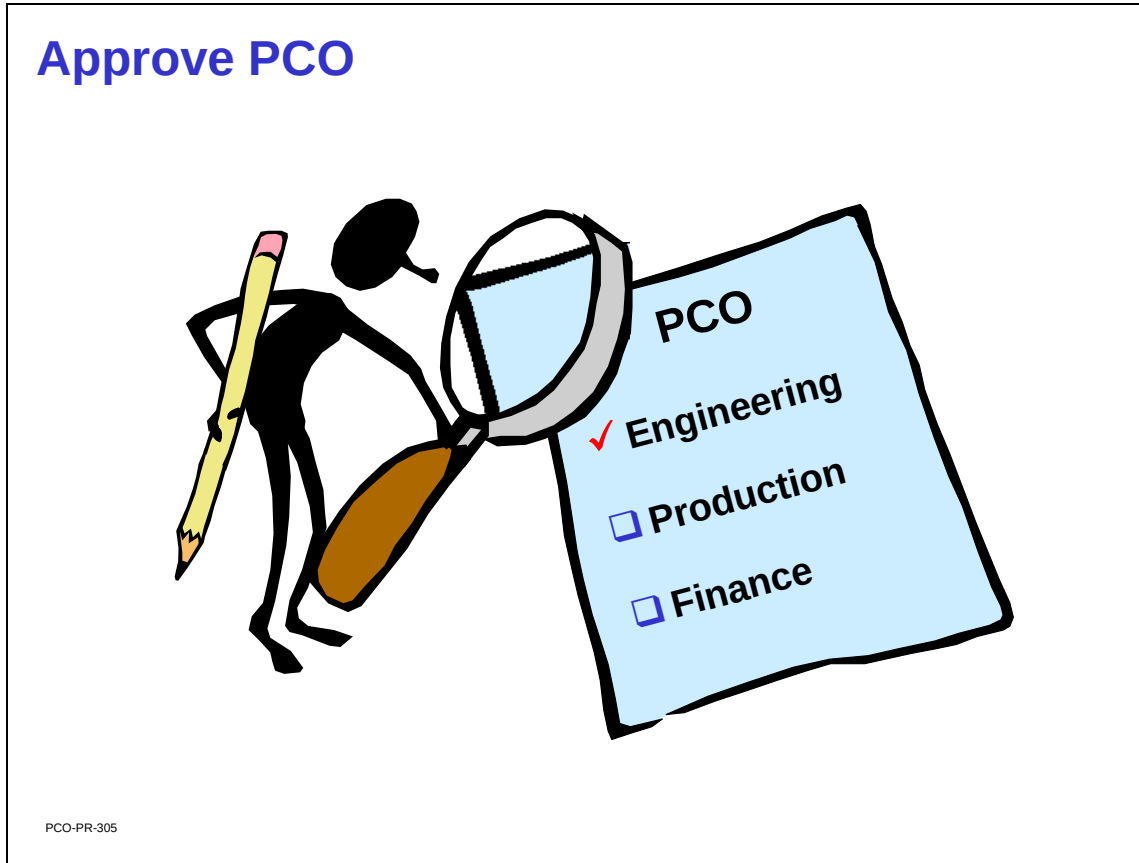
Route PCO for Approval

Menu Number 1.9.2.16

- Lists PCOs in order, beginning with the PCO you enter in the first frame
 - *Unsubmit Only* = Yes selects all PCOs that have not been routed for approval yet
- When you select a PCO for submittal in the top frame, it copies to the bottom frame
 - *Sbmit* = Yes submits the PCO for approval

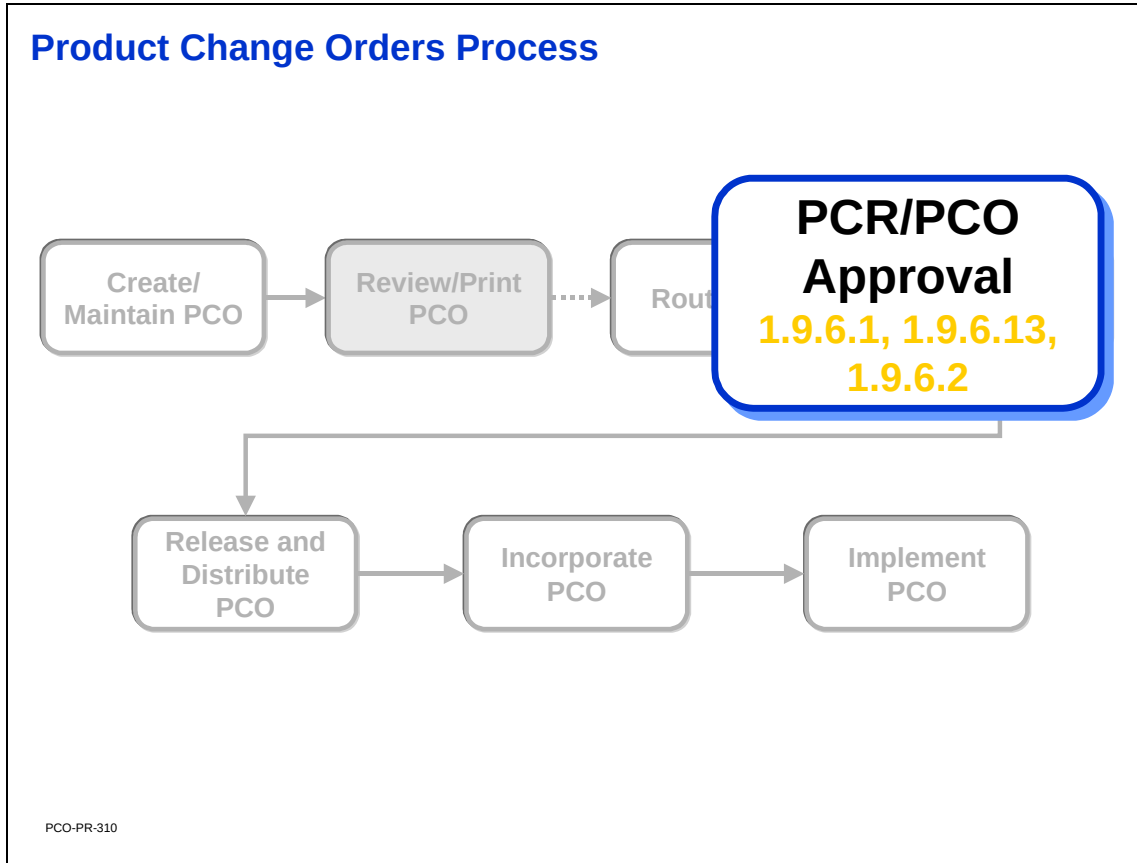


Exercise option: Continue with the material or go to *Route PCOs for Approval* on page 199



Approve PCO

- Assign approval, rejection, or reapproval
 - Severity levels must be used to allow approval groups to re-route PCOs for reapproval



PCR/PCO Approval

- When the PCO has been routed, the recipients enter their approval, comments, rejection, or reapproval

1.9.6.1 – PCR/PCO Approval

PCR/PCO Approval

User Menu Edit Queue Options Help

Number: PC000023 DocType: PCO
Appr Group: APPROVAL User Id: MFG Next Only: no Unsigned Only: yes

DocNbr	Appr Grp	Seq	Appr	ByReRt
PC000023	APPROVAL	10		no

Shows Pending Only

DocNbr	Group	Appr	Cmmt	ByReRt
PC000023	APPROVAL	yes	no	no

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

PCO-PR-320

PCR/PCO Approval

Menu Number 1.9.6.1

- When *Unsigned Only* = Yes, only pending approvals display (use = No to change prior approval)
- Select PCO for approval in top frame
- Set *Appr* = Yes in lower frame to approve
- If disapproved and routing slip allow for rerouting, a prompt display asks for the reroute level



Exercise option: Continue with the material or go to *Approve PCOs* on page 199

1.9.6.13 – Detail Approval Maintenance

Detail Approval Maintenance

User Menu Edit Queue Options Help

Number: PC000023 ID: Database: Doc Type: PC0

Group	Description	Seq	Re-Rt Level	Re-Route	Approved
APPROVAL	PCC Approval Group	10	10	yes	

Group	Seq	Re-Rt Level	Re-Route	Approved	Appr Date	Appr By	Cmnt
APPROVAL	10	10	yes	no	/ /		no

WARNING
This Function
Overrides Normal
Approval Process

F1=Help F2=Go ESC=End *Next/Prev* Ctrl-X/C/V=Cut-Copy-Paste

PCO-PR-303

Detail Approval Maintenance

Menu Number 1.9.6.13

- Allows override of the normal approval process
- Disapproved documents will not be rerouted

Warning Should be password controlled since it provides administrative override of normal approval process

1.9.6.2 – Approval Browse

Approval Browse (1-)

User Menu Edit Navigate Config Options Window Help

Browse

Number: PC000023

Number	ID	Database	Document Type	Routed Date	Sequence	Group	Date
PC000023			PCO	06/29/99	10	APPROVAL	

Filter = Off

F1=Help F2=Go F7=Options ESC=End ALT-F=Toggle.

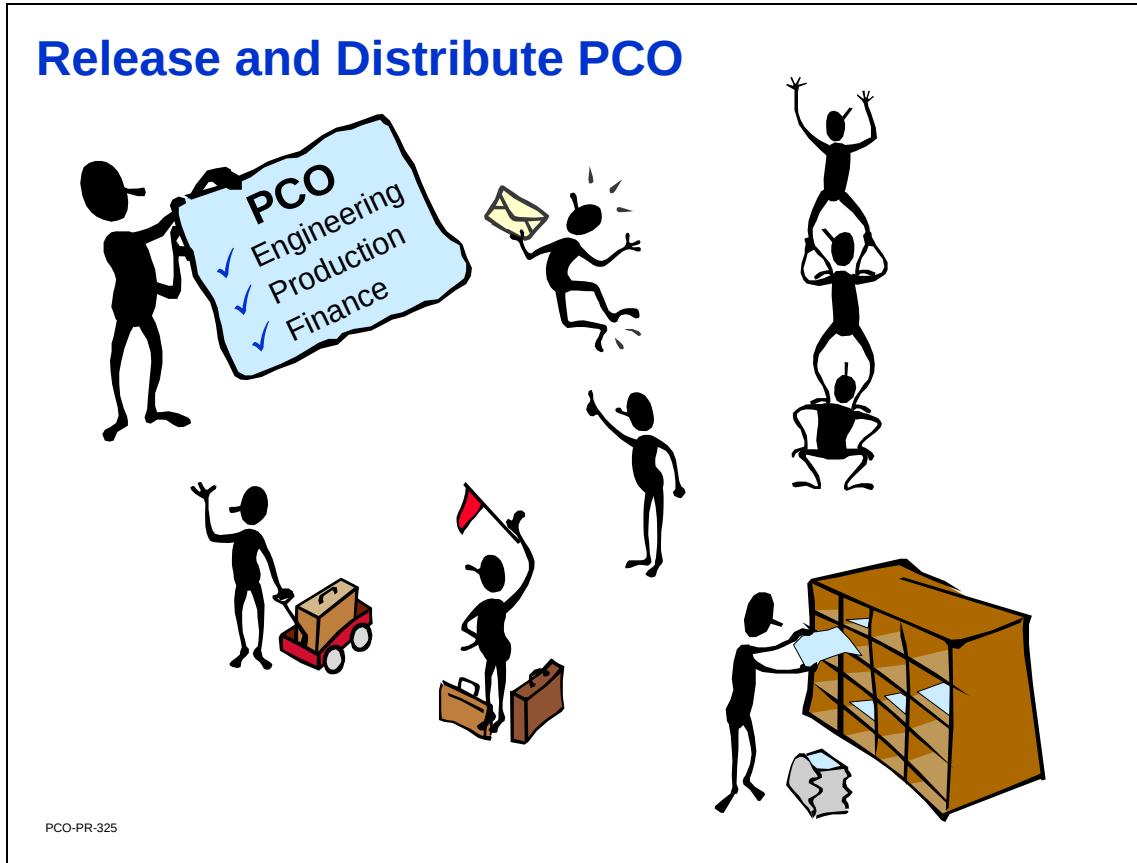
Similar to PCR/PCO Status Browse 1.9.11

PCO-PR-307

Approval Browse

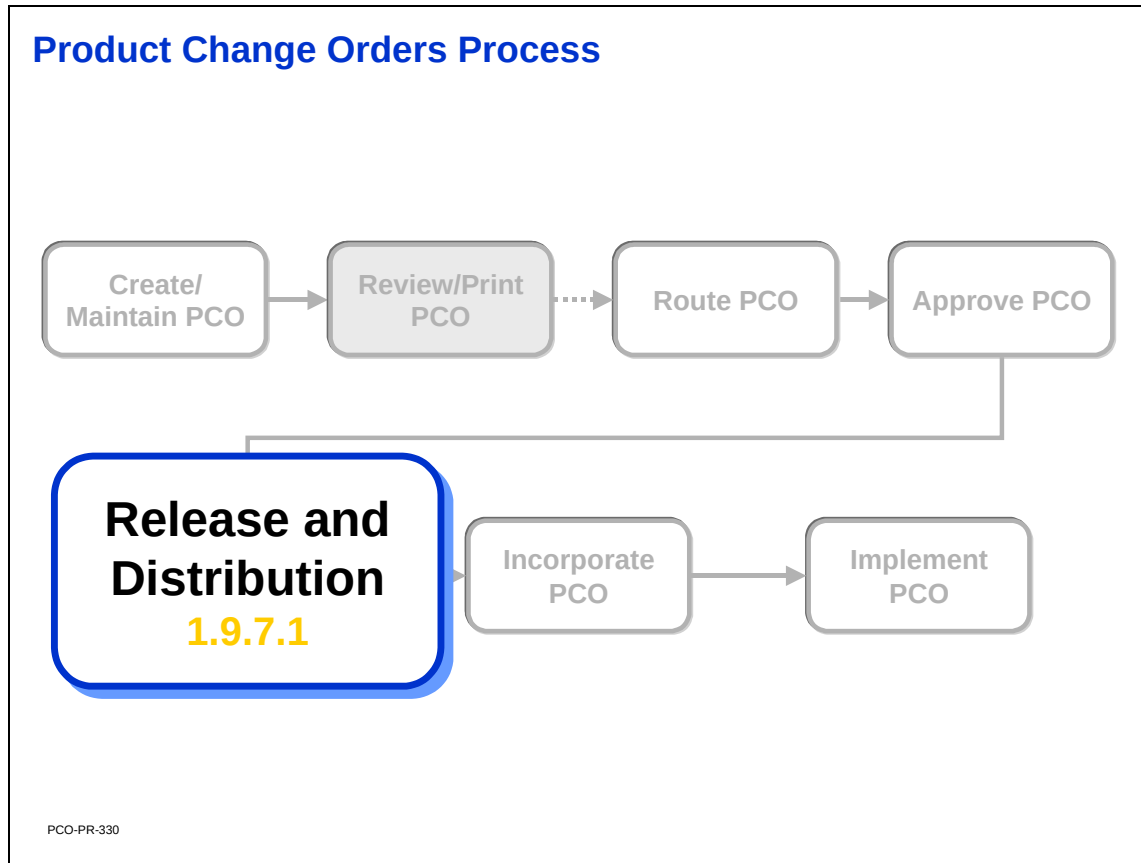
Menu Number 1.9.6.2

- Browse the approval status of various PCRs/PCOs
- Very similar to *PCR/PCO Status Browse* 1.9.11



