

Oracle[®] Quality User's Guide

Release 11
March 1998



ORACLE[®]

Enabling the Information Age[™]

Oracle® Quality User's Guide
Release 11

The part number for this volume is A57767-01.

Copyright © 1998, Oracle Corporation. All Rights Reserved.

Major Contributors: Ann Huybrechts, Susan Ramage

Contributors: Eric Bing, Munazza Bukhari, Rajesh Devakumar, Matt Kodama, Vikash Kothari, Manish Patel, Ken Soh, Dave Stephens

The programs (which include both the software and documentation) contain proprietary information of Oracle Corporation; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent and other intellectual property law. Reverse engineering of the Programs is prohibited.

The information contained in this document is subject to change without notice. If you find any problems in the documentation, please report them to us in writing. Oracle Corporation does not warrant that this document is error-free. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Oracle Corporation.

Restricted Rights Legend

Programs delivered subject to the DOD FAR Supplement are 'commercial computer software' and use, duplication and disclosure of the Programs shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement. Otherwise, Programs delivered subject to the Federal Acquisition Regulations are 'restricted computer software' and use, duplication and disclosure of the Programs shall be subject to the restrictions in FAR 52.227-14, Rights in Data — General, including Alternate III (June 1987). Oracle Corporation, 500 Oracle Parkway, Redwood City, CA 94065.

The Programs are not intended for use in any nuclear, aviation, mass transit, medical, or other inherently dangerous applications. It shall be licensee's responsibility to take all appropriate fail-safe, back-up, redundancy and other measures to ensure the safe use of such applications if the Programs are used for such purposes, and Oracle disclaims liability for any damages caused by such use of the Programs.

Oracle is a registered trademark and Oracle8, Oracle Application Object Library, Oracle Alert, Oracle Financials, Oracle Quality, Oracle Workflow, Oracle Work in Process, SQL*Forms, SQL*Plus, SQL*AMX, SQL*Report, and SQL*ReportWriter are trademarks or registered trademarks of Oracle Corporation.

All other company or product names are mentioned for identification purposes only, and may be trademarks of their respective owners.



Contents

- Chapter 1**
 - Overview of Oracle Quality** 1 – 1
 - Introduction to Quality Management 1 – 2
 - Quality Systems Today 1 – 2
 - Oracle Quality Mission 1 – 3
 - Quality Data Repository 1 – 3
 - ISO 9000 Compliance 1 – 4
 - Total Quality Management 1 – 5
 - Overview 1 – 6
 - Collection Elements 1 – 6
 - Specifications 1 – 7
 - Collection Plans 1 – 7
 - Actions and Alerts 1 – 8
 - Data Collection Options 1 – 8
 - Querying, Reporting, and Exporting Data 1 – 9
 - Tracking and Monitoring Quality Results 1 – 11
 - Analyzing Product Defects Using Charts and Reports 1 – 13
 - Quality Business Flow Diagram 1 – 15
 - Quality Process Flow Diagram 1 – 16

- Chapter 2**
 - Setting Up** 2 – 1
 - Overview 2 – 2
 - System Administrator Setup for Quality 2 – 5
 - Alert Setup for Quality 2 – 5
 - Work in Process Setup for Quality 2 – 6

Security Functions	2 – 7
Profile Options	2 – 9

Chapter 3

Collection Elements	3 – 1
Overview	3 – 2
Collection Element Types	3 – 4
Defining Collection Element Types	3 – 5
Collection Elements	3 – 7
Reference Information Collection Elements	3 – 7
Predefined Collection Elements	3 – 11
Defining Collection Elements	3 – 12
Defining Collection Element Values	3 – 16
Defining Collection Element Specification Limits	3 – 18
Quality Actions	3 – 20
Action Rules and Invoked Actions	3 – 23
Action Details	3 – 24
Action Rule Sequencing	3 – 25
Defining Collection Element Actions	3 – 27
Defining Collection Element Alert Actions	3 – 29
Associating Output Variables with Actions	3 – 35
Viewing Collection Elements	3 – 37

Chapter 4

Specifications	4 – 1
Overview	4 – 2
Specifications	4 – 4
Defining Specifications	4 – 7
Defining Specification Elements	4 – 10

Chapter 5

Collection Plans	5 – 1
Overview	5 – 2
Collection Plan Types	5 – 4
Defining Collection Plan Types	5 – 4
Collection Plan and Import Results Database Views	5 – 6
Collection Plan Elements	5 – 7
Collection Plans for Transactional Data Collection	5 – 10
Creating Collection Plans from Templates	5 – 10
Creating Collection Plans	5 – 13
Defining Collection Plan Elements	5 – 17

Defining Collection Plan Element Values	5 – 20
Associating Specification Types with Collection Plans	5 – 22
Dependencies Between Context Elements and Actions ...	5 – 24
Defining Collection Plan Element Actions	5 – 25
Defining Collection Plan Element Alert Actions	5 – 28
User-Defined Formula	5 – 34
Defining Actions that Assign A Value: User-Defined Formulas	5 – 34
Business Examples: User-Defined Formulas	5 – 36
Quality Collection Transactions	5 – 39
Collection Transactions and Context Element Relationships	5 – 40
Associating Transactions with Collection Plans	5 – 43
Updating and Deleting Collection Plans	5 – 46
Viewing Collection Plans	5 – 48

Chapter 6

Data Collection	6 – 1
Overview of Data Collection	6 – 2
Data Collection Fundamentals	6 – 4
Transactional Data Collection Fundamentals	6 – 6
Entering Quality Results Directly	6 – 10
Finding Specifications While Entering Results Directly ...	6 – 12
Viewing Attachments Associated with Quality Results	6 – 14
Action Processing	6 – 16
Updating and Deleting Quality Results	6 – 17
Posting Action Log Entries	6 – 20
Specifications for Transactional Data Collection	6 – 21
Finding Specifications During Transactional Data Collection	6 – 22
Collection Import	6 – 24
Updating Collection Import	6 – 25

Chapter 7

Managing Work in Process Quality	7 – 1
Using Oracle Quality with Oracle Work in Process	7 – 2
Collection Plans for Move Transactions	7 – 2
Setting up Routings for Quality Data Collection	7 – 5
Entering Quality Results for Move Transactions	7 – 11
Business Examples	7 – 15
Defect Code Pareto Analysis	7 – 15
Yield and Quality Cost Reporting	7 – 22

Process Capability Study	7 – 32
--------------------------------	--------

Chapter 8	Purchasing Data Collection	8 – 1
	Using Oracle Quality with Oracle Purchasing	8 – 2
	Collection Plans for Receiving Inspections	8 – 4
	Collection Plans for Receiving Transfers and Deliveries ...	8 – 5
	Entering Quality Results for Receiving Transfers and Deliveries	8 – 8
	Entering Quality Results for Receiving Inspections	8 – 11
	Business Example	8 – 14
	Supplier Product Analysis	8 – 14

Chapter 9	Service Data Collection	9 – 1
	Using Oracle Quality with Oracle Service	9 – 2
	Collection Points in Oracle Service	9 – 2
	Business Example	9 – 6
	Automotive Service Requests	9 – 6
	Entering Quality Results for Service Requests	9 – 8

Chapter 10	Charts, Views, and Custom Reports	10 – 1
	Quality Results Analysis	10 – 2
	Integrating Oracle Quality and Statit	10 – 2
	Copy Settings	10 – 4
	Copying Settings	10 – 7
	Functional Grouping and Processing	10 – 8
	Quality Results Folders	10 – 9
	Pareto Charts	10 – 11
	Creating and Viewing Pareto Charts	10 – 11
	Histograms	10 – 15
	Creating and Viewing Histograms	10 – 15
	Trend Charts	10 – 19
	Creating and Viewing Trend Charts	10 – 19
	Statistical Process Control (SPC)	10 – 23
	Control Charts	10 – 25
	Creating and Viewing Control Charts	10 – 25
	Cp and Cpk	10 – 30
	Viewing Descriptive Statistics	10 – 32
	Viewing Quality Results	10 – 35
	Viewing Quality Results Details	10 – 36