Release and Distribute PCO

- When the approval process is complete and there are no more rerouting steps for reapproval, the PCO moves to Release and Distribution



Release and Distribution

- *Release* signals a change in ownership
- *Distribution* is based on the routing slip
 - Release is final and irrevocable once it is distributed

1.9.7.1 – Release and Distribution

Release and Distribution

User Menu Edit Queue Options Help

Number: PC000023 ID: Database: PCO
Type: PCO Created By: ENG Unreleased Only: yes

Number	ID	Database	Title	Sub Date	Batch ID
PC000023			Major Redesign of Coolers	06/29/99	no

Number	ID	Database	Title	Rels	Cmnt	Batch ID
PC000023			Major Redesign of Coolers	yes	no	

If Blank, Released & Distributed now

If Batched, Released now, Distributed with Batch

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

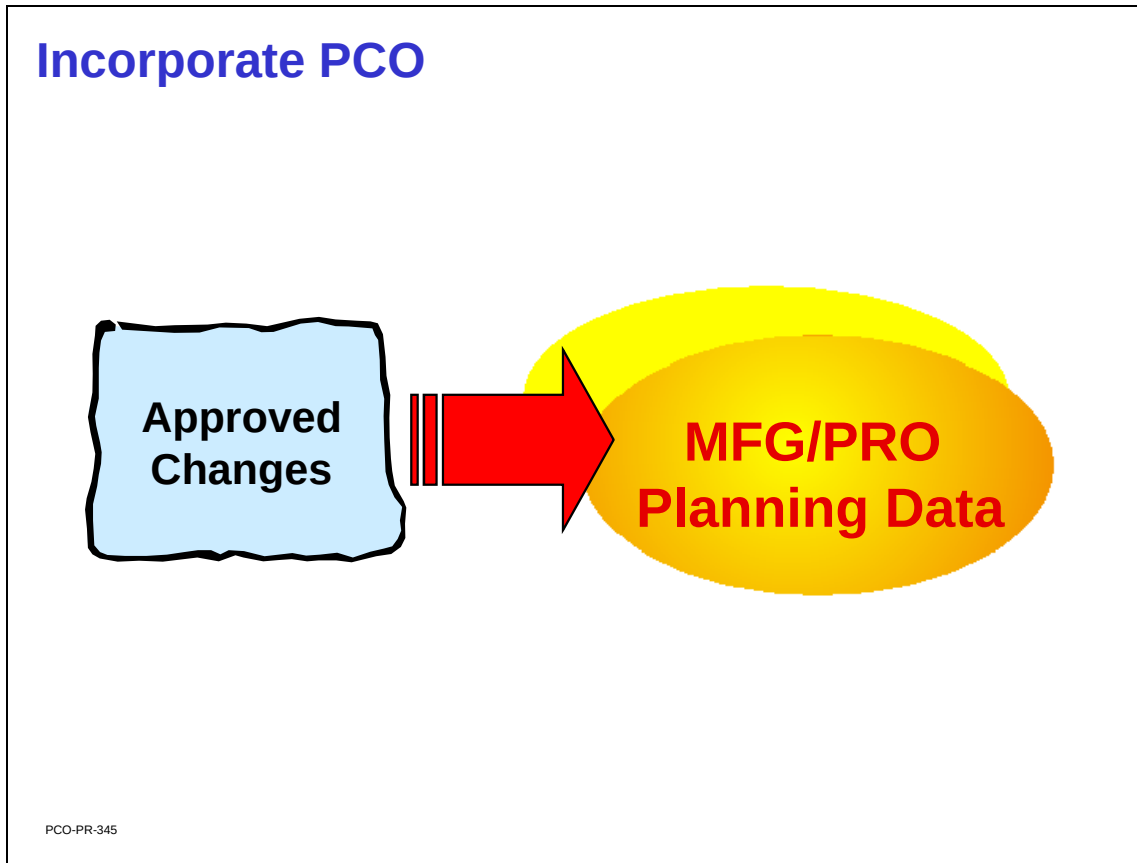
PCO-PR-340

Release and Distribution

Menu Number 1.9.7.1

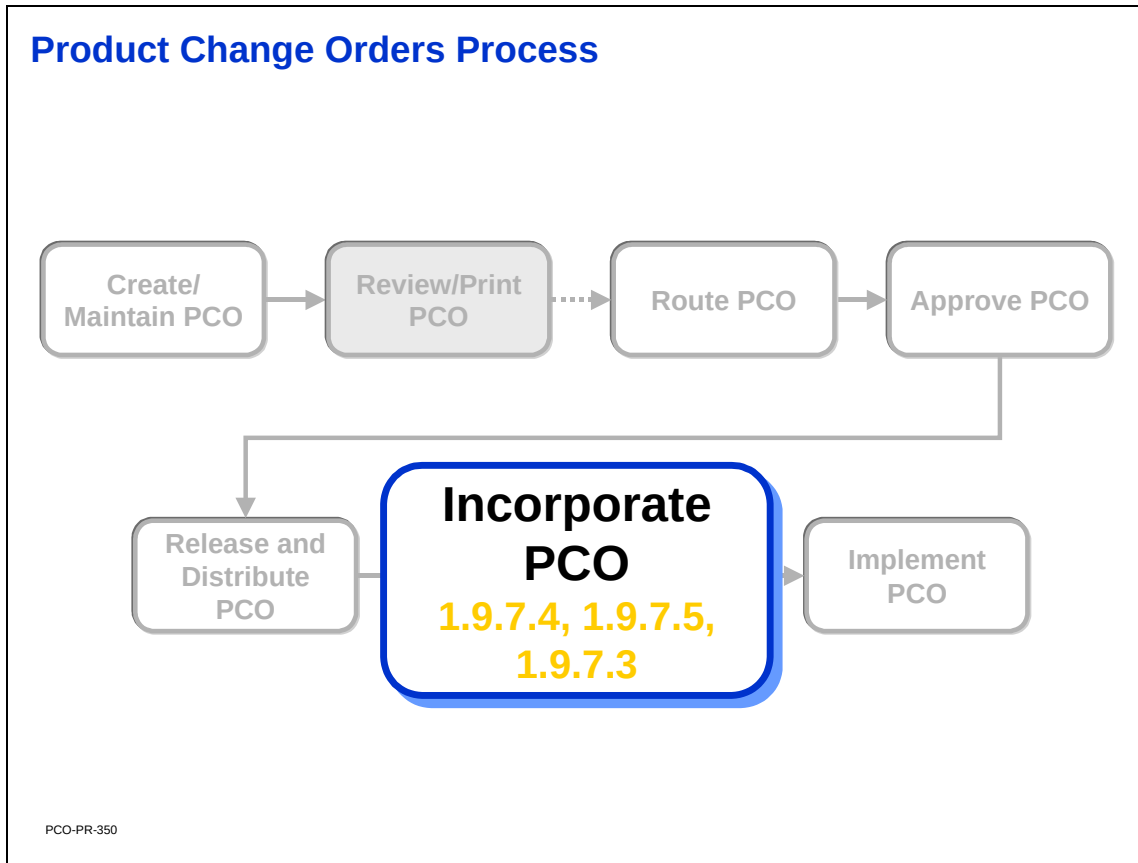
- Select PCOs in the first frame, scroll through second frame, and select a PCO for release/distribution
- Set *Rels* = Yes and enter a valid Batch ID or leave blank
 - Once you enter a Batch ID, the PCO is released; the PCO is distributed when the specified batch is executed
 - If Batch ID is left blank, then the PCO is released and distributed immediately
- Released PCOs may be unreleased if they have not been distributed

- Run Release and Distribution with *Unreleased Only* = No, select the PCO, and then set *Rels* = No
- Distributed PCOs cannot be unreleased or modified
- When a PCO is released and/or distributed, its status changes and the dates of release and distribution are recorded
- When the PCO is distributed, it is printed for all members of the distribution group and becomes visible to Incorporation Selection 1.9.7.4 (see page 184)



Incorporate PCO

- Incorporation specifies an effective date for PCO changes to move into the production files
- Makes the changes available for planning



Incorporation into Planning Data

- Moves the changes in the PCO that affect product structures, formulas, processes, routings, and item specifications into the planning files once there is an effectivity date
 - Makes data available to MRP, DRP, and other pre-production MFG/PRO modules
 - Until implemented, a PCO incorporation date may be changed and re-incorporated

Note Incorporation of different revisions of the same parent item must be done in revision sequence.

1.9.7.4 – Incorporation Selection

Incorporation Selection

User Menu Edit Queue Options Help

Number: PC000023 PCO ID: Database: Unincorporated Only: yes
 Type: PCO Created By: ENG

Number	PCO ID	Database	Title	Eff Date
PC000023			Major Redesign of Coolers	07/01/99

Number	PCO ID	Database	Title	Eff Date
PC000023			Major Redesign of Coolers	07/01/99

Select to Run Incorporation Next

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

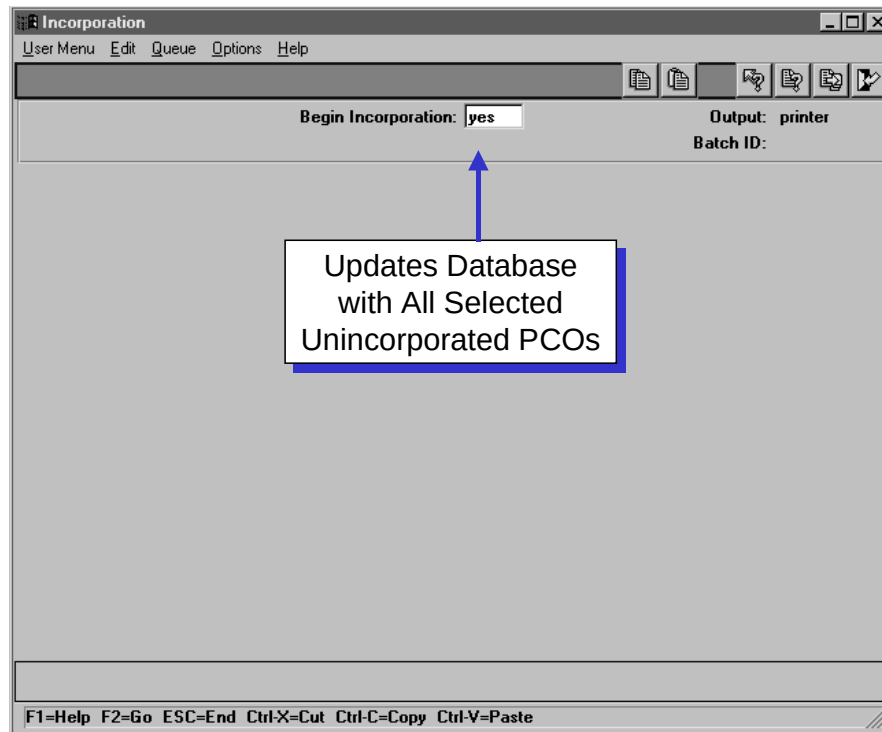
PCO-PR-360

Incorporation Selection

Menu Number 1.9.7.4

- Displays released and distributed PCOs, beginning with PCO specified in *Number*
- *Unincorporated Only* allows you to filter display to pending PCOs
- If two PCOs change data for the same item, they must be incorporated in revision level sequence
- Select PCOs for incorporation and specify incorporation date
 - Incorporation does not happen until Incorporation 1.9.7.5 (see page 185) is run

1.9.7.5 – Incorporation



PCO-PR-370

Incorporation

Menu Number 1.9.7.5

- Updates the production database with all unincorporated PCOs that have effectivity dates
- Normally run as a batch process



Exercise option: Continue with the material or go to *Release and Incorporate PCO* on page 199

1.9.7.3 – Incorporation Planning Report

Number	ID	Database	Site	Effective	Cost Method(C/G)	Output
PC000023				06/29/99	GL	

Evaluate PCO
Inventory Effects
Optional Report

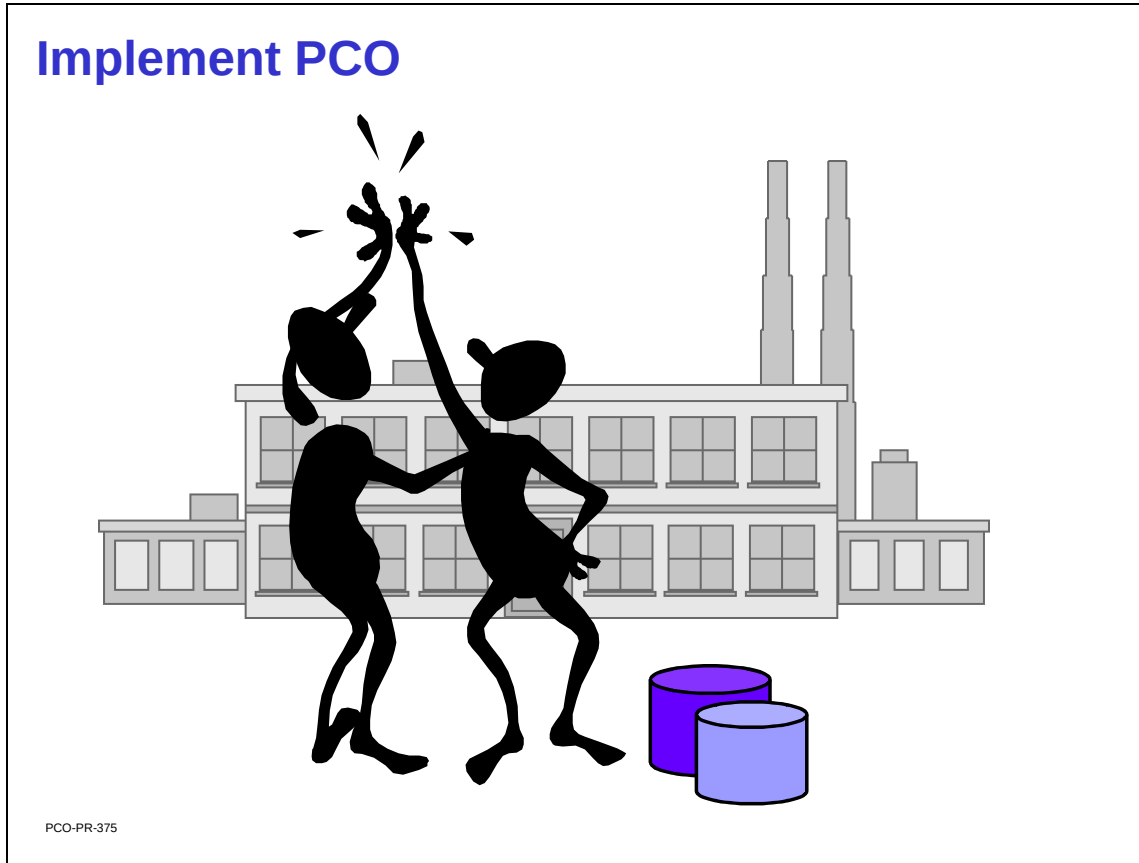
F1=Help F2=Go ESC=End *Next/Prev* Ctrl-X/C/V=Cut-Copy-Paste

PCO-PR-373

Incorporation Planning Report

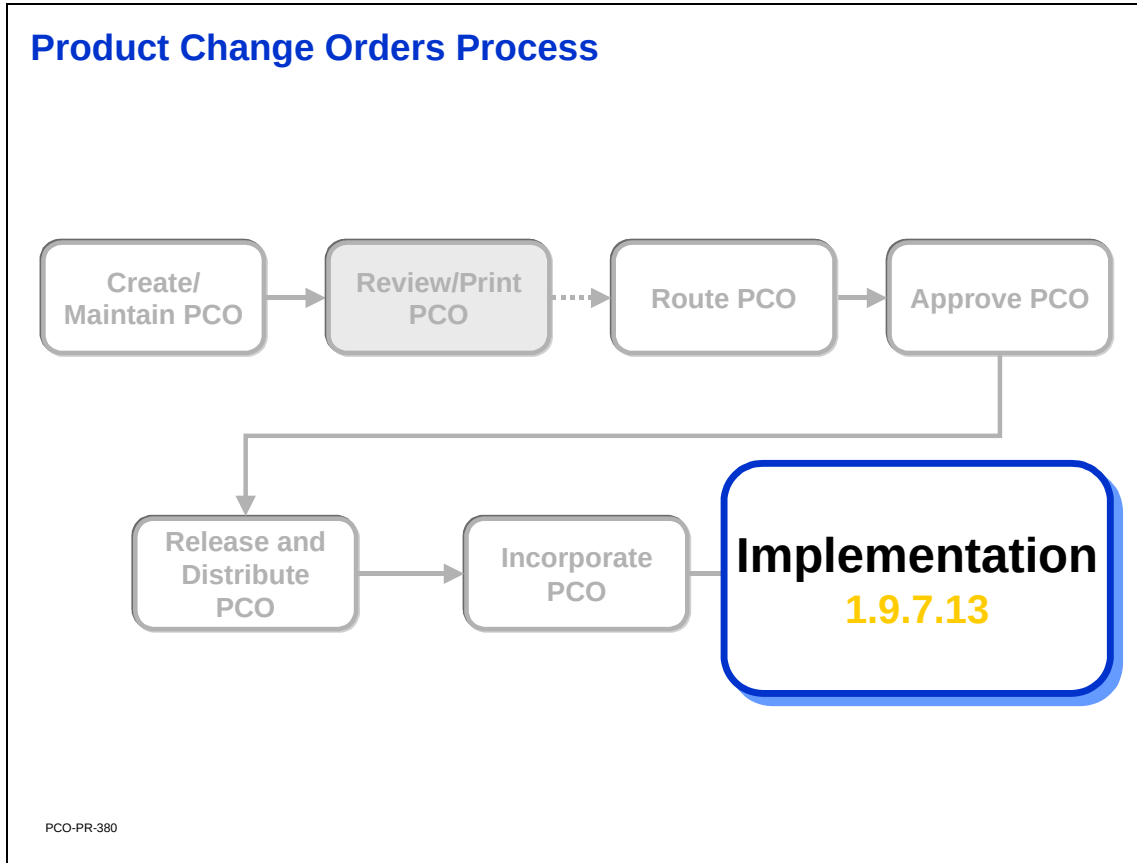
Menu Number 1.9.7.3

- Incorporation makes PCO information available to planning
- Use this optional report to evaluate the effects of the PCO on inventory



Implement PCO

- Copies changes to item data records from incorporated PCOs when effective dates are reached



- Dependent on the effectivity date of the Incorporated PCOs
- Usually run as a daily batch

1.9.7.13 – Implementation

PCO-PR-390

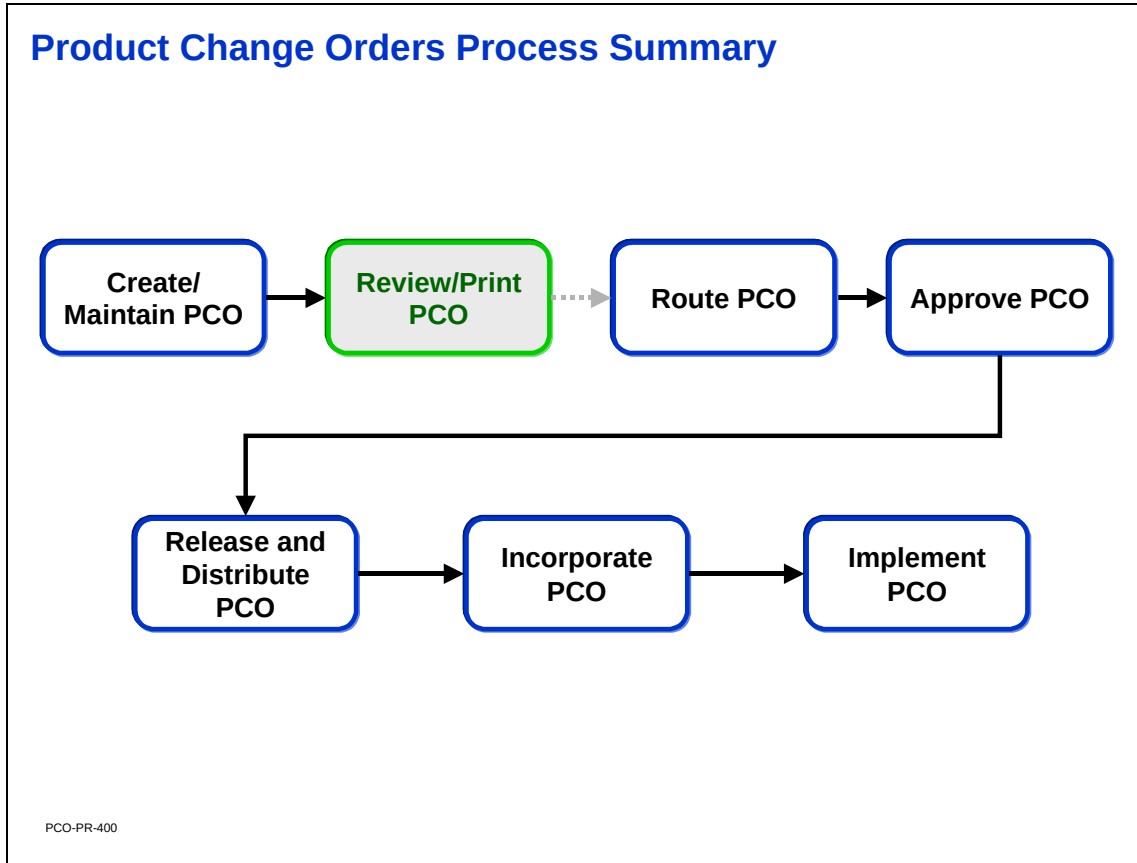
Implementation

Menu Number 1.9.7.13

- *Begin Implementation* = Yes, and then specify an output device
- Typically this function is run automatically every day
 - Can specify a Batch ID to execute daily



Exercise option: Continue with the material or go to *Implement PCO* on page 200

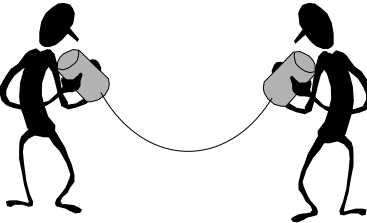


Summary of Product Change Orders Process

Miscellaneous PCR/PCO Functions



- PCR/PCO Close
♦ 1.9.14



- PCR/PCO Import/Export
♦ 1.9.13



- PCR/PCO Delete/Archive
♦ 1.9.15

PCO-PR-405

Miscellaneous PCR/PCO Functions

- PCR/PCO Close 1.9.14
 - Close or reopen any PCO that has not been assigned an effectivity date
- PCR/PCO Import/Export 1.9.13
 - Export PCO data to an ASCII text file
 - Import to restore archive files
- PCR/PCO Delete/Archive 1.9.15
 - Archive or delete closed records from the database

Processing Exercises



PCO-PR-410

Product Change Orders (PCOs) Exercises

Important The data used in these exercises may not be the same as the data shown in the screen captures in this lesson. You must have completed all the setup exercises before you can work on the processing exercises.

Create a PCO with Item Changes

Instructions: In your Item Master there are three types of Batteries, 30-100, 30-1000, and 30-10000. They were used in several different product lines in the past and now you will consolidate them under all under the same product line. Your company procedures require you to route the changes through a PCO. Create a new PCO to route these proposed changes to the Item Master.

- 1 Let MFG/PRO assign the PCO number. The number will be assigned when you complete the Type and Design group fields and press Go.

- a Assign Type = PCO, Design group = DESIGN

- b Write down the PCO number assigned for later reference: _____

Hint: Use PCO Maintenance 1.9.2.13

- 2 Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title Change Product Line

Reason All Batteries moving to Electronics

- 3 Press Go to continue past the header. Select *Item File Maintenance* and then choose *Add/Modify/Delete PCO Item Files*.

- a Add items 30-100, 30-1000, and 30-10000.

- b For each, set Comments = No.

- c Change the Product Line on each to 2000.

- d Verify the Item Type for each is = ELEC, and Group = ELECTRON.

- 4 When you return, choose *Trailer Maintenance*.

- a Using the *Mandatory* field, assign an implementation date no later than the last day of next month.

- 5 Review your PCO to be certain your changes were all included.

Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Create a PCO with Product Structure Changes

Instructions: The Nomad (TM) Solar Powered Cooling System (10-15001) uses a 44-110 automotive control unit. The current product structure assumes that there is no scrap involved in the control unit. Your recent experience shows a 5% scrap involved. In this exercise, create a new PCO to make this change.

- 1 Let MFG/PRO assign the PCO number.

- a Assign Type = PCO, Design group = DESIGN

b Write down the PCO number assigned for later reference: _____

Hint: Use PCO Maintenance 1.9.2.13

- 2** Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title	Add Scrap
Reason	10-15001 to be modified Component 44-110 shows 5% scrap

- 3** Press Go to continue past the header. Choose *Structure File Maintenance*. From this menu select *Copy Product Structure into PCO*.

a Parent Item = 10-15001

b Use your arrow keys to select 44-110, press Enter to select the component. An asterisk appears when the component is selected. Press Go to continue.

- 4** Return and choose *Structure File Maintenance* and then *PCR/PCO Detail Maintenance - Product Structures*.

a When you arrow down, you should see that one record was copied into the PCO (Parent Item = 10-15001 and Component Item = 44-110). If you do not see this record, repeat step three above until the component is copied successfully.

b Deactivate should remain = No (Do not delete the component).

c Specify a 5% scrap. Accept all the remaining default fields. Press Go to accept your changes.

- 5** When you return, choose *Trailer Maintenance*.

a Using the *Mandatory* field, assign an implementation date no later than one month from today.

- 6** Review your PCO to be certain your changes were all included.

Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Create a PCO with Routing Changes

Instructions: In this exercise, modify the routing for the 44-110 Automotive Control Unit to add a standard inspection step.

- 1 Let MFG/PRO assign the PCO number.
 - a Assign Type = PCO, Design group = DESIGN
 - b Write down the PCO number assigned for later reference: _____
Hint: Use PCO Maintenance 1.9.2.13
- 2 Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title	Adding Inspection
Reason	44-110 Adding Standard Inspection routing
- 3 Press Go to continue past the header. Choose *Routing File Maintenance*. From this menu select *Copy Routing to PCR/PCO*.
 - a Routing Code = 44-110
 - b Press Enter to select Op Code 10 (an asterisk should appear). Press Go to continue.
- 4 Return and choose *Routing File Maintenance* again, then *PCR/PCO Detail Maintenance - Routing*.
 - a When you arrow down, you should see that one record was copied into the PCO. Change the Operation code from 10 to 20 to add a new routing.
 - b Add Standard Operation INSPECT. Milestone = Yes. Comments = No.
- 5 Save the record without adding any information to the trailer.
- 6 Review your PCO to be certain your changes were all included.
Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Create a PCO with Item Spec Changes

Instructions: Engineering found that the inspection procedure for 10-15001 is not strict enough. In this exercise, modify the Quality Management specifications to make the inspection use stricter standards.