	Viewing Quality Results by Lot Number	10 – 38
	Viewing Quality Results by Serial Number	10 – 40
	Using the Quality Results ReportWriter	10 – 42
	Viewing and Deleting Action Log Entries	10 – 45
	Exporting Quality Results	10 – 47
Chapter 11	ISO 9000	11 – 1
	ISO 9000 Compliance	11 – 2
Chapter 12	Reports and Processes	12 – 1
	Overview of Reports	12 – 2
	Collection Element Action Rules Report	12 – 3
	Report Submission	12 – 3
	Report Parameters	12 – 3
	Collection Element Usages Report	12 – 4
	Report Submission	12 – 4
	Report Parameters	12 – 4
	Collection Elements Report	12 – 6
	Report Submission	12 – 6
	Report Parameters	12 – 6
	Collection Plan Action Rules Report	12 – 8
	Report Submission	12 – 8
	Report Parameters	12 – 8
	Collection Plan Details Report	12 – 10
	Report Submission	12 – 10
	Report Parameter	12 – 10
	Collection Plan Summary Report	12 – 11
	Report Submission	12 – 11
	Report Parameters	12 – 11
	Importing Quality Results Data	12 – 12
	Quality Results Report	12 – 13
	Report Submission	12 – 13
	Report Parameters	12 – 13
	Quality Specifications Report	12 – 14
	Report Submission	12 – 14
	Report Parameters	12 – 14
Appendix A	Windows and Navigator Paths	A – 1

Quality Windows and Navigator Paths A - 2

Appendix B

Attachments **B - 1**

Attachments for Collection Plans, Specifications and
Result Lines B - 2

Attaching Files to Collection Plans, Specifications, and
Results Lines B - 3

Appendix C

Results Queries **C - 1**

Finding Quality Results C - 2

Query Operators C - 4

Creating In and Not In Lists C - 6

Appendix D

Special Menu Options **D - 1**

Special Menu D - 2

Glossary

Index



Preface

Welcome to the *Oracle[®] Quality User's Guide, Release 11*.

This user's guide includes the information you need to work with Oracle Quality effectively. It contains detailed information about the following:

- Overview and reference information
- Specific tasks you can accomplish using Oracle Quality
- Oracle Quality setup
- Oracle Quality functions and features
- Oracle Quality windows
- Oracle Quality reports and processes

This preface explains how this user's guide is organized and introduces other sources of information that can help you.

About This User's Guide

This guide contains overviews as well as task and reference information about Oracle Quality. This guide includes the following chapters:

- Chapter 1 provides a brief introduction to quality management, an overview of the components of Oracle Quality and how you use them in the data collection process, examples of the different charts you can use to track and monitor quality results, and Quality business flow and process flow diagrams.
- Chapter 2 contains a setup checklist and provides information about setting up Oracle Quality as well as other integrated Oracle Manufacturing Applications.

Note: Implementation information and procedures are contained in this chapter.

- Chapter 3 explains how to define and use collection elements.
- Chapter 4 explains how to define and use specifications.
- Chapter 5 explains how to create and use collection plans.
- Chapter 6 describes the three ways you can collect quality results data: direct data collection, transactional data collection through other Oracle Manufacturing Applications, and collection import.
- Chapter 7 describes how to use Oracle Quality with Oracle Work in Process.
- Chapter 8 describes how to use Oracle Quality with Oracle Purchasing.
- Chapter 9 describes how to use Oracle Quality with Oracle Service.
- Chapter 10 explains how to chart, view, and report quality results data.
- Chapter 11 discusses how Oracle Quality can help you meet ISO 9000 reporting standard requirements.
- Chapter 12 explains how to submit report requests and briefly describes each Oracle Quality report.

Audience for This Guide

This guide assumes you have a working knowledge of your business area's processes and tools. It also assumes you are familiar with Oracle Quality. If you have never used Oracle Quality, we suggest you attend one or more of the Oracle Quality training classes available through World Wide Education. For more information about Oracle Quality and Oracle training, see: Other Information Sources.

Do Not Use Database Tools to Modify Oracle Applications Data

Because Oracle Applications tables are interrelated, any change you make using Oracle Applications can update many tables at once. But when you modify Oracle Applications data using anything other than Oracle Applications, you may change a row in one table without making corresponding changes in related tables. If your tables get out of synchronization with each other, you risk retrieving erroneous information and you risk unpredictable results throughout Oracle Applications.

When you use Oracle Applications to modify your data, Oracle Applications automatically checks that your changes are valid. Oracle Applications also keeps track of who changes information. If you enter information into database tables using database tools, you may store invalid information. You also lose the ability to track who has changed your information because SQL*Plus and other database tools do not keep a record of changes.

Consequently, we STRONGLY RECOMMEND that you never use SQL*Plus or any other tool to modify Oracle Applications data unless otherwise instructed.

Other Information Sources

Here are some other ways you can increase your knowledge and understanding of Oracle Quality.

Online Documentation

All Oracle Applications documentation is available online on CD-ROM, except for technical reference manuals. There are two online

formats, HyperText Markup Language (HTML) and Adobe Acrobat (PDF).

All user's guides are available in HTML, Acrobat, and paper. Technical reference manuals are available in paper only. Other documentation is available in Acrobat and paper.

The *content* of the documentation does not differ from format to format. There may be slight differences due to publication standards, but such differences do not affect content. For example, page numbers and screen shots are not included in HTML.

The HTML documentation is available from all Oracle Applications windows. Each window is programmed to start your web browser and open a specific, context-sensitive section. Once any section of the HTML documentation is open, you can navigate freely throughout all Oracle Applications documentation. The HTML documentation also ships with Oracle Information Navigator (if your national language supports this tool), which enables you to search for words and phrases throughout the documentation set.

Related User's Guides

Oracle Quality shares business and setup information with other Oracle Applications products. Therefore, you may want to refer to other user's guides when you set up and use Oracle Quality.

If you do not have the hardcopy versions of these manuals, you can read them online using the Applications Library icon or Help menu command.

Oracle Applications User's Guide

This guide explains how to enter data, query, run reports, and navigate using the graphical user interface (GUI) available with this release of Oracle Quality (and any other Oracle Applications products). This guide also includes information on setting user profiles, as well as running and reviewing reports and concurrent processes.

You can access this user's guide online by choosing "Getting Started with Oracle Applications" from any Oracle Applications help file.

Oracle Applications Demonstration User's Guide

This guide documents the functional storyline and product flows for Global Computers, a fictional manufacturer of personal computers products and services. As well as including product overviews, the

book contains detailed discussions and examples across each of the major product flows. Tables, illustrations, and charts summarize key flows and data elements.

Oracle Purchasing User's Guide

This guide describes how to create and approve purchasing documents, including requisitions, different types of purchase orders, quotations, RFQs, and receipts. This guide also describes how to manage your supply base through agreements, sourcing rules and approved supplier lists. In addition, this guide explains how you can automatically create purchasing documents based on business rules through integration with Oracle Workflow technology, which automates many of the key procurement processes.

Oracle Service User's Guide

This guide describes how you can track service requests, maintain and repair customer products in your installed base, and bill your customers for services rendered. This guide also gives an overview of the workflows that Oracle Service provides.

Oracle Work in Process User's Guide

This guide describes how Oracle Work in Process provides a complete production management system. Specifically this guide describes how discrete, repetitive, assemble-to-order, project, flow, and mixed manufacturing environments are supported.

Statit Reference Manual

This manual describes how to use Statware's Statistical Quality and Process Control software to create charts and descriptive views in Oracle Quality. By integrating Oracle Quality and Statware, you can use Oracle Quality collection plans to collect, then select, data for your charts and views, and then use Statware to generate the charts and views. You can export the data selected to Statware where it can be further analyzed.

Reference Manuals

Oracle Automotive Implementation Manual

This manual describes the setup and implementation of the Oracle Applications used for the Oracle Automotive solution.

Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual

This manual contains up-to-date information about integrating with other Oracle Manufacturing applications and with your other systems. This documentation includes open interfaces found in Oracle Manufacturing.

Oracle Applications Message Reference Manual

This manual describes all Oracle Applications messages. This manual is available in HTML format on the documentation CD-ROM for Release 11.

Oracle Project Manufacturing Implementation Manual

This manual describes the setup steps and implementation for Oracle Project Manufacturing.

Oracle Self-Service Web Applications Implementation Manual

This manual describes the setup steps for Oracle Self-Service Web Applications and the Web Applications dictionary.

Installation and System Administration

Oracle Alert User's Guide

This guide explains how to define periodic and event alerts to monitor the status of your Oracle Applications data.

Multiple Reporting Currencies in Oracle Applications

If you use the Multiple Reporting Currencies feature to record transactions in more than one currency, use this manual before implementing Oracle Quality. This manual details additional steps and setup considerations for implementing Oracle Quality with this feature.

Multiple Organizations in Oracle Applications

If you use the Oracle Applications Multiple Organization Support feature to use multiple sets of books for one Oracle Quality installation, this guide describes all you need to know about setting up and using Oracle Quality with this feature.