- 1 Let MFG/PRO assign the PCO number.
 - a Assign Type = PCO, Design group = DESIGN

b Write down the PCO number assigned for later reference: _____

Hint: Use PCO Maintenance 1.9.2.13

- 2** Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title Tighter Inspection

Reason Modifying Item Specs for 10-15001

- 3** Press Go to continue past the header. Choose *Item Specification Maintenance*. From this menu select *Copy Item Specification from Quality Module*.

a Item Number = 10-15001; Routing Code = 10-15000

b Press Enter to select each sequence number (an asterisk should appear next to each sequence). Press Go to continue.

- 4** Return and choose *Item Specification Maintenance*, then *PCR/PCO Detail Maintenance - Item Specification*. Arrow down to modify each of the three records copied in the last step.

a For Test Sequence 1, Width, change the specifications to a range of 14 | 14.10.

b For Test Sequence 2, Height, change the range to 3.75 | 3.85.

c For Test Sequence 3, Depth, change the range to 11.95 | 12.05.

- 5** Save the record without adding any information to the trailer

- 6** Review your PCO to be certain your changes were all included.

Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Create a PCO with Formula Changes (optional)

Instructions: Koolaire (TM) Coolant Standard, Scented (90-100) needs to have the perfume reduced in the formula because the supplier has started making the perfume in stronger concentration. In this exercise, create a PCO to indicate the reduction of one component and the increase of other components by percentage.

- 1** Let MFG/PRO assign the PCO number.

a Assign Type = PCO, Design group = DESIGN

b Write down the PCO number assigned for later reference: _____

Hint: Use PCO Maintenance 1.9.2.13

- 2** Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title	Formula Change
Reason	Modifying 90-100 to use less 90-2000 Concentration strength from supplier increased

- 3** Press Go to continue past the header. Choose *Formula File Maintenance*. From this menu select *Copy Formula into PCO*.
- a** Parent Item = 90-100
- b** Press Enter to select components 90-2000 and 90-4000 (an asterisk should appear next to each sequence). Press Go to continue.
- 4** Return and choose *Formula File Maintenance*, then *PCR/PCO Detail Maintenance - Formulas*. Arrow down to access both records copies in the previous step.
- a** For 90-2000, change the Batch Percent from 10 to 8. Press Go. The Quantity Per changes automatically.
- b** For 90-4000, change the Batch Percent from 75 to 77. Press Go. The Quantity Per changes automatically.
- 5** Save the record without adding any information to the trailer.
- 6** Review your PCO to be certain your changes were all included.
- Hint: Use PCR/PCO Detail Inquiry 1.9.2.8*

Create a PCO with Process Changes (optional)

Instructions: The plastic bottle molding process has a scrap factor that has never been figured into the process. Select the process operation for the 1-litre Plastic Bottle, 88-300, and create a PCO for a yield of only 98%.

- 1** Let MFG/PRO assign the PCO number.
- a** Assign Type = PCO, Design group = DESIGN

b Write down the PCO number assigned for later reference: _____

Hint: Use PCO Maintenance 1.9.2.13

- 2** Title and Reason fields are optional. Leave them blank, or create a simple description for this PCO:

Title	Process Change
Reason	Modifying 88-300 to change yield Scrap factor of 2%

- 3** Press Go to continue past the header. Choose *Process File Maintenance*, then *Copy Processes to PCR/PCO*.

a Routing Code = 88-300

b Press Enter to select process 10 (an asterisk should appear next to the process). Press Go to continue.

- 4** Return and choose *Process File Maintenance*, then *PCR/PCO Detail Maintenance - Processes*. Arrow down to modify the record copies in the previous step.

a For 88-300 operation 10, change the Yield Percent to 98%. Press Go.

- 5** Save the record without adding any information to the trailer.

- 6** Review your PCO to be certain your changes were all included.

Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Check Status and Print PCOs

Instructions: In each of the exercises above you reviewed individual PCOs with a Detail Inquiry. In this exercise, view the status of all your PCOs.

- 1** Review the status of the PCOs created in the exercises above.

Hint: Use PCR/PCO Status Browse 1.9.11

- 2** Print the PCOs you created. Leave the PCO Number field blank.

a *Pre-submission* = Yes. **All** other status fields = No. PCO/PCR = PCO.

Hint: Use Print PCR/PCO 1.9.9.1

Route PCOs for Approval

Instructions: Submit your first three PCOs to start the routing and approval process.

- 1 Select the first three PCOs you created in these exercises (refer to the PCO numbers you recorded). Leave the number field blank and leave *Unsubmit Only* = Yes. This will filter for just the unsubmitted PCOs.

- a Select a PCO in the first frame, press Enter.

- b When it appears in the second frame, verify *Sbmt* = Yes. Press Go to submit.

Hint: Use Route PCO for Approval 1.9.2.16

- 2 Review your PCOs to verify that their status changed. You should see three records **Status** = **Submit** and the remaining PCOs **Status** = **<blank>**.

Hint: Use Master Files, PCR/PCO Status Browse 1.9.11

Approve PCOs

Instructions: Approve the first two PCOs submitted in the last exercise.

- 1 Leave the number field blank, select *DocType* = PCO, and review *Unsigned Only* = Yes. Select just the first two PCOs submitted. Mark each APPROVED.

Hint: Use PCR/PCO Approval 1.9.6.1

- 2 Review your PCOs to verify that their status changed. You should see two PCOs Status = Approved, one PCO Status = Submit, and the remaining PCOs Status = blank.

Hint: Use PCR/PCO Status Browse 1.9.11

Release and Incorporate PCO

Instructions: Release and distribute your first PCO. Incorporate these changes into MFG/PRO for planning consideration.

- 1 Select your first PCO for release. Leave the Number field blank, *Type*=PCO, and *Unreleased Only* = Yes. Then select the first PCO in the top frame to copy to the bottom frame. Verify *Rels* = Yes and press Go to release (leave Batch ID blank). You should see a message that the PCO was distributed successfully.

Hint: Use Release and Distribution 1.9.7.1

- 2** Review your PCOs to verify the PCO that was released and distributed. You should now see *Status = Released* for your first PCO.
Hint: Use PCR/PCO Status Browse 1.9.11
- 3** Select your released PCO for incorporation. Leave the Number field blank, *Type=PCO*, and *Unincorporated Only = Yes*.
 - a** Select the PCO in the first frame to bring it into the bottom frame. Assign the *Eff Date = today*. Press Go to continue.
Hint: Use Incorporation Selection 1.9.7.4
- 4** Incorporate all PCOs with effective dates for today.
Hint: Use Incorporation 1.9.7.5
- 5** Review your PCOs to verify that the latest status change. You should now see *Status = Incorp* for your first PCO.
Hint: Use PCR/PCO Status Browse 1.9.11

Implement PCO

Instructions: Implement your incorporated PCO fully into MFG/PRO.

- 1** Run the implementation process.
Hint: Use Implementation 1.9.7.13
- 2** Review your PCOs to verify that the latest status change. You should now see *Status = Closed* for your first PCO since it has completed the full processing cycle: Created/Routed/Approved/Distributed/Incorporated/Implemented (Closed).
Hint: Use PCR/PCO Status Browse 1.9.11



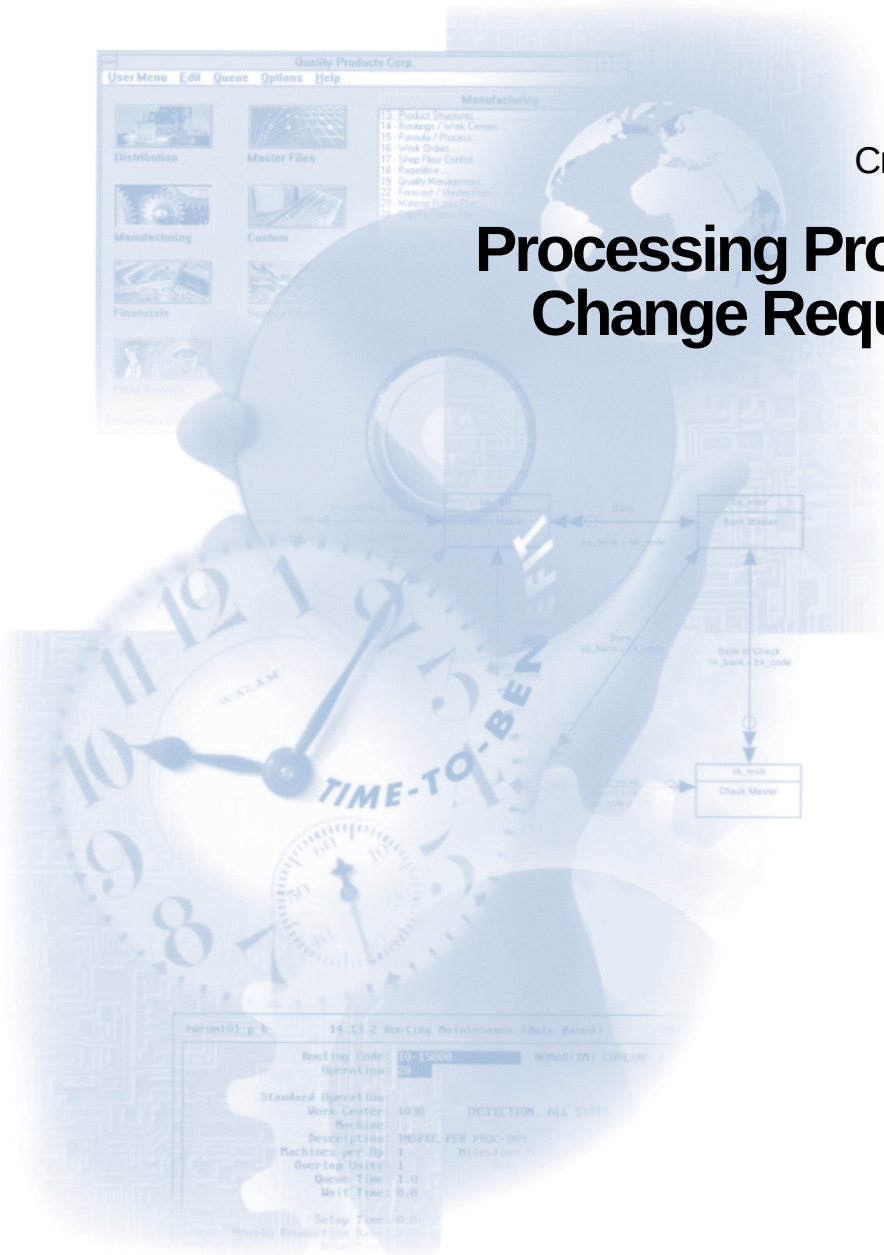
Course Overview

- ✓ Introduction to Product Change Control
- ✓ Business Considerations
- ✓ Set up Product Change Control
- ✓ Process Product Change Orders (PCOs)
- ◆ Process Product Change Requests (PCRs)

PCO-PR-420

CHAPTER 5

Processing Product Change Requests



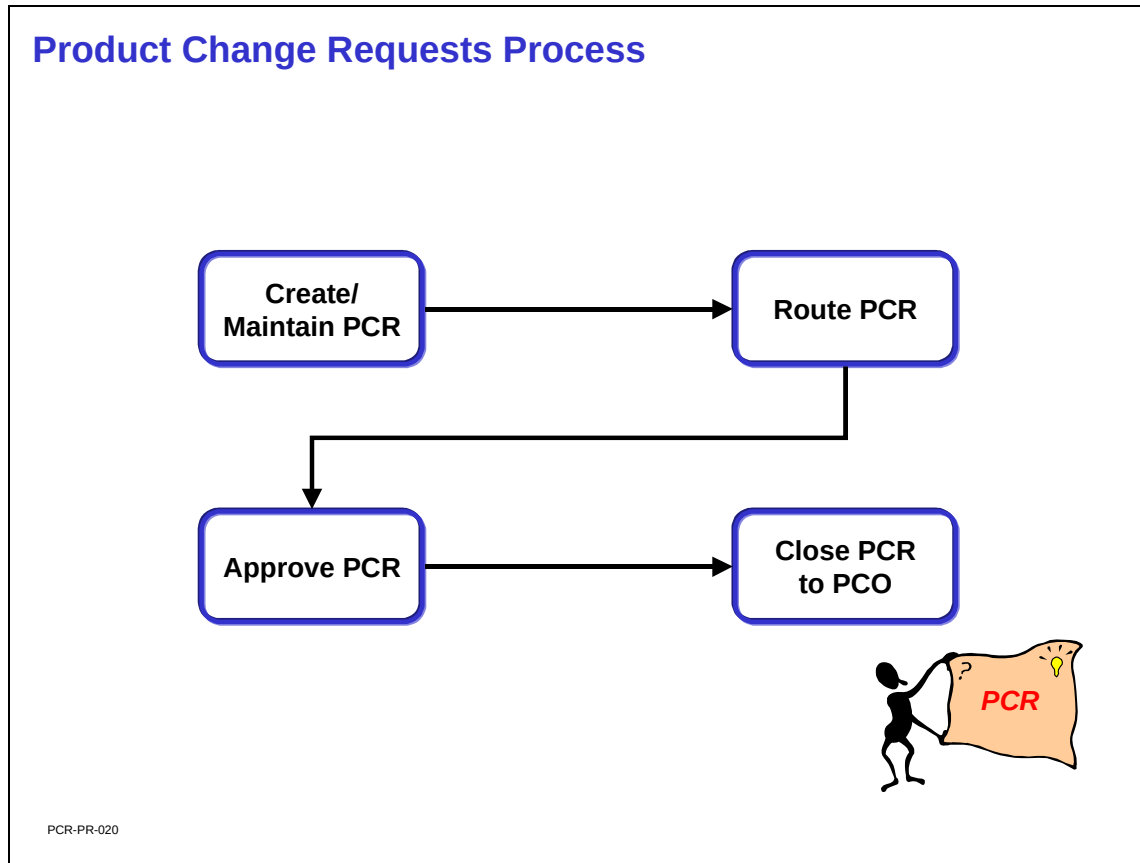


Process Product Change Requests

In this section you learn how to:

- ✓ Identify some key business issues you need to consider before setting up Product Change Control in MFG/PRO
- ✓ Set up Product Change Control in MFG/PRO
- ✓ Process Product Change Orders (PCOs) in MFG/PRO
- ✓ **Process Product Change Requests (PCRs) in MFG/PRO**

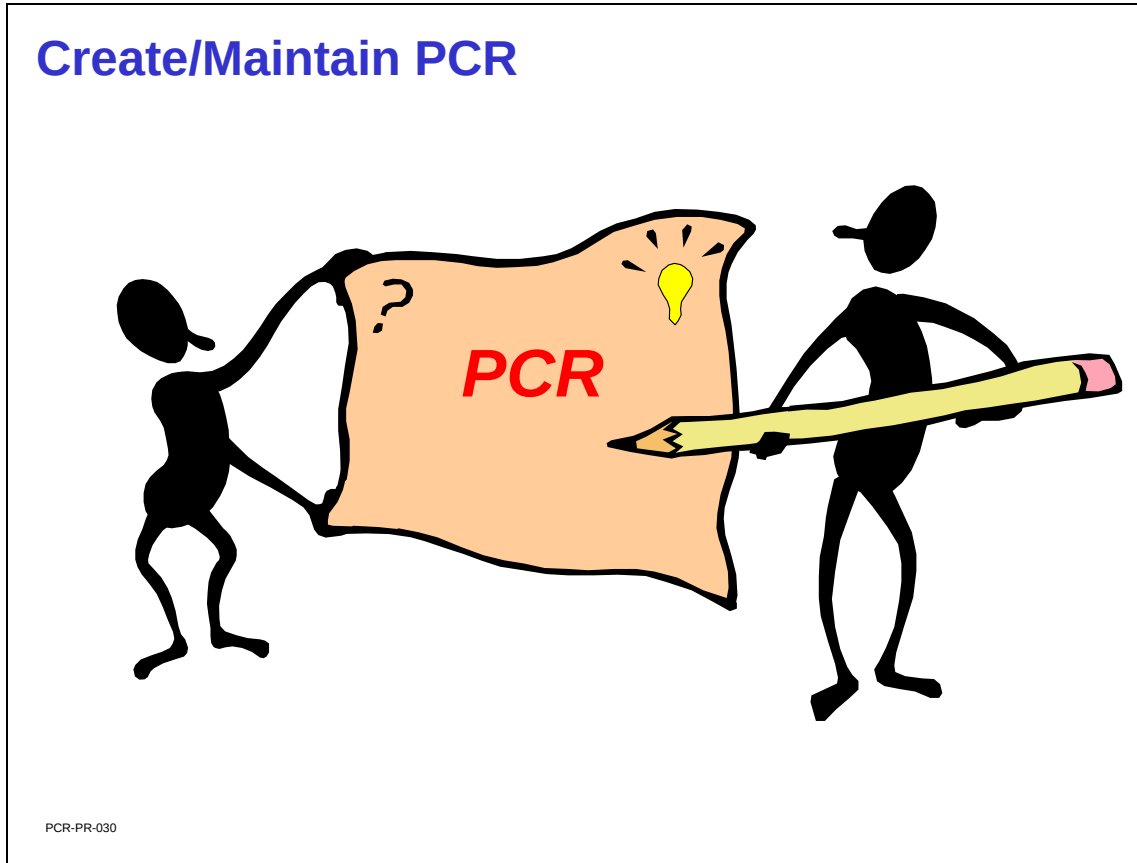
PCR-PR-010



Product Change Requests Process

This illustration is a suggested process sequences of master files for the Product Change Requests which is based on information that flows from one master file to another and prerequisites that need to be accomplished. Reading the illustration:

-  Boxes with solid lines are required for processing and are covered in this course
-  Shaded boxes reflect optional steps, but are covered in this course
-  Boxes with dotted lines are required, but are covered at length in another course

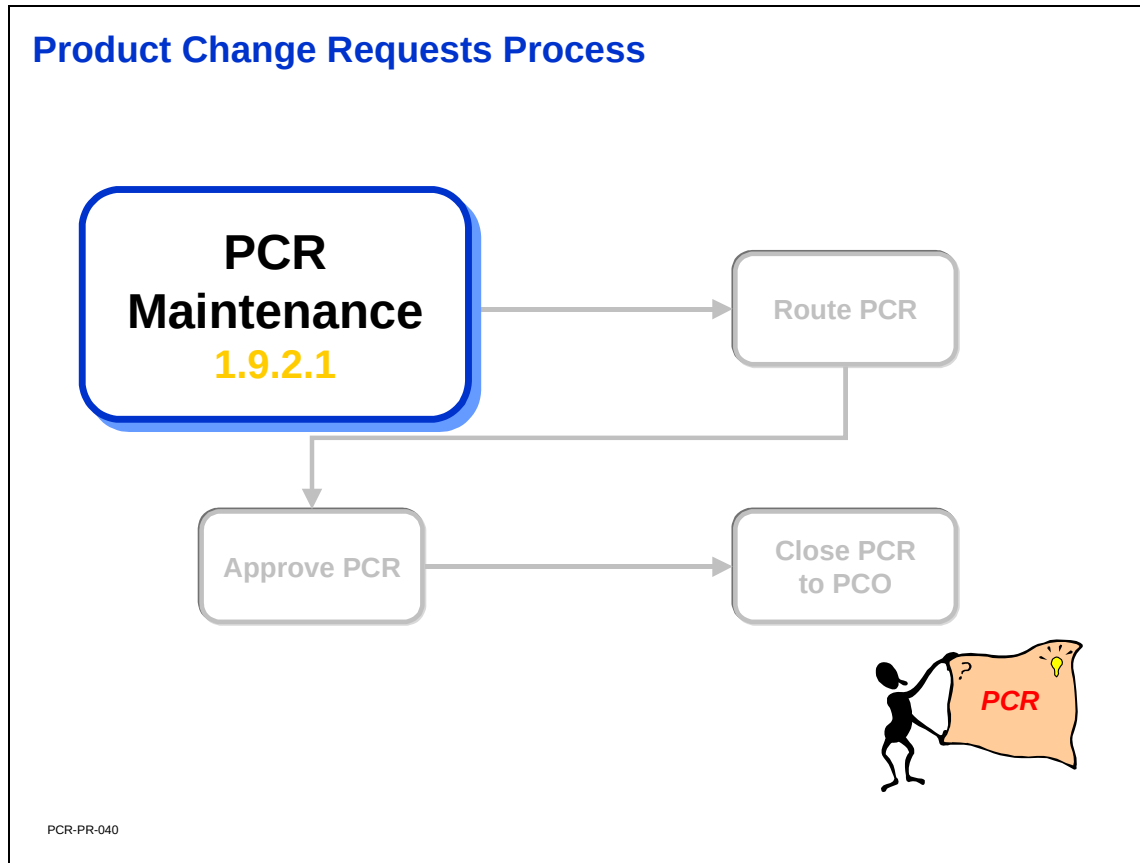


Create/Maintain PCR

- PCR Maintenance 1.9.2.1 does not create any financial transactions
 - Financial personnel should be aware of all PCRs since most product changes will have financial consequences if they are approved and incorporated
- Similar to PCOs, you must enable the appropriate functions on the related menus to maintain product structures, routings, item specifications, and formulas:
 - Enable PCC Product Structure Maintenance 13.13.22, Enable PCC Routing Maintenance 14.22, Enable PCC Item Specification Maintenance 19.1.22, Enable PCC Formula Maintenance 15.22



See in this training guide: *Set up Processes to Control* on page 71



PCR Maintenance

- Design and build Product Change Requests (PCRs)
- All of the functions required to create product changes are contained in this program
- Submitted PCRs can be modified using PCO Maintenance, but a warning displays
 - Closed PCRs can be accessed, but the only menu option available is Trailer Maintenance
- CIM load is not used to load data into PCR Maintenance
 - Use PCR/PCO Import/Export 1.9.13



See in this training guide: *Miscellaneous PCR/PCO Functions* on page 191

1.9.2.1 – PCR Maintenance

PCR Maintenance

User Menu Edit Queue Options Help

Number: PCR08000 ID: Database: PCR
 Type: PCR Design Group: DESIGN Created By: ENG 06/29/99

Title: New Colorant
 Reason: New Part 88-8000 Black Colorant
 Where-As to Replace 88-6000

Class: User Code [1]:
 Originator: User Code [2]:

Create New Request

Adding new record.

F1=Help F2=Go ESC=End F5=Delete Ctrl-X/C/V=Cut-Copy-Paste

PCR

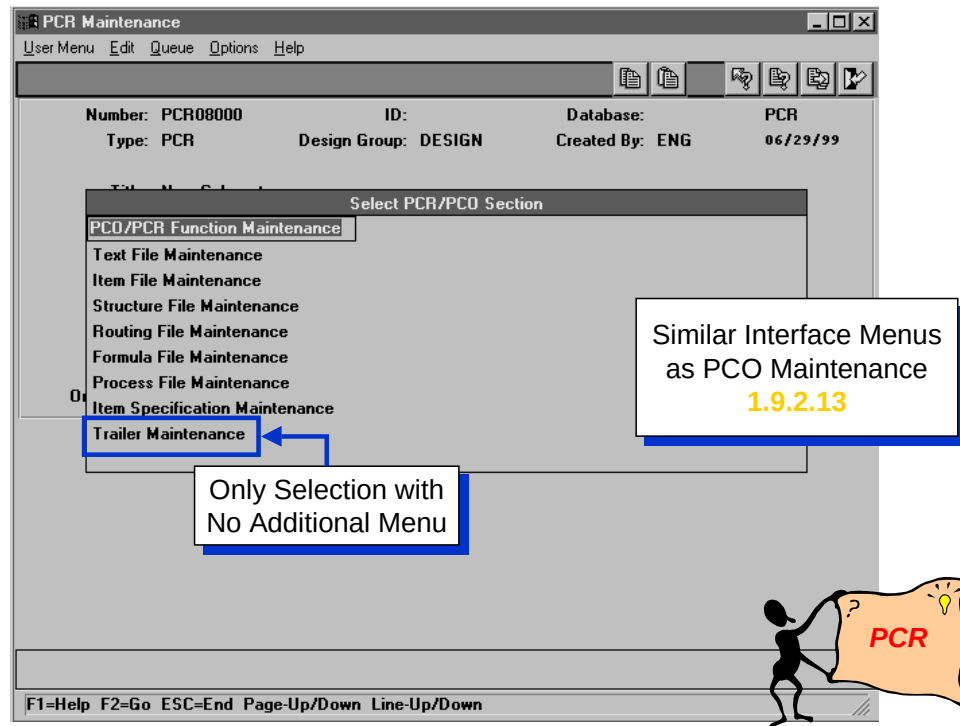
PCR-PR-050

PCR Maintenance

Menu Number 1.9.2.1

- PCRs are unique for each Number, ID, and Database combination
 - ID and Database are typically used to split up large or complex engineering changes into more than one PCR
 - If you open a PCR with the same Number, but different ID or Database as another PCR, you will receive a warning that related PCRs exist