Oracle Applications Implementation Wizard User's Guide

If you are implementing more than one Oracle product, you can use the Oracle Applications Implementation Wizard to coordinate your setup activities. This guide describes how to use the wizard.

Oracle Applications Developer's Guide

This guide contains the coding standards followed by the Oracle Applications development staff. It describes the Oracle Application Object Library components needed to implement the Oracle Applications user interface described in the *Oracle Applications User Interface Standards*. It also provides information to help you build your custom Developer/2000 forms so that they integrate with Oracle Applications.

Oracle Applications Flexfields Guide

This guide provides flexfields planning, setup and reference information for the Oracle Quality implementation team, as well as for users responsible for the ongoing maintenance of Oracle Applications product data. This manual also provides information on creating custom reports on flexfields data.

Oracle Applications Installation Manual for Windows Clients

This guide provides information you need to successfully install Oracle Financials, Oracle Public Sector Financials, Oracle Manufacturing, or Oracle Human Resources in your specific hardware and operating system software environment.

Oracle Applications Product Update Notes

If you are upgrading your Oracle Applications, refer to the product update notes appropriate to your update and product(s) to see summaries of new features as well as changes to database objects, profile options and seed data added for each new release.

Oracle Applications Upgrade Preparation Manual

This guide explains how to prepare your Oracle Applications products for an upgrade. It also contains information on completing the upgrade procedure for each product. Refer to this manual and the *Oracle Applications Installation Manual* when you plan to upgrade your products.

Oracle Applications System Administrator's Guide

This manual provides planning and reference information for the Oracle Quality System Administrator.

Other Sources

Training

We offer a complete set of formal training courses to help you and your staff master Oracle Quality and reach full productivity quickly. We organize these courses into functional learning paths, so you take only those courses appropriate to your job or area of responsibility.

You have a choice of educational environments. You can attend courses offered by Oracle Education Services at any one of our many Education Centers, or you can arrange for our trainers to teach at your facility. In addition, Oracle training professionals can tailor standard courses or develop custom courses to meet your needs. For example, you may want to use your organization structure, terminology, and data as examples in a customized training session delivered at your own facility.

Support

From on-site support to central support, our team of experienced professionals provides the help and information you need to keep Oracle Quality working for you. This team includes your Technical Representative, Account Manager, and Oracle's large staff of consultants and support specialists with expertise in your business area, managing an Oracle8 server, and your hardware and software environment.

About Oracle

Oracle Corporation develops and markets an integrated line of software products for database management, applications development, decision support, and office automation, as well as Oracle Applications, an integrated suite of more than 45 software modules for financial management, supply chain management, manufacturing, project systems, human resources and sales and service management.

Oracle products are available for mainframes, minicomputers, personal computers, network computers and personal digital assistants, allowing organizations to integrate different computers, different operating systems, different networks, and even different database management systems, into a single, unified computing and information resource.

Oracle is the world's leading supplier of software for information management, and the world's second largest software company. Oracle offers its database, tools, and applications products, along with related consulting, education, and support services, in over 140 countries around the world.

Thank You

Thank you for using Oracle Quality and this user's guide.

We value your comments and feedback. At the end of this guide is a Reader's Comment Form you can use to explain what you like or dislike about Oracle Quality or this user's guide. Mail your comments to the following address or call us directly at (650) 506-7000.

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Or, send electronic mail to appsdoc@us.oracle.com.

Overview of Oracle Quality

This chapter introduces quality management and describes how Oracle Quality can be used to meet its challenges. It also provides an overview of the components of Oracle Quality and illustrates how Oracle Quality can help you meet your quality data collection and analysis requirements. The following topics are included:

- Introduction to Quality Management: page 1 – 2
- Overview: page 1 – 6
- Tracking and Monitoring Quality Results: page 1 – 11
- Quality Business Flow Diagram: page 1 – 15
- Quality Process Flow Diagram: page 1 – 16

Introduction to Quality Management

Companies today operate in global markets that demand near-zero defect quality. High quality is required not just in production, but throughout the supply chain. ISO 9000 certification is a minimum requirement. To remain competitive, companies must respond to the pressures of reducing their costs while improving quality and customer service.

To address these challenges, most companies have implemented quality programs based on the principles and methodologies developed by Drs. Deming and Juran. Such programs have likely evolved over the years starting with the implementation of statistical process control (SPC); the adoption of zero-defect and continuous improvement programs; the acceptance of the total quality control (TQC) process, and a shift to the total quality management (TQM) approach.

Many companies have widespread quality requirements and consequently may have implemented several quality systems to address these requirements. Although these systems may represent a significant investment in quality processes, training, and software, users are often dissatisfied with them for a variety of reasons.

Quality Systems Today

One reason users are dissatisfied is that existing systems can't adapt to frequent changes in products and processes. Competitive pressures have shortened product life cycles. New products are launched frequently and processes must not only rapidly adapt to these changes, but also improve as they adapt.

Many quality systems can't keep up with the pace, largely because most are inflexible. They're "hardcoded" — they do not allow you to change data collection points or to collect new kinds of quality information when products and processes change.

Another typical problem is that quality systems are not always integrated with business systems. More often than not, they're standalone "pocket" databases.

Can you access critical quality data throughout your enterprise and across your supply chain with pocket databases? For example, can you associate the supplier quality data you collected at the receiving dock with the failure data you collected on the factory floor?

Do your systems cause you to collect the same data multiple times? For example, do you collect part number and quantity failed information in your automated test equipment, your shop floor PC-based SPC package, and your work order transactions system?

Maybe your analysis tools are robust, but do your quality engineers seem to spend more time locating and extracting data than they spend actually analyzing it?

Can you really afford the learning curve and ongoing maintenance costs of multiple quality collection and analysis tools?

Obviously processes and systems that are local, non-integrated, and inconsistent create hidden costs and wasted effort.

Oracle Quality Mission

The Oracle Quality mission, simply stated, is to complement and/or replace these divergent systems with an integrated, enterprise wide, flexible solution that meets your diverse quality needs.

Oracle Quality is integrated with the Oracle Applications product suite to provide unified quality data definition, data collection, and data management throughout your enterprise and across your supply and distribution networks.

Oracle Quality's flexible architecture can support a wide variety of business models and can change as rapidly as business demands.

The word complement is important here. Remember that many companies have invested quite a lot in data collection systems, automatic test equipment, statistical analysis tools, etc. Our goal is to make Oracle Quality an open system with a data repository into which you can import data from existing data collection systems and out of which you can export the quality results you have collected.

Quality Data Repository

Oracle Quality helps a company achieve consistent quality reporting by providing a central and accessible repository of quality information. This is a key differentiator between Oracle and other quality systems. Many other quality systems are non-integrated point solutions.

With other systems, it is nearly impossible to analyze quality data across your enterprise — data integrity is not assured and database administration can be inconsistent.

Oracle Quality ensures data integrity by validating data as it is collected. For example, if you are collecting quality results for an item, the system verifies that the item exists in the Oracle Inventory item master. Similarly, the system verifies that suppliers and customers exist in Oracle Purchasing and Oracle Order Entry as you collect supplier and customer data. Such data integrity does not exist in a quality database that is not integrated with your key business systems.

ISO 9000 Compliance

Oracle Quality lets you collect your company's quality information and procedures to make ISO certification faster, simpler and more effective. ISO 9000 is *not* industry specific and is *not* an evaluation of a specific product or service.

It's an evaluation of the consistency in execution and maintenance of internal operation procedures that directly affect a company's ability to produce high quality products and services.

ISO 9000 requires that you fully document your business processes that ensure high quality product and service. You must then prove that you do what you've documented.

Oracle Quality helps you document and track product and process defects, non-conformances problems, and general quality issues. You can determine what quality data to collect, track, and report using user-definable collection plans. For example, you can collect quantitative information, such as defective quantities or measurements, or qualitative information, such as critical test results and defect cause codes. You can document what defects occurred, what you did with the nonconforming material, and what corrective action you took. In addition, you can attach your ISO 9000 documentation and standard operating procedures to your collection plans so that users can access these documents on-line while they're collecting quality data.

Total Quality Management

By making quality data collection a part of your standard workflow, you can distribute quality assurance responsibilities throughout your enterprise.

The most effective quality management system is one in which people in each functional area are able to define the critical quality data to collect, to take responsibility for collecting this data, and to produce meaningful output to track progress towards their quality goals.

Oracle Quality is a enterprise-wide repository for gathering and storing quality information. It helps enforce quality control and maximizes your quality tracking efficiency by integrating directly with Oracle Applications data and transactions.