1.9.2.1 – PCR Maintenance

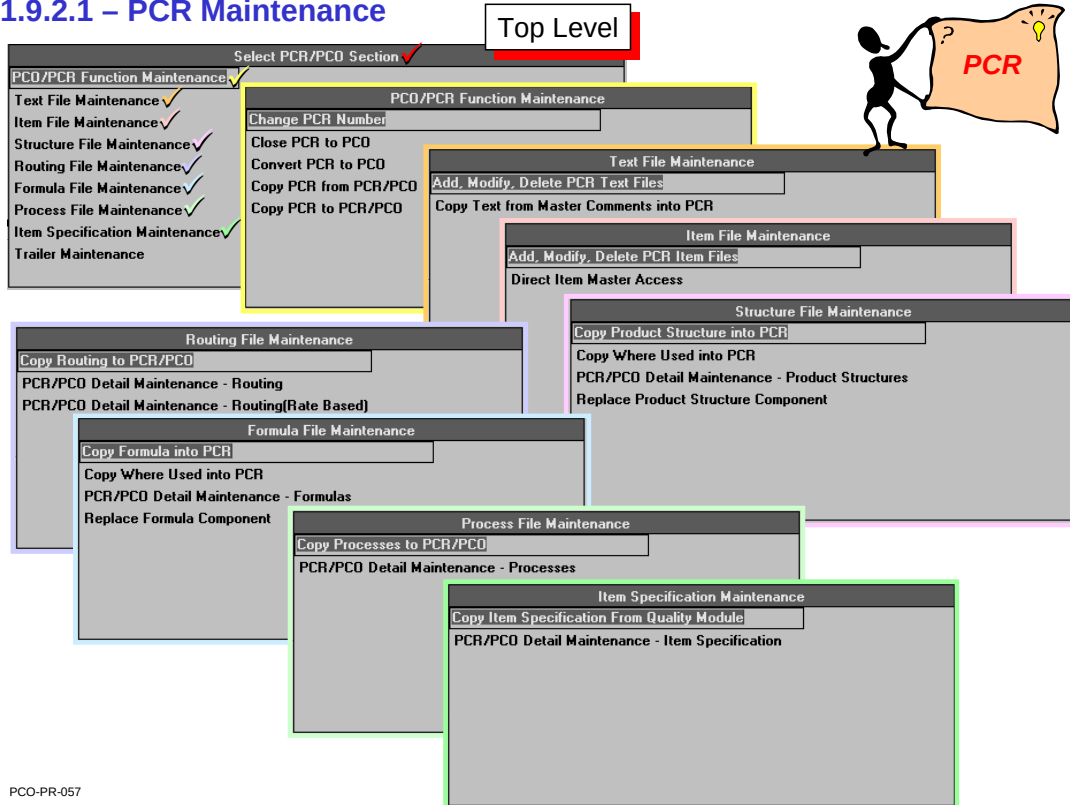


PCO-PR-055

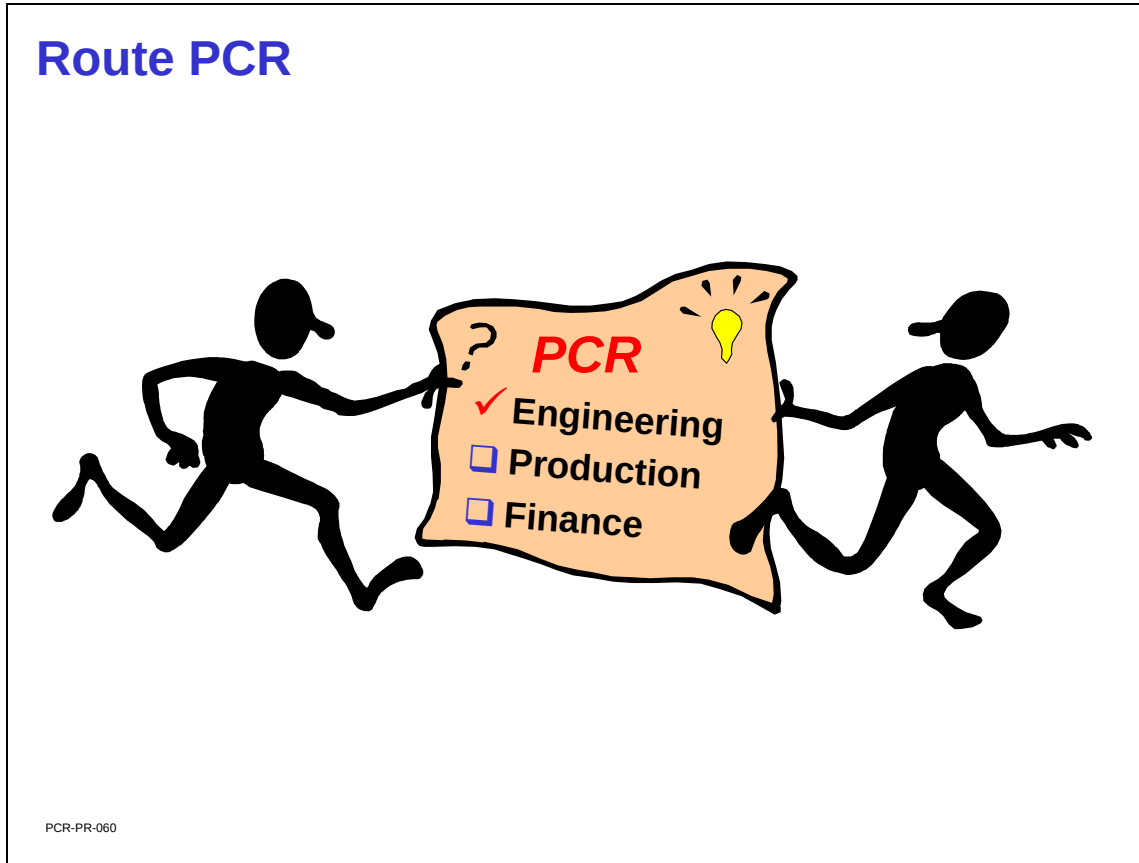
PCR Maintenance Options

- Just like PCO Maintenance, pop-up menus allow you to select which kinds of changes to make
- Just like PCO Maintenance, a second pop-up menu gives you access to detail modification
 - Each menu item (except Trailer Maintenance) leads to another menu
- Trailer Maintenance is the only menu option that can be used for closed PCRs

1.9.2.1 – PCR Maintenance

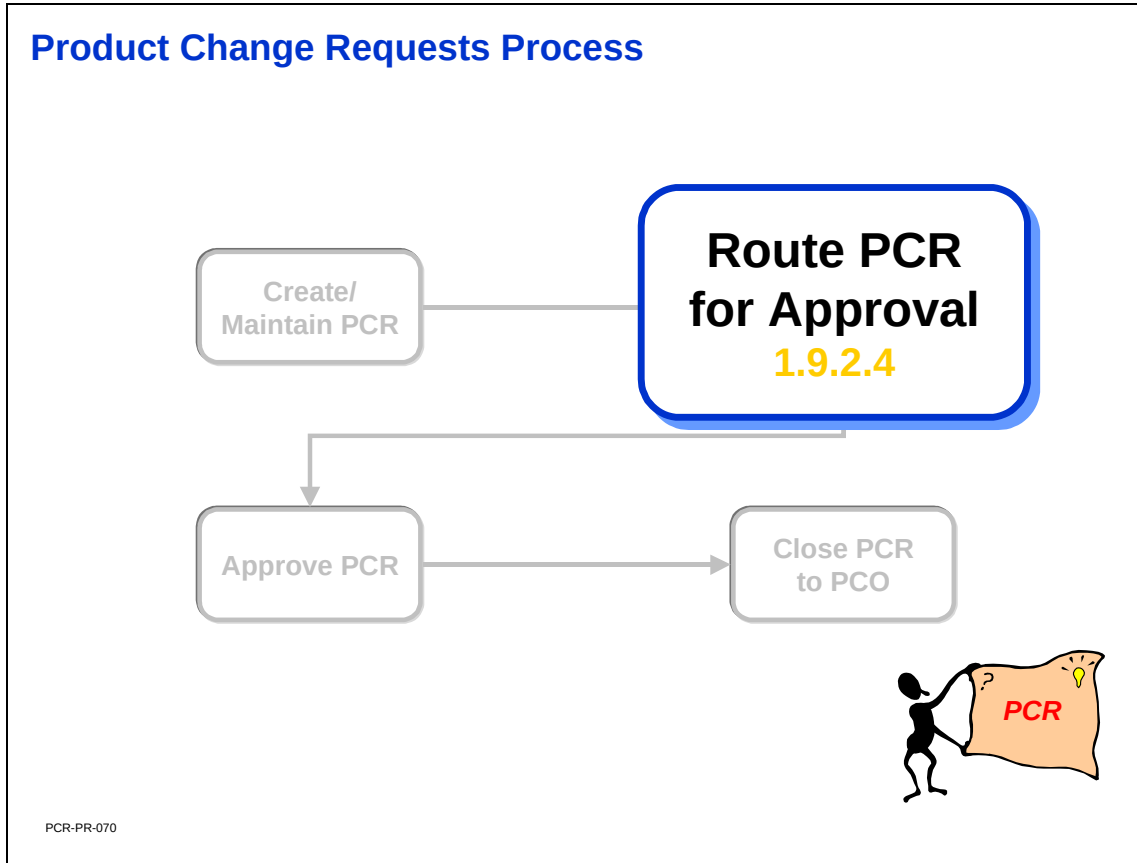


Exercise option: Continue with the material or go to *Create PCR with Where-As Changes* on page 225



Route PCR

- Similar to PCOs, the PCRs are selected for routing through the approval cycle



Route PCR for Approval

- Used to place product change requests (PCRs) into the approval cycle

1.9.2.4 – Route PCR for Approval

Route PCR for Approval

User Menu Edit Queue Options Help

Number: PCR08000 ID: DBase: DocType: PCR
Type: PCR Dsgn Grp: DESIGN By: ENG Unsubmt Only: yes

Number	ID	Database	Title	By	Sub Date
PCR08000			New Colorant	ENG	

Route to Users for Approving PCR

Number	ID	Database	Title	By	Sbmt	Cmmt
PCR08000			New Colorant	ENG	yes	no

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

PCR-PR-080

Route PCR for Approval

Menu Number 1.9.2.4

- Based on the selection criteria in the first frame, a listing of PCRs appears in the second frame
 - Use the arrow keys to scroll through the list and press Enter to select an entry
 - In the bottom frame change the submission status of the PCR and attach comments
- Once submitted, the PCR becomes visible to PCR/PCO Approval 1.9.6.1 (see page 216)
 - Its status changes to Submit in PCR/PCO Status Browse 1.9.11 (see page 168), and a submission date is attached



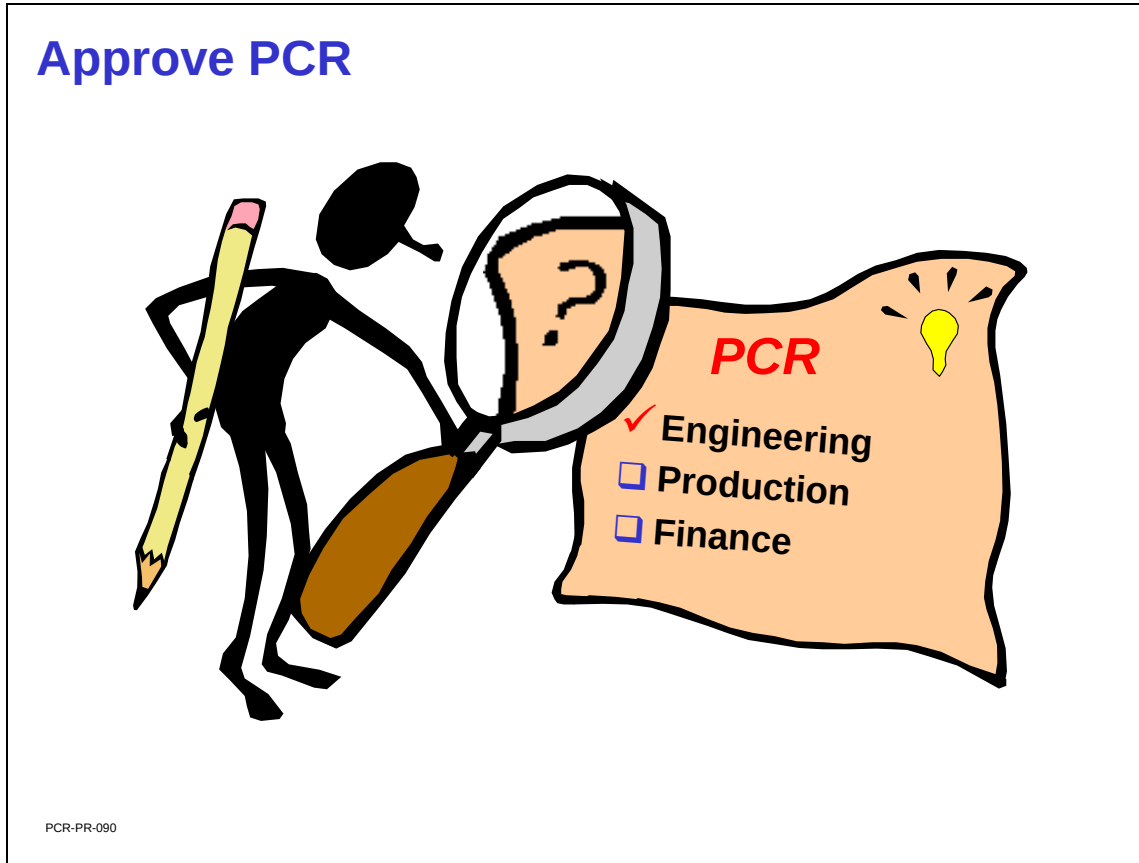
See in this training guide: *Print PCR/PCO* on page 169

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- Submitted PCRs can be unsubmitted by running Route PCR for Approval with the *Unsubmt Only* = No, and then changing *Sbmt* from Yes to No
 - If anyone has approved the PCR, it will not display for update
 - The approval must be reversed in PCR/PCO Approval 1.9.6.1 (see page 216) before it can be unsubmitted

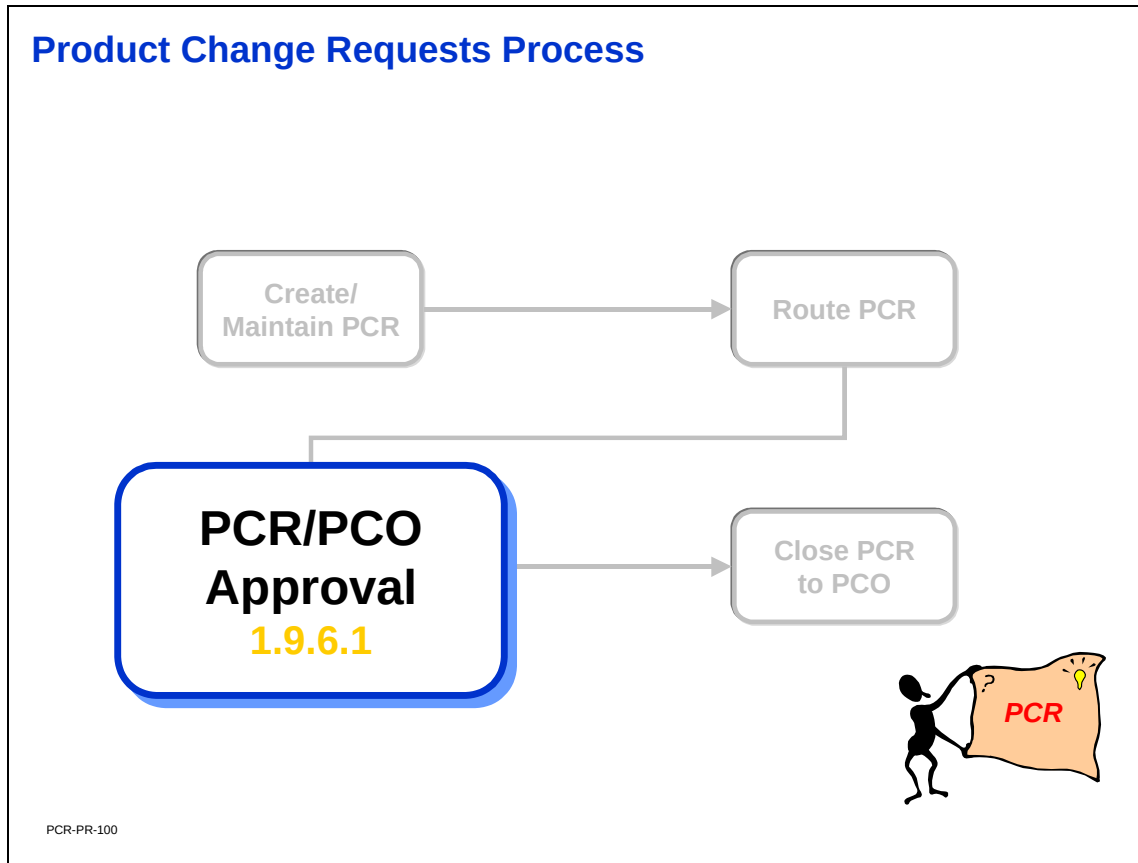


Exercise option: Continue with the material or go to *Route PCR for Approval* on page 227



Approve PCR

- Similar to PCOs, PCRs are examined for approval, comments, rejection, or reapproval



PCR/PCO Approval

- Used to approve or reject submitted PCRs

1.9.6.1 – PCR/PCO Approval

PCR/PCO Approval

User Menu Edit Queue Options Help

Number: PCR08000 DocType: PCR
Appr Group: APPROVAL User Id: PLN Next Only: no Unsigned Only: yes

DocNbr	Appr Grp	Seq	Appr	ByReRt
PCR08000	APPROVAL	10	no	

Approve PCRs

DocNbr	Group	Appr	Cmnt	ByReRt
PCR08000	APPROVAL	yes	no	no

F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

PCR-PR-110

PCR/PCO Approval

Menu Number 1.9.6.1

- Based on the selection criteria in the first frame, a listing of documents appears in the second frame
- If the Security Option in Security Control File 36.3.24 = U or = B and Security = Yes in the PCC Control File 1.9.24, you are prompted for a password before entering the second frame



See in this training guide: *PCC Control File* on page 103

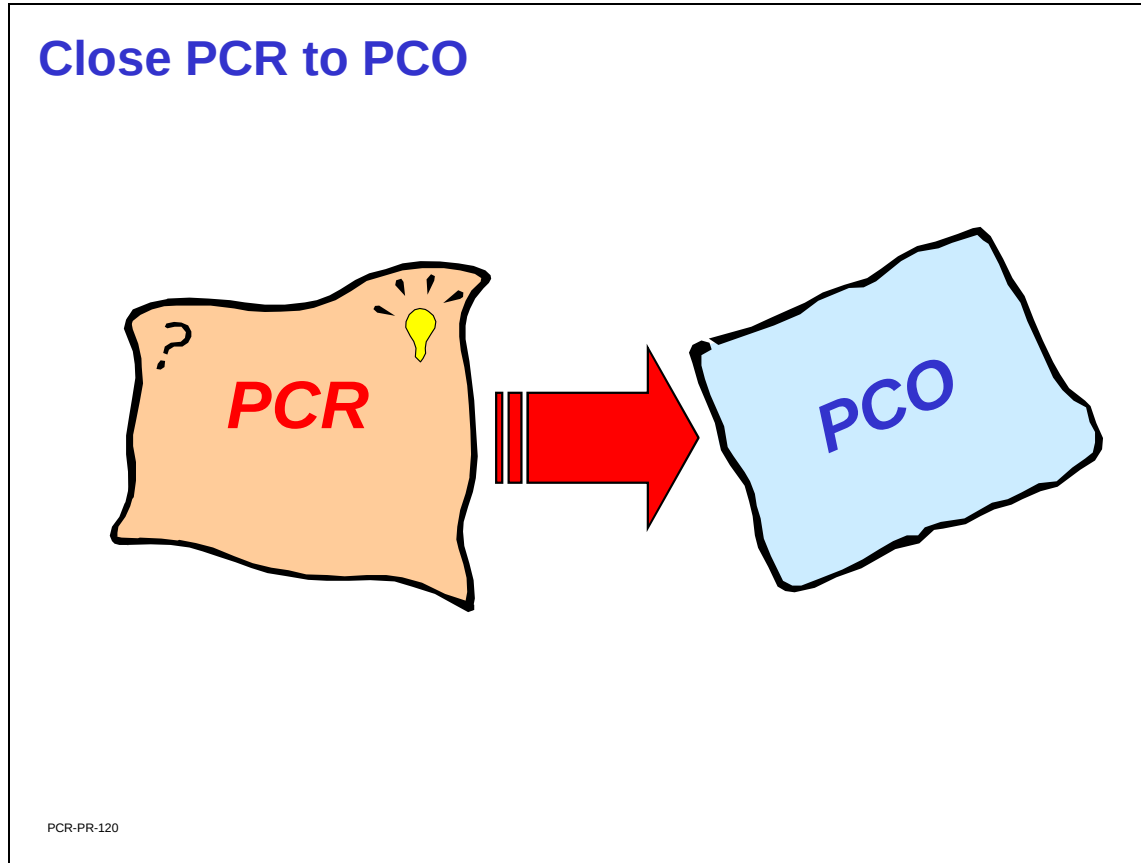
- Use the arrow keys to scroll through the documents in the second frame and press Enter to select an entry
- In the bottom frame, approve or reject the selected change document and attach comments to the PCR
- If you reject the PCR and you belong to a group that can reroute rejected changes, you are prompted to enter a reroute level
 - If specified, all groups with a lower reroute number who previously approved the PCR have their approvals set = No
 - An asterisk appears in the last column in the second frame to give visibility to any PCR that was rejected and rerouted



See in this training guide: *PCR/PCO Approval* on page 175

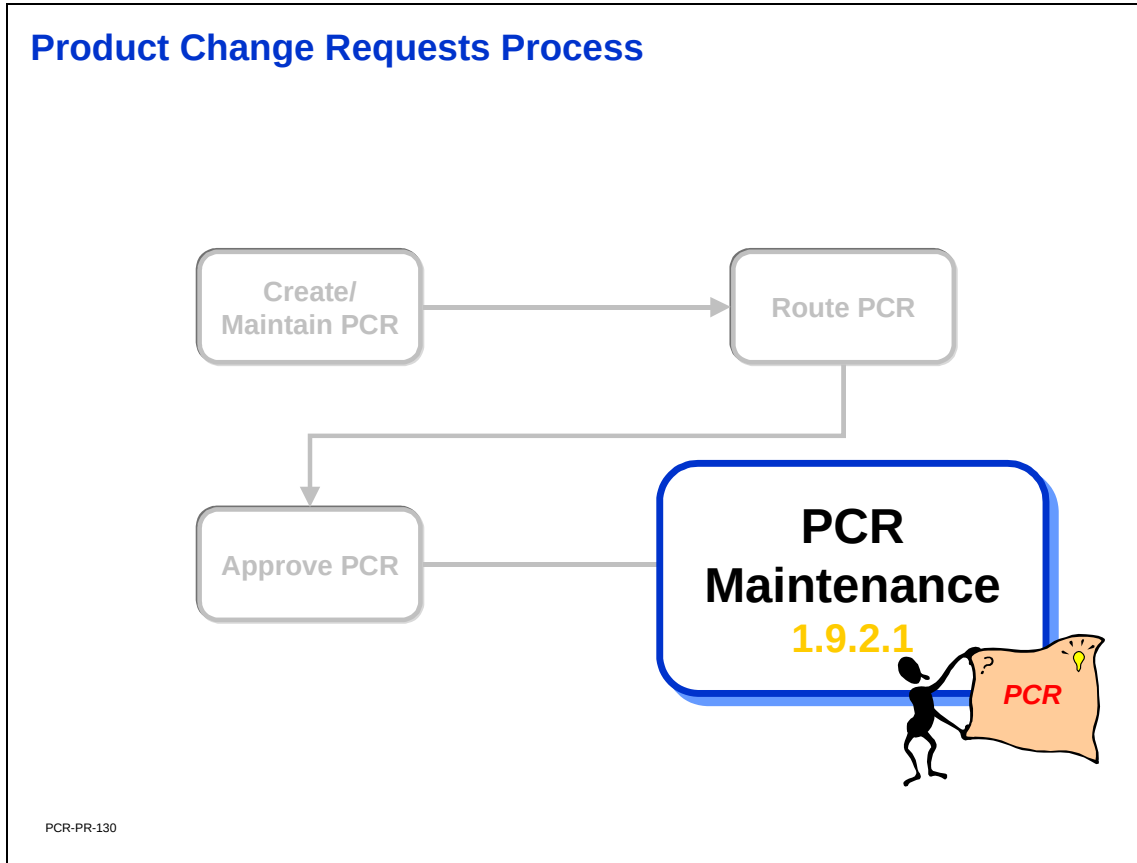


Exercise option: Continue with the material or go to *Approve PCR* on page 228



Close PCR to PCO

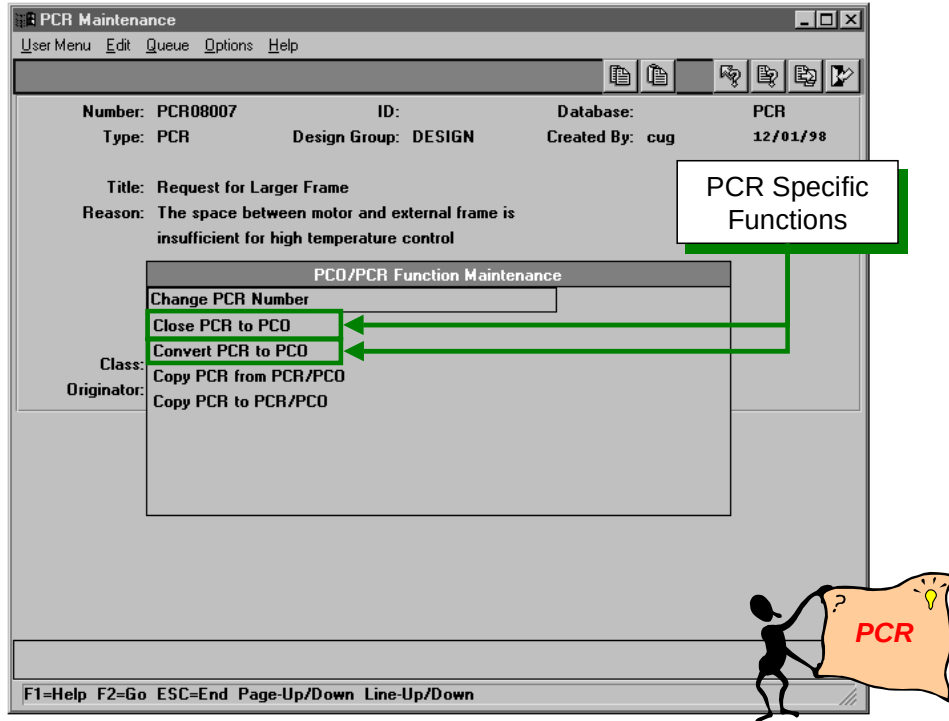
- After approving the proposed changes in the PCR, convert the PCR to a PCO to follow PCO processing procedures



PCR Maintenance

- PCR Maintenance 1.9.2.1 is the same as PCO Maintenance 1.9.2.13 *except* for the Convert PCR to PCO and Close PCR to PCO functions, which are only options when you modify a PCR

1.9.2.1 – PCR Maintenance



PCO-PR-053

PCO/PCR Function Maintenance

Menu Number 1.9.2.1

1.9.2.1 – PCR Maintenance

PCR Maintenance

User Menu Edit Queue Options Help

ecmt02.p Close PCR to PCO

Number: PCR08000 ID: Database: PCR

Title: New Colorant

From: PCR08000 ID: Database: PCR

To: PC001050 ID: Database: PCO

Text Files: yes
Item Files: yes
Structure/Formula Files: yes
Routing/Process Files: yes
Item Specification Files: yes

PCO must exist prior to
Close PCR to PCO

PCR

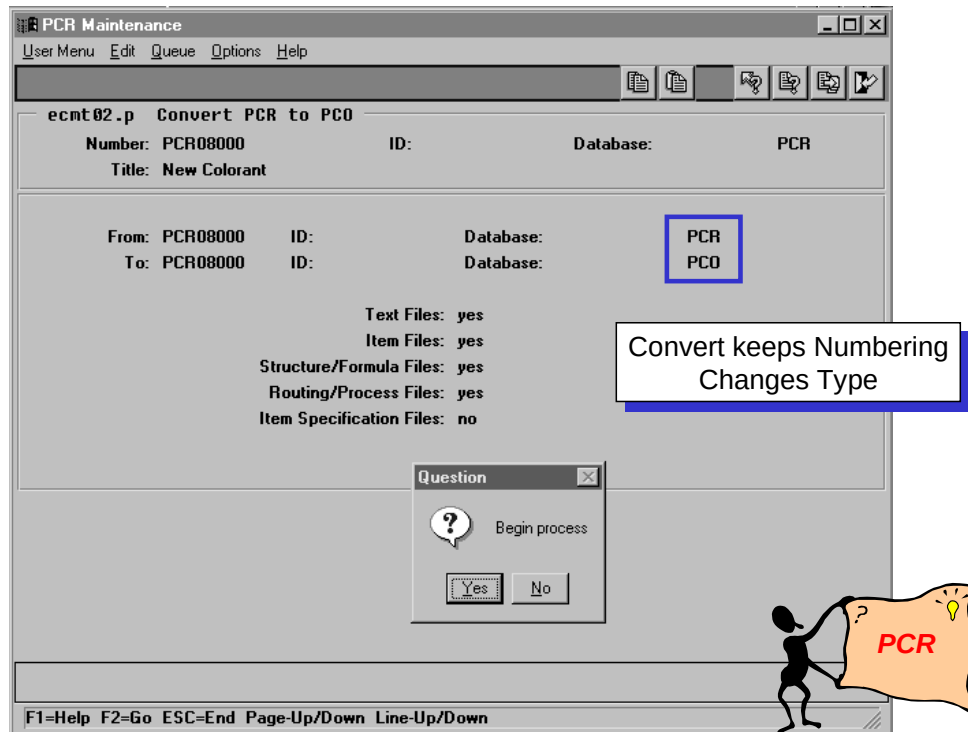
F1=Help F2=Go ESC=End Page-Up/Down Line-Up/Down

PCO-PR-140

Close PCR to PCO

- Used to merge details from PCR to an existing PCO
- PCO must exist first before using this function; it cannot create a new PCO

1.9.2.1 – PCR Maintenance



PCO-PR-145

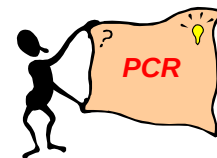
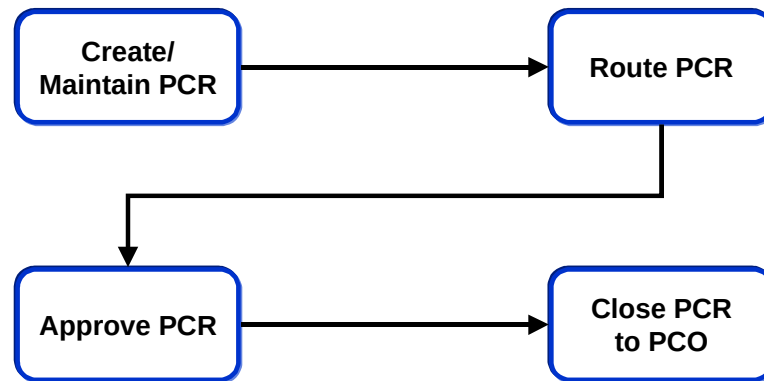
Convert PCR to PCO

- Changes document types from PCR to PCO, but does not change the Number, when you provide the new PCO type and design group



Exercise option: Continue with the material or go to *Close PCR to PCO* on page 228

Product Change Requests Process Summary



PCR-PR-150

Summary Product Change Requests Process

Processing Exercises



PCR-PR-160

Product Change Requests (PCRs) Exercises

Important The data used in these exercises may not be the same as the data shown in the screen captures in this lesson. You must have completed all the setup exercises before you can work on the processing exercises.