Oracle Quality accommodates dynamic business needs by letting you control when and where to collect data in your supply chain. Oracle Quality's flexible architecture easily adapts to support your ever-changing TQM requirements.

Overview

Oracle Quality is an integrated quality management application designed to support manufacturers in the pursuit of total quality management (TQM), zero defects, continuous process improvement (CPI), and ISO 9000 certification. It is designed to support the diverse data collection needs of discrete, repetitive, assemble-to-order, and batch process manufacturers. Oracle Quality helps you manage and distribute critical quality information throughout your organization.

Oracle Quality can help do all of the following:

- establish quality standards for products and processes throughout the enterprise
- monitor performance relative to established quality standards
- identify and track process factors that are affecting product quality
- collect information about product defects, their causes, and their related dispositions
- ensure that test and inspection instructions are available at the appropriate steps throughout the supply chain for a given product
- ensure that the proper tests are performed at the right time and document all test results
- alert the appropriate personnel when products do not conform to standards
- provide flexible reporting on all aspects of quality management
- maintain a shared enterprise-wide repository of quality results

Collection Elements

Collection elements in Oracle Quality determine what data to collect and report. You can define an unlimited number of collection elements for attributes such as *defect*, *disposition*, *severity*, *cause*, *pass/fail results*, or for variables such as *voltage*, *resistance*, *temperature*, or *acidity*. For each collection element, you can specify a list of acceptable values or specification limits such as target value and upper and lower limits.

See Also

Overview of Collection Elements: page 3 – 2

Specifications

Specifications describe the requirements of a product. In Oracle Quality, you can define specification limits for key characteristics of the products you produce or material you receive from suppliers.

You can create item specifications by assigning a group of collection elements and their specification limits to items or categories of items. You can also create supplier specifications for items you receive from specific suppliers. Finally, you can create customer specifications specific to the product standards expected by customers. These three types of specifications help ensure that the goods you produce conform to your quality engineering standards and to your customers' quality standards.

See Also

Overview of Specifications: page 4 – 2

Collection Plans

Collection plans are similar to test or inspection plans. Collection plans define the specific collection elements that you want to collect and report on for a particular business case. Within each collection plan, you specify collection elements such as defect types, symptoms, causes, actions, critical measurements, or environmental characteristics, as well as other reference information like item, lot and serial number, operation, department, subinventory, supplier and customer. You can also choose actions to take — for example, electronic mail notifications — based on the quality results you enter for each collection element.

See Also

Overview of Collection Plans: page 0 – 2

Actions and Alerts

You can designate actions to be taken based on the results of quality data collection. You can generate alerts and electronic notifications, as well as place jobs, repetitive schedules, items, suppliers, and purchase order lines on hold.

For example, you can send an electronic mail notification to a given user or group of users, or put a job on hold when a critical measurement is outside the upper and lower specification limits. You can define action rules and related actions for any collection element. You can copy the rules and actions defined for a collection element to any collection plan containing the collection element.

Data Collection Options

You can enter results into the quality data repository by:

- entering quality results directly
 - See: Entering Quality Results Directly: page 6 – 10.
- collecting entering quality results as you transact

See:

- Entering Quality Results Associated with Move Transactions: page 7 – 11.
- Entering Quality Data for Receiving Transactions: page 8 – 8
- Entering Quality Data for Receiving Inspections: page 8 – 11
- Entering Quality Data for Service Requests: page 9 – 9
- importing quality results from external sources using the Collection Import.
 - See: Overview of Collection Import: page 6 – 24

You can enter quality results directly at any time. For example, a quality engineer can enter lot sampling results for a collection plan independent of the operator who enters the job completion transaction.

The quality engineer can also query and update the quality results that the operator initiated.

If you collect quality data as you transact, you can optionally define quality collection triggers to determine which collection plan to use for a given transaction. For example, you can indicate that you want to use a collection plan called First Pass Yield when entering move transactions for a particular assembly item. Thus, you can control when and where in the transaction process to collect quality data. By making quality data collection a part of the standard workflow, you can distribute quality assurance responsibilities throughout your organization.

You can use Collection Import to import quality data from external systems into the quality data repository. For example, you can import data from sources such as test equipment and gauges. Imported data is validated according to validation rules of the collection plan. Invalid entries are marked so that you can correct and resubmit them. This maintains the integrity of the quality data repository by rejecting invalid item numbers, supplier numbers, and defect codes. The actions that you defined in the collection plan, such as electronic mail notifications, are triggered based on the incoming data.

Querying, Reporting, and Exporting Data

Oracle Quality provides you with powerful inquiries that enable you to quickly find quality results. You can define your own selection criteria. For example, you can view failure results that are specific to item A54888 and that occurred at operation 10 during May of last year.

You can view quality results using on-line, ad hoc queries and through printed reports. You can also chart your results using trend charts, Pareto charts, control charts, and histograms. If you have purchased Statware's Statit and implemented the integration between Oracle Quality and Statit, you can view charts and descriptive statistic views using Statit's powerful graphical capabilities. See: Integrating Oracle Quality and Statware: page 10 – 2.

You can save the settings you use to create charts, descriptive statistic views, and custom reports. For example, you can create a Pareto chart that graphically illustrates the top failures for all assemblies on a specific production line. You can then save the settings for this chart. Later, after collecting additional data about failures occurring on this production line, you can re-chart your results.

Furthermore, you can copy the settings that you save for a (source) chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. Copying setting in this manner allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

You can export information for further analysis. You can also access data directly from the quality data repository with products such as Oracle Discoverer/2000 and Oracle Developer/2000 as well as other data inquiry products which can select data from Oracle databases. Direct database access is facilitated by database views. See: Exporting Quality Results: page 10 – 47 and Collection Plan and Import Results Database Views: page 5 – 6.

Tracking and Monitoring Quality Results

You can use Oracle Quality to track and monitor quality results. You can, for example use Oracle Quality to do all of the following:

- Tracking First Article Inspection Defects: page 1 – 11
- Tracking Serial Controlled Items: page 1 – 11
- Tracking Lot Controlled Items: page 1 – 12
- Analyzing Product Defects Using Charts and Reports: page 1 – 13

Tracking First Article Inspection Defects

You can use Oracle Quality to track quality results from first article inspections. If you are only interested in knowing that a part is defective and the date that it was determined to be defective, you can create your collection plan accordingly. If you choose, you can create an alert action that sends the buyer of a part an electronic mail notification each time one of their parts is found to be defective.

Tracking Serial Controlled Items

You can monitor serial controlled assemblies, subassemblies, and components by creating and using collection plans to do the following:

- record quality characteristics about serialized units received from suppliers
- record movement, inspection, test results and disposition of serialized items throughout the production process
- maintain a history of inspection and test results for a particular serialized unit including the most current recorded activity or location in work in process
- record serial number genealogy by recording the relationship between two serialized units; for example, record an assembly serial number and a component serial number
- record the shipment of a serial controlled assembly and the customer site it was shipped to
- record DOA (dead-on-arrival) details for a serialized unit when it is reported as failed at a customer site
- record RMA (return material authorization) details upon notification of a defective, serialized unit; these details can be

queried for receiving approval on the dock of your service organization or depot repair center

For example, you can create a collection plan that is used to collect component item, serial number, test date, test type, and test result data. You can then query to find all results that are related to a specific serial number.

See: Viewing Quality Results by Serial Number: page 10 – 40

Tracking Lot Controlled Items

You can monitor lot controlled assemblies, subassemblies, and components by creating and using collection plans to:

- record quality characteristics about lots received from suppliers
- track lots through production and record where a lot has been
- track lot genealogy by recording the relationship between two lots; for example, record a lot and the base lot it originated from
- record end lot quality characteristics during or after production
- record a lot and the customer it was shipped to

See: Viewing Quality Results by Lot Number: page 10 – 38

Analyzing Product Defects Using Charts and Reports

You can create a variety of charts using Oracle Quality. You can also create custom reports.

Pareto Charts

You can summarize and chart product defects using Pareto's law to focus on the most often occurring defects. For example, you can create a Product Defects collection plan containing collection elements like defect code and quantity defective, as well as reference information collection elements like item, department, and supplier. You can use this collection plan to collect detailed results for each failed inspection. Once results are collected, you can create a Pareto chart showing the quantity of failed inspections by defect code, department, item category, and so on. See: Pareto Charts: page 10 – 11.

Histograms

You can use histogram to provide a graphic summary of variation in a set of data. Histograms are useful in the study of process capability because they graphically display the shape, location, and scatter of quality results data. See: Histograms: page 10 – 15.

Trend Charts

You can use trend charts to analyze data collected over a period of time. For example, you can create a Glazing Process collection plan to collect process quality variables such as oven temperature and voltage from a glazing process. You can use this collection plan to record five readings at random times during each shift. Once the results are collected, you can create a trend chart to graphically display the results of temperature or voltage. See: Trend Charts: page 10 – 19.

Control Charts

You can use control charts to determine whether process stability has been upset by special or assignable causes. You can create the following types of control charts in Oracle Quality:

- Xbar and R charts (*XBar R*)
- Individual X and Moving Range charts (*XmR*)
- Xbar and S charts (*XBar S*)

See: Control Charts: page 10 – 25.

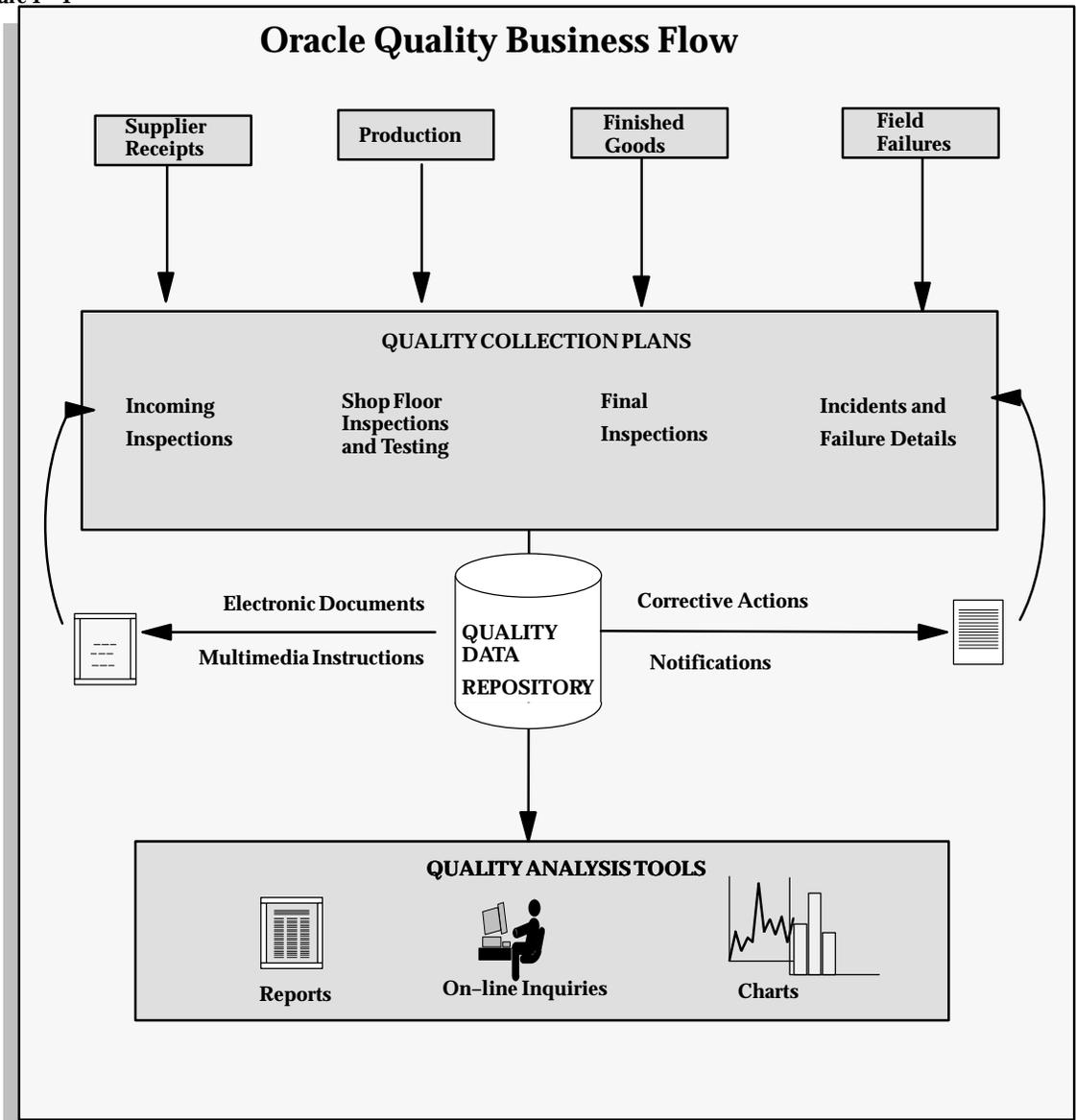
Custom Reports

Using the Quality Results ReportWriter, you can create a variety of custom reports to list and summarize results. For example, if you have created and collected results using a collection plan that contains collection elements like item, job, job quantity, quantity completed, quantity scrapped, and inspection results, you can create a report that summarizes your inspection results as well as a report that uses these same results to show yield (quantity complete versus job quantity) by job, by item, or by item category. See: Using the Quality Results ReportWriter: page 10 – 42.

Quality Business Flow Diagram

The following diagram illustrates the flow of quality information within a business using Oracle Quality:

Figure 1 - 1

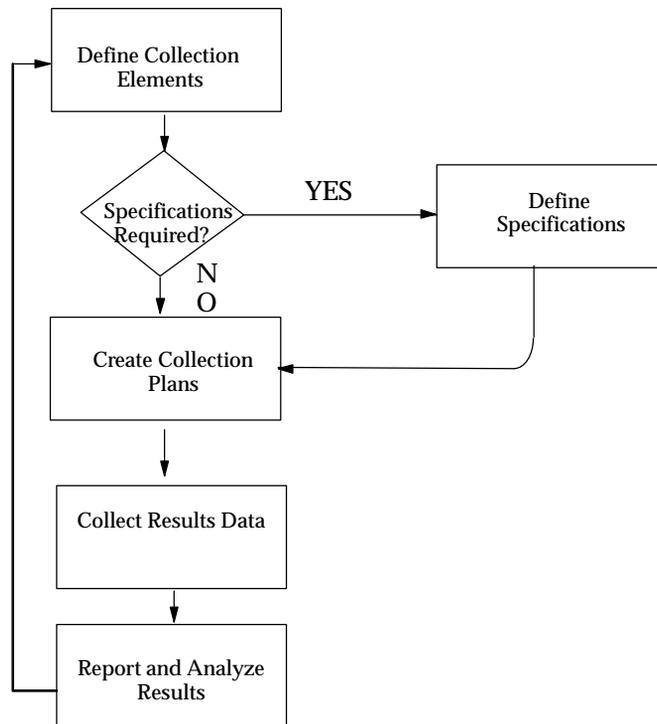


Quality Process Flow Diagram

The entire process of defining data collection components, collecting, reporting, and analyzing data can be summarized by the following diagram:

Figure 1 - 2

Oracle Quality Flow



Setting Up

This chapter contains a setup checklist and provides information about setting up Oracle Quality as well as other integrated Oracle Manufacturing Applications, including these topics:

- Overview: page 2 – 2
- System Administrator Setup for Quality: page 2 – 5
- Alert Setup for Quality: page 2 – 5
- WIP Setup for Quality: page 2 – 6
- Profile Options: page 2 – 8
- Security Functions: page 2 – 7

Overview

Before setting up Oracle Quality, consider the following:

Oracle Applications Implementation Wizard

If you are implementing more than one Oracle Applications product, you may want to use the Oracle Applications Implementation Wizard to coordinate your setup activities. The Implementation Wizard guides you through the setup steps for the applications you have installed, suggesting a logical sequence that satisfies cross-product implementation dependencies, and reduces redundant setup steps. The Wizard also identifies steps that can be completed independently, by several teams working in parallel, to help you manage your implementation process most efficiently.

You can use the Implementation Wizard as a resource center to see a graphical overview of setup steps, read online help for a setup activity, and open the appropriate setup window. You can also document your implementation, for further reference and review, by using the Wizard to record comments for each step. See: *Oracle Applications Implementation Wizard User's Guide*.

Set Up Oracle Applications Technology

The setup steps in this chapter tell you how to implement the parts of Oracle Applications specific to Oracle Quality.

The Implementation Wizard guides you through the entire Oracle Applications setup, including system administration. However, if you do not use the Wizard, you need to complete several other setup steps, including:

- performing system-wide setup tasks such as configuring concurrent managers and printers
- managing data security, which includes setting up responsibilities to allow access to a specific set of business data and complete a specific set of transactions, and assigning individual users to one or more of these responsibilities.

Also, if your product uses Oracle Workflow to, for example, manage the approval of business documents or to derive Accounting Flexfield values via the Account Generator, you need to set up Oracle Workflow. See: *Oracle Workflow Guide*.

What information must be collected and reported?

- reference information; for example, items, lots, and departments
- performance results such as failure rates and yields
- product defect types, causes, and disposition information
- process characteristics such as voltage and frequency
- critical product dimensions and comparisons with specifications
- equipment use, status, and calibration data

What is the best way to collect this data?

- directly
- as you perform transactions
- via Collection Import

Where do you need to collect the data?

- production
- finished goods
- field repairs and returns

If you decide to collect quality data while transacting, which transactions do you want to use and what events or conditions within these transactions do you want to trigger quality data collection?

- Oracle Purchasing receiving transactions or receiving inspection transactions
- Oracle Work in Process move transactions
- Oracle Service service requests

What actions are to be automatically triggered based on the quality results collected?

- operator notifications
- electronic mail notifications

How must the data be reported?

- routine reports
- ad hoc inquiries
- charts

See Also

Oracle Applications Implementation Wizard User's Guide

Oracle Applications System Administrator's Guide

Oracle Workflow Guide

System Administrator Setup for Quality

You can set up user specific E-mail/Fax IDs when you define users using the User window (from the System Administrators responsibility). If you are integrated with Oracle Office, the system automatically validates the recipient IDs (To, CC, and Bcc) that are entered for Oracle Quality *Send an electronic mail notification* alert actions when these actions are invoked.

See Also

Users Window, *Oracle System Administrator's Guide*

Defining Collection Element Alert Actions: page 3 – 29

Defining Collection Plan Element Alert Actions: page 5 – 28

Alert Setup for Quality

You can use the Default User Mail Account option in the Oracle Alert Options window to set Operating System Login ID or Application Username. If the *Send an electronic mail notification* alert action is invoked during quality data collection, but one of the recipient IDs (To, CC, or Bcc) is invalid, the system attempts to return the message to the user who invoked the alert using the E-mail/Fax ID that has been set up for that user in the User window (from the System Administrators responsibility). If the value of the Email/Fax field for the user is null, then the system returns the message to either the Operating System Login ID or Application Username.

You can also use Oracle Alert to define distribution lists. You must define distribution lists before using them in to define the recipients (To, Cc, and Bcc) of an electronic mail notification alert.

See Also

Defining a Distribution List, *Oracle Alert User's Guide*

Defining Other Options for Oracle Alert, *Oracle Alert User's Guide*

Defining Collection Element Alert Actions: page 3 – 29

Defining Collection Plan Element Actions: page 5 – 25

Work in Process Setup for Quality

Operations and routings are defined in Oracle Bills of Material and can be assigned to the discrete jobs and repetitive schedules that you define in Oracle Work in Process. Routings can be changed in Oracle Work in Process by adding, updating, and deleting operations as required. For example, you can add an inspection or material disposition operation to a standard routing if a quality problem arises during the production process.

You can collect quality results as you enter move transactions in Work in Process. Results values for WIP-specific reference information collection elements (context elements) that are associated with move transactions are automatically saved in Oracle Quality.

You can define actions in Oracle Quality that can be executed in Oracle Work in Process. Specifically, you can assign a shop floor status to an intraoperation step, you can place a job on hold, or you can hold all schedules on a production line based on the quality results that are collected. Shop floor statuses must be defined in Oracle Work in Process before they can be used to define actions in Oracle Quality.

See Also

Reference Information Collection Elements: page 3 – 7

Quality Collection Transactions: page 5 – 39

Application Specific Actions: page 3 – 21

Adding and Updating Operations, *Oracle Work in Process User's Guide*

Setting up Routings for Quality Data Collection: page 7 – 5

Security Functions

The system administrator sets and updates security functions.

Quality Action Log:Purge (QAALINF_PURGE)

Determines whether entries can be deleted from the action log. This security function is automatically set when the *Quality* user responsibility is selected. When set, users can choose Delete from the Edit Menu while in the Action Log window. If the *Quality Inquiry* user responsibility is selected, this security function is not set.

See Also

Overview of Function Security, *Oracle Applications User's Guide*
Viewing and Deleting Action Log Entries: page 10 – 45

Profile Options

Oracle Quality profile options control how data is accessed and processed and how Oracle Quality integrates with other Oracle and non-Oracle products. The following table list all the profile options for Oracle Quality, the level at which they can be updated, whether they are required, and their default values, if any:

Profile Option	User	System Administrator				Requirements	
	User	User	Resp	App	Site	Required?	Default Value
QA:Action Processing Mode	✓	✓	✓	✓	✓	Required	Concurrent
QA:Blind Results Entry	✓	✓	✓	✓	✓	Optional	Blind Entry Off
QA:Default Collection Plan	✓	✓	✓	✓	✓	Optional	Null
QA:Default Specification Target	✓	✓	✓	✓	✓	Required	No
QA:PO Inspection					✓	Optional	PO Inspection
QA:Quality Category Set	✓	✓	✓	✓	✓	Optional	Null
QA:Statistics Engine	✓	✓	✓	✓	✓	Optional	Quality
QA:Statistics Engine Path	✓	✓	✓	✓	✓	Optional	Null

Table 2 - 1 (Page 1 of 1)

Key	
✓	You can update the profile option.

QA:Action Processing Mode

Determines the processing mode of actions that are invoked as quality results are collected or updated.

The Display a message to the operator, Reject the input message, and the Assign a Value action are processed immediately regardless of how this profile option is set. See: Action Processing: page 6 – 16.

Alert actions are processed concurrently in the background regardless of how this profile option is set. See: Action Processing: page 6 – 16 and Alert Actions: page 3 – 21.

Available options are as follows:

Concurrent processing	When you save quality results, the system spawns a concurrent process and returns control immediately to you, allowing you to continue working.
On-line processing	The system processes your actions while you wait, and control is returned once action processing is completed.

If a concurrent process fails, a failure message appears in the concurrent manager log file and in the Quality Action Log. See: Viewing and Deleting Action Log Entries: page 10 – 45.

QA:Blind Results Entry

Indicates whether, as quality results are collected, the specification limits and UOMs associated with collection plan elements or specification elements are displayed.

Available values are listed below:

Blind Entry On	The operator does not see the specification limits and UOMs when collecting quality results. Actions associated with results are, however, processed regardless.
Blind Entry Off	The operator sees the specification limits and UOMs when collecting quality results.

QA:Default Collection Plan

Indicates which collection plan to use as a default when entering, updating, and viewing quality results. This default is also used when viewing lot and serial quality results and when finding and viewing action log entries. The default collection plan is not used during transactional data collection.

QA:Default Specification Target

Indicates whether to use specification element target values as collection plan element default values when you collect quality results.

If you do not select a specification when entering quality results, or if no specification element target values are defined, target values from collection elements are defaulted instead.

If you have explicitly defined collection plan element default values, these values are used regardless of how this profile option is set. See: Default Value Assignment Rules: page 6 – 5.

Available values are listed below:

Yes	Defaults target values from specification elements.
No	Does not default target values from specification elements.

QA:PO Inspection

Determines whether inspection results and quantities accepted/rejected are entered in Oracle Purchasing or Oracle Quality.

Available options are as follows:

Quality Quality	If this option is set, when you choose the Inspect button from the Oracle Purchasing Receiving Transactions window, Oracle Quality's Enter Quality Results window appears. See: Entering Quality Results Directly: page 6 – 10.
Oracle Purchasing	If this option is set, when you choose the Inspect button from the Oracle Purchasing Receiving Transaction window, Oracle Purchasing's Inspection Details window appears. See: Inspecting Received Items, <i>Oracle Purchasing User's Guide</i>

QA:Quality Category Set

Indicates which item category set to use as the default in Oracle Quality. Item category sets are defined in Oracle Inventory. See: Overview of Item Categories, *Oracle Inventory User's Guide* and Defining Category Sets, *Oracle Inventory User's Guide*.

The item category set specified here is used as the default when defining item category specifications. You must therefore set this profile option before defining item category specifications.

If you are entering quality results for an item using a collection plan that is associated with a specification, but no specification for that item can be found, then the system uses the Quality Category Set to find a specification that is defined with the item's category. See: Finding Specifications While Entering Results Directly: page 6 – 12 and Finding Specifications During Transactional Data Collection: page 6 – 22.



Attention: You can only view specifications associated with the Quality Category Set specified by this profile option. Changing this profile option prevents you from viewing specifications entered under a previously entered category set.

QA:Statistics Engine

Determines which statistics engine to use when creating charts, viewing descriptive statistics, and exporting the data used to create these charts and views.

Oracle Quality Charts and descriptive statistics views are create in Oracle Quality. The results used to created these charts and views can be exported to an ASCII file.

Statit Charts and descriptive statistic views are created using the Statit statistical analysis package. The results used to create these charts and views can be exported directly to Statit.



Warning: If you choose to use the Statit engine, you must set the QA:Statistics Engine Path profile option.

See: Integrating Oracle Quality and Statit: page 10 – 2.

QA:Statistics Engine Path

Indicates where the Statit software is installed. This path is also used when Statit data is saved and files are exported.

Example: c:\statit

See Also

Setting Your Personal User Profile, *Oracle Applications User's Guide*

Collection Elements

This chapter tells you everything you need to know about defining and using collection elements, including these topics:

- Overview: page 3 – 2
- Collection Element Types: page 3 – 4
- Collection Elements: page 3 – 7
- Defining Collection Elements: page 3 – 12
- Defining Collection Element Values: page 3 – 16
- Defining Collection Element Specification Limits: page 3 – 18
- Quality Actions: page 3 – 20
- Defining Collection Element Actions: page 3 – 27
- Defining Collection Element Alert Actions: page 3 – 29
- Associating Output Variables with Actions: page 3 – 35
- Viewing Collection Elements: page 3 – 37

Overview

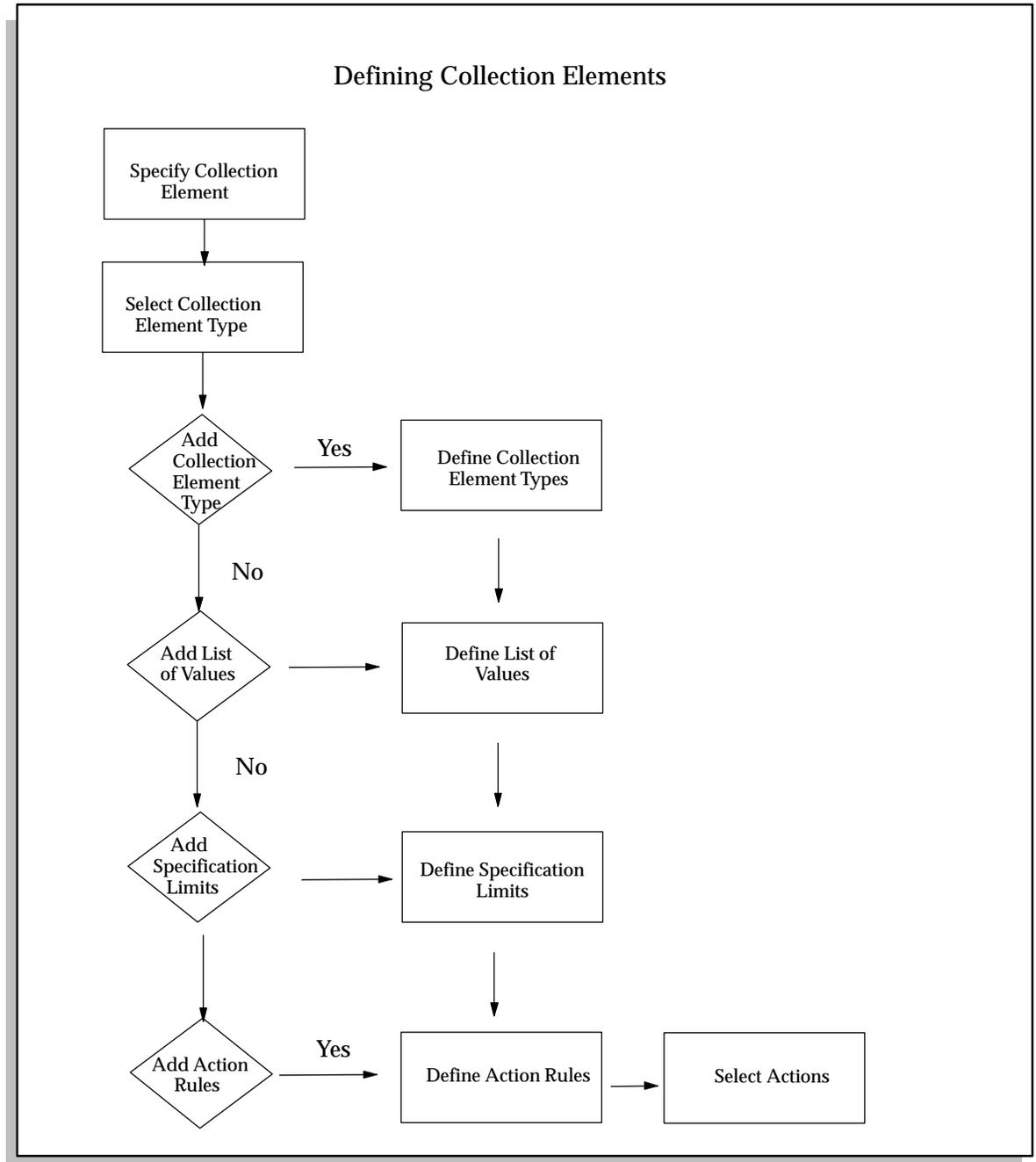
In Oracle Quality, collection elements represent the basic data that must be collected and analyzed. In general, collection elements are used to do the following:

- identify the object you are collecting information about; for example, a unique lot or serial number
- provide reference information about the quality collection; for example, operation sequence, purchase order number, or transaction date
- provide cross-reference information for analysis; for example, supplier, customer, or department
- represent a quality characteristic; for example, voltage, viscosity, defect code, or symptom

You can define as many collection elements, sharable across the various organizations defined in Oracle Manufacturing, as required. See: *Defining Organization Access, Oracle Inventory User's Guide*.

Oracle Quality also provides several predefined collection elements for your convenience. See: *Reference Information Collection Elements: page 3 – 7*.

Figure 3 - 1



Collection Element Types

Collection element types can be used to sort and group collection elements. There are three predefined collection element types. The first two, *attribute* and *variable*, apply to product qualities such as color, taste, size, passed/failed. The third, *reference information*, refers to common objects within Oracle Applications.

Attribute Collection Elements

Attributes collection elements often represent the outcome of a process, such as a pass/fail result, and often have a limited list of acceptable values.

Attribute Collection Elements	List of Values
color	blue yellow red
defect	broken lead cracked chassis component failure
disposition	scrap rework down-grade

Table 3 - 1 Examples of Attribute Collection Elements

Variable Collection Elements

Variable collection elements often represent numeric measurements; for example, size, viscosity, and temperature and often have a range of acceptable values, or specification limits expressed as preferred values with an acceptable degree of tolerance.

Variable Collection Elements	Specification Limits
shaft diameter	3.25 cm. \pm 0.05 cm.
acidity	6.55 \pm 0.05
temperature	98 ⁰ F \pm 2 ⁰

Table 3 - 2 Examples of Variable Collection Elements

Reference Information Collection Elements

Some collection elements reference database objects defined in other Oracle Applications. These collection elements are known as reference information collection elements. See: Reference Information Collection Elements: page 3 – 7.

See Also

Defining Collection Element Types: page 3 – 5

Defining Collection Element Types

► To define collection element types:

1. Navigate to the Collection Element Type QuickCodes window.
2. Enter an alphanumeric Code that describes a collection element type.

You can define a maximum of 250 QuickCodes for a single QuickCode type. You cannot change the values in this field after saving them. To remove an obsolete QuickCode you can either disable the code, enter an end date, or change the meaning and description to match a replacement code.

3. Enter the Meaning for the collection element type.

The meaning and description are displayed in the list of values for the enabled collection element types.

4. Enter the Description.
5. Optionally, enter the From Effective Date.

You cannot use the collection element type before this effective date. If you do not enter a From Effective Date, the collection element type is valid immediately.

6. Optionally, enter the To Effective Date.

You cannot use the collection element type after this date. Once a collection element type expires, you cannot select this collection element type as you define collection elements, but you can query records that already use it. If you do not enter a To Effective Date, the collection element type is valid indefinitely.

7. Check the Enable box to enable the collection element type.

If you disable a collection element type, you cannot select it as you define collection elements, but you can still query records that already use it. You can disable but not delete collection element types.

8. Save your work.

See Also

Collection Element Types: page 3 – 4

QuickCodes, *Oracle Applications User's Guide*

Defining Collection Elements: page 3 – 12

Collection Elements

You can define your own collection elements then add them to collection plans. You can also add predefined collection elements to collection plans.

See Also

Reference Information Collection Elements: page 3 – 7

Predefined Collection Elements: page 3 – 11

Reference Information Collection Elements

Reference information collection elements reference database objects that are defined in other Oracle Applications, such as Oracle Inventory, Oracle Work in Process, Oracle Purchasing, and Oracle Order Entry. These collection elements are predefined in Oracle Quality.

When the values for these collection elements can be derived as transactions are entered and saved in other Oracle Applications, they are referred to as context elements since their values are derived "in the context of" transactions. For example, the quality results value for the context element *Item*, can be derived as assembly items are scrapped (moved into a scrap intraoperation step) in the Oracle Work in Process Move Transactions window. Quality results values for *Item* can also be derived as you enter receiving transactions in the Oracle Purchasing Receiving Transactions window.

All context elements are reference information collection elements, but not all reference information collection elements are context elements. All context elements can be used as triggers for collection transactions. See: Quality Collection Transactions: page 5 – 39 and Collection Transactions and Context Element Relationships: page 5 – 40.

Reference information collection elements are defined as mandatory, enabled, and displayed and cannot be deleted from Oracle Quality.

WIP Collection Elements

The following reference information collection elements are associated with Oracle Work in Process:

- Item

- Job
- Production Line
- (From) Department
- (To) Department
- (From) Intraoperation Step
- (To) Intraoperation Step
- (From) Operation Sequence
- (To) Operation Sequence
- (From) Operation Code
- (To) Operation Code
- Quantity
- Reason Code
- Resource Code
- Sales Order Number

Purchasing Collection Elements

The following context elements are associated with Oracle Purchasing:

- ASL Status
- Department (OSP Receiving Transactions)
- Destination Type
- Expected Receipt Date
- Freight Carrier
- Hazard Class
- Inspection Result Action
- Item
- Job
- Location
- Locator
- Number of Container
- Order Type

- Ordered Quantity
- PO Line Number
- PO Number
- PO Packing Slip **
- PO Receipt Date **
- PO Receipt Number **
- PO Release Number **
- PO Routing Name **
- PO Shipment **
- PO Shipped Date **
- Parent Transact in Quantity
- Production Line (OSP Receiving Transactions)
- Quantity **
- Reason Code
- Received By
- Requestor
- Revision
- Subinventory (OSP Receiving Transactions)
- Supplier
- Supplier Lot Number
- To Operation Sequence (OSP Receiving Transactions)
- Transaction Type (Inspection Transactions only)
- UN Number
- Unit of Measure
- Vendor Item Number

**Not a context element/collection trigger

Service Collection Elements

The following context elements are associated with Oracle Service:

- Actual Resolution Date

- Customer
- Expected Resolution Date
- Incident Type
- Item
- Item Category
- Owner
- Problem Code
- Product
- Resolution Code
- Severity
- Urgency

Inventory Collection Elements

The following context elements are associated with Oracle Inventory:

- Component Item **
- Component UOM **
- Component Revision **
- Component Subinventory **
- Component Locator **
- Component Lot Number **
- Component Serial Number **
- Item
- Locator
- Lot Number**
- Quantity
- Reason Code
- Revision**
- Serial Number**
- Subinventory
- Unit of Measure

**Not a context element/collection trigger

Order Entry Collection Elements

The following context elements are associated with Oracle Order Entry:

- Customer
- RMA Number**
- Sales Order Number
- SO Line Number**

**Not a context element/collection trigger

See Also

Predefined Collection Elements: page 3 – 11

Predefined Collection Elements

There are several collection elements that are commonly used in quality data collection, analysis, and control and are therefore predefined in Oracle Quality:

- Cause Code
- Defect Code
- Disposition Code
- Quality Code
- Quantity Defective
- Severity Code
- Symptom Code
- Test Status

See Also

Overview of Collection Elements: page 3 – 2

Defining Collection Element Types: page 3 – 5

Common Collection Plan Elements: page 5 – 7

Defining Collection Elements

You can define an unlimited number of collection elements. The collection elements that you define can be added to collection plans to determine what quality results data to collect, track, and report. You can add, change, and delete collection elements as your data collection requirements change.

You can customize your collection elements by:

- defining collection element values
- defining specification limits
- defining action rules and quality actions

► **To define a collection element:**

1. Navigate to the Collection Elements window.

The screenshot shows the 'Collection Elements (GLO)' window. It features a title bar with the text 'Collection Elements (GLO)' and standard window controls. The main area is divided into sections: 'Collection Element' and 'Element Type' at the top; a 'Label' section with 'Prompt' and 'Hint' fields; and a 'Data' section with 'Data Type' (set to 'Character'), 'Reporting Length' (set to '30'), 'Decimal Precision', 'UOM', 'Default Value', and 'SQL Validation Statement' fields. A 'Mandatory' checkbox is also present. At the bottom, there are three buttons: 'Spec Limits', 'Values', and 'Actions'.



Attention: You can define collection elements one-at-a-time in the Collection Elements window. This method is described below. You can, however, also define several collection elements simultaneously using the Collection Elements Summary window. See: Combination Block, *Oracle Applications User's Guide* and Navigating Within a Combination Block, *Oracle Applications User's Guide*.

2. Enter the Collection Element name.

You can use alphanumeric characters (a/A through z/Z and 0 through 9), spaces, and underscores (_) in the collection element name. You cannot use special characters such as quotes, commas, and periods. You also cannot use words that are reserved for column names in collection plans such as NAME, OCCURRENCE, ORGANIZATION_ID, and CREATED_BY.

Collection element names are not differentiated by case. For example, if a Diameter collection element exists, you cannot enter a collection element named DIAMETER.

3. Check the Enabled check box to enable the collection element.

You can only add enabled collection elements to collection plans and specifications.

4. Select the collection Element Type for the collection element. See: Collection Element Types: page 3 – 4.

You can select any enabled collection element type.

5. Enter text for the data entry Prompt.

The prompt defaults to the name of the collection element but can be overwritten. As you enter quality results prompts are displayed in the Results region of the Enter Quality Results window. Prompts are also used as column headings for custom reports created using the Quality Results ReportWriter.

6. Enter the Hint.

Hints guide the use through the data entry process by appearing in the message line as you enter quality results. See: Message Line, *Oracle Applications User's Guide*.

7. Select the Data Type.

You can select any data type. The available data types are numeric, character, and date.

8. Check the Mandatory check box to indicate that a value must always be entered for this collection element when entering quality results.

A mandatory collection element can be redefined as non-mandatory when added to a collection plan.

9. Enter the Reporting Length.

The reporting length specifies how much space is allocated to quality result values for this collection element on reports and inquiries. The reporting length also determines how much space is

allocated to this collection element in the Enter Quality Results window.



Attention: The reporting length does not determine the amount of space used to store quality results values in the quality data repository. Results values can be up to up to 150 characters in length.

10. If the data type is number, enter the Decimal Precision.

If you define specification limits for this collection element, the decimal precision entered here controls the decimal precision of the specification limit values you can define.

11. Optionally, enter the UOM. See: Overview of Units of Measure, *Oracle Inventory User's Guide*.

Units of measure can be entered for any collection elements regardless of data type.

12. Optionally, enter the Default Value for the collection element.

Default values automatically appear when you enter quality results for this collection element. For example, assume you define a collection element called Inspector ID. Since inspector 101 performs most inspections, you enter 101 as the Default Value for the collection element. As you enter quality results for the Inspector ID collection element, the value 101 automatically appears. You can override this value. See: Default Value Assignment Rules: page 6 – 5.

13. Optionally, enter the SQL Validation Statement.

You can base a collection element's data validation on any table in the Oracle database. To do this, you can define a SQL validation statement that Oracle Quality uses for validation when you collect quality data. This SQL statement must be a SELECT statement in which you select two columns. For example, if you have entered machine numbers in a database table, you can cross validate machine numbers entered as you collect quality results against the numbers. See: *SQL*Plus User's Guide and Reference*, Release 3.2.

For example to validate machine numbers from a table called 'machine_numbers' stored in the database, enter the following SQL validation statement:

```
SELECT machine_number, machine_description  
FROM machine_numbers  
WHERE NVL(disable_date, SYSDATE+1) > SYSDATE  
AND organization_id=:parameter.org_id  
ORDER BY custom_machine_number
```



Attention: To constrain the SQL Statement to the current organization, you can use the variable ':parameter.org_id' for the current organization id. To constrain the SQL Statement to the current user's id, you can use the variable ':parameter.user_id' for the current user's id.

If you define both a SQL validation