Create PCR with Where-As Changes

Instructions: You received a request to make black cases in place of your existing grey cases. To analyze the feasibility of this product change, you need a new colorant similar to 88-6000 Grey Colorant, and you need Where-As replacements to substitute the new colorant. In this exercise you create a PCR to evaluate and approve these changes before converting them to PCOs.

- 1 Let MFG/PRO assign the PCR number. The number will be assigned when you complete the Type and Design group fields and press Go.

- a Assign Type = PCR, Design group = DESIGN
- b Notice the different numbering from the PCOs in the last chapter.
- c Write down the PCO number assigned for later reference: _____

Hint: Use PCR Maintenance 1.9.2.1

- 2 Title and Reason fields are optional. Leave them blank, or create a simple description for this PCR:

Title	New Colorant
Reason	New Item 88-8000 Black Colorant Where-As to Replace 88-6000

- 3 Press Go to continue past the header. Choose *Item File Maintenance*, then select *Add, Modify, Delete PCR Item Files*.

- a Add the item record for 88-6000 Grey Colorant to your PCR.
- b End Product = Yes.
- c Comments = Yes. Add a comment to instruct “Being replaced by Black Colorant.”
- d Exit the PCR and print the record, or review the Detail Inquiry and write down the Item Data information about 88-6000. You need it to create the new item 88-8000. Return to PCR Maintenance when you have the 88-6000 information.

- 4 Choose *Item File Maintenance*, then select *Direct Item Master Access*.

- a Add a new item 88-8000 BLACK COLORANT. Be sure to use the same Product Line, Unit of Measure, Status Code, and all other Item Data codes as 88-6000. Refer back to your copied record for accuracy.

- 5 Return and choose *Item File Maintenance*, then *Add, Modify, Delete PCR Files*.

- a In the last step you added the item to the Item Master but not to the PCR. Add the new item record for 88-8000 Black Colorant to the PCR. End product = Yes, Comments = No.

- 6 Return and choose *Structure File Maintenance*. Then select *Copy Where Used into PCR*.

- a Component Item = 88-6000

- b** Select each product structure by pressing Enter. An asterisk appears next to each parent item number. Press Go to save the records.
- 7** Select *Structure File Maintenance* and then *Replace Product Structure Component*.
 - a** Component Item = 88-6000
 - b** Replace with Item = 88-8000, Multiplier = 1.0 (a one-for-one replacement).
 - c** Press End to Continue and *Please Confirm Update* = Yes.
- 8** Choose *Structure File Maintenance* and then *PCR/PCO Detail Maintenance - Product Structures*.
 - a** Review the records created with this copy procedure. Arrow down to scroll through each record. You should see that the product structure records include the old item number 88-6000 with *Deactivate* = Yes and the new item number 88-8000 with *Deactivate* = No.
- 9** Save the record without adding any information to the trailer.
- 10** Review your PCR to be certain your changes were all included. Note the double records for product structure changes.
Hint: Use PCR/PCO Detail Inquiry 1.9.2.8

Route PCR for Approval

Instructions: In this exercise, you route your PCR for approval.

- 1** Allow MFG/PRO to automatically select the PCR available for submittal.
 - a** *Doc Type* = PCR and *Unsubmt Only* = Yes. Press Go to continue.
 - b** Press Enter to accept the PCR in the first frame. *Sbmt* = Yes in the second frame. Press Go.
Hint: Use Route PCR for Approval 1.9.2.4
- 2** Review your PCR to see the status change. The Status should be = *Submit*.
Hint: Use PCR/PCO Status Browse 1.9.11

Approve PCR

Instructions: In this exercise, you approve your PCR.

- 1 Allow MFG/PRO to automatically select the PCR available for approval.
 - a *Doc Type* = PCR, *Appr Group* = APPROVAL, and *Unsigned Only* = Yes. Press Go to continue.
 - b Press Enter to accept the PCR in the first frame. *Sbmt* = Yes in the second frame. Press Go.
Hint: Use PCR/PCO Approval 1.9.6.1
- 2 Review your PCR to see the status change. The Status should be = *Approved*.
Hint: Use PCR/PCO Status Browse 1.9.11

Close PCR to PCO

Instructions: In this exercise, you close the PCR to a new PCO. You create the PCO and then use Close PCR to PCO.

- 1 Your company requires a new PCO that will only contain the contents of this PCR.
 - a Create a new PCO. Allow MFG/PRO to automatically assign the next number. Type = PCO, Design Group = DESIGN.
Hint: Use PCO Maintenance 1.9.2.13
 - b Write down the PCO number assigned for later reference: _____
 - c Finish the header of the new PCO and exit without adding any changes or trailer information.

Title	New Colorant Applied
Reason	PCR Changes Approved Production Order for Black Colorant
- 2 Return to PCR Maintenance, select your Black Colorant PCR, and press Go until you move past the header.
Hint: Use PCR Maintenance 1.9.2.1
- 3 Select *PCO/PCR Function Maintenance*. Then choose *Close PCR to PCO*.

- a** Assign the PCO number you recorded in the previous step. Verify that the To: document is a PCO document type.
 - b** Affirm copying the PCR data to the PCO. Ignore the message *Warning: Target Exists; Duplicated Records Will Not Copy*. Assign *Continue?* = Yes.
 - c** Further Detail changes to the PCR are not allowed. At this point you can modify the trailer of your PCR. For the purposes of these exercises, there are no trailer modifications.
- 4** Review your PCR and PCO Status. The old PCR should show *Status* = Closed. The new PCO should show *Status* = blank. The PCO is now ready for routing.

Hint: Use PCR/PCO Status Browse 1.9.11



Course Overview

- ✓ Introduction to Product Change Control
- ✓ Business Considerations
- ✓ Set up Product Change Control
- ✓ Process Product Change Orders (PCOs)
- ✓ Process Product Change Requests (PCRs)

PCR-PR-170

APPENDIX A

Reports, Inquiries, Browsers



rwant01 p b 14.13.2 Routing Maintenance (Date Based)

Routing Code	10-15000	NORMAL (TN) COIL-ING
Operation	20	
Standard Operation		
Work Center	1030	INSPECTION, ALL SITE
Machines		
Description	INSPEC PER PROC-00%	
Machines per Op	1	
Overlap Units	1	
Queue Time	1.0	
Wait Time	0.0	
Setup Time	0.0	
Done by	Product Line 10-15000	

Product Change Control

Menu	Menu Name	Function / Purpose
1.9.1.2	Group Browse	Displays all groups and their users. Information shown includes group, description, user ID, user name, user expire date, copies, and output.
1.9.1.6	Routing Slip Browse	Displays all routing slips. Information shown includes routing slip, description, severity list, modified date, and modified by ID.
1.9.1.10	PCR/PCO Type Browse/ Inquiry	Displays all PCC types. Information shown includes type, document type, description, routing slip, design group, and distribution.
1.9.2.2	PCR Browse	Displays only PCR data. Information shown includes PCR number, ID, database, title, type, design group, routing slip, approved date, and closed date.
1.9.2.8	PCR/PCO Detail Inquiry	Displays PCO details for a specific PCO. Information shown includes header and status information for each PCO; then approval group detail, item master detail, PCO BOM detail in indented format, routing, process, and formula information, and item specification data as applicable to the PCO; all text comments; and all trailer information.
1.9.2.14	PCO Browse	Displays all ECOs/PCOs/PCRs. Information shown includes PCO number, ID, database, title, type, design group, routing slip, approved date, released date, and closed date.
1.9.6.2	Approval Browse	Displays PCO approval. Information shown includes PCO number, ID, database, document type, routed date, sequence, group, date approved, routing slip, approved, approver ID, and location/version.
1.9.7.3	Incorporation Planning Report	Prints for an Incorporated PCO and associated site, cost effects by either Current or GL Costing. Information shown includes parent item number, component item number(s), indication of selected components on the PCO, original quantity required, final quantity required, quantity on hand, quantity on order, projected usage, balance, value, PCO number, ID, database, site, start effective date, and costing method.

Product Change Control

Menu	Menu Name	Function / Purpose
1.9.9.1	Print PCR/PCO	Prints all PCO/PCR information for any individual or range of PCOs or PCRs, as well as by status. Information shown includes header and status information for each PCO/PCR, then approval group detail; item master detail; PCO/PCR BOM detail in indented format; routing, process, and formula information; item specification data, and all text comments, as applicable to the PCO/PCR. The bill of materials section prints only the PCO or PCR bill and includes the current Qty Per from the product structure or formula record and the PCO Qty Per. The UM, Ph and Iss fields show data from the live database; Qty Type and Stru Type display data from the PCO database. If a component has been deactivated on the bill, DEACTIVATED prints in the PCO Qty Per column.
1.9.9.3	Affected Structures/ Formulas Inq	Displays the structure/formula component information for the parent item and PCO number requested. Information shown includes item level, component item, item description, item UM, original item quantity, and PCC item quantity per.
1.9.9.4	Structure/Formula Impact Report	Prints structure/formula effects of PCC, with a summarized bill of materials. Information shown includes PCO number, ID, database, type, design group, created by, creation date, title, reason, class, originator, user code (1) and (2), parent item, component item(s), indicator for selected components of structure/formula, item description, original quantity required, net change previously released PCO, net change this PCO, and final quantity required.
1.9.9.6	Item Revision History Browse/Inquiry	Displays historical item revisions. Information shown includes item number, PCO number, ID, database, title, status, new revision number, and start effective date.
1.9.11	PCR/PCO Status Browse	Displays all ECOs/PCOs/PCRs. Information shown includes number, ID, database, title, status, approved date, and submitted date.
13.13.2	ECO Inquiry/Browse	Displays all ECOs/PCOs in the database. Information shown includes PCO number, creation date, created by, item number, item description, old rev, new rev, start and end effective dates
13.13.3	ECO by ECO Number Report	Prints all ECOs/PCOs in the database, in PCO number order. Information shown includes PCO number, PCO description, created by, PCO creation date, item number, item description, item UM, item rev, old/new revision, start/end effective dates

Product Change Control

Menu	Menu Name	Function / Purpose
13.13.4	ECO by Item Report	Prints ECOs/PCOs in the database, in item number order. Information shown includes item number, revision, item description, PCO number, PCO creation date, created by, start/end effective dates, old/new revision, and comments
36.2.18	Reason Codes Browse/ Inquiry	Displays reason codes. Information shown includes reason type, reason code, and description.
36.3.19	User Browse/Inquiry	Displays user IDs. Information shown includes user ID, user name, language, groups, and E-mail address.

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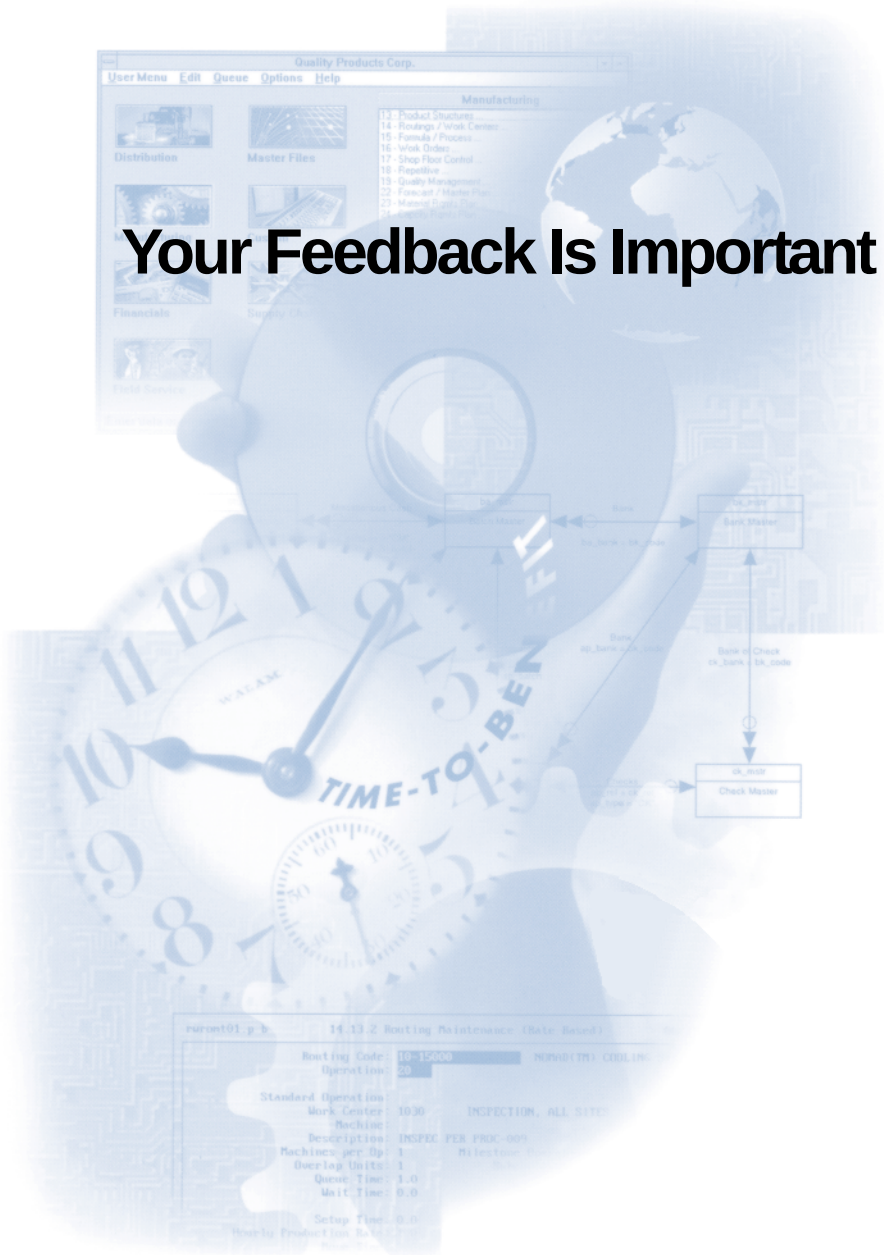
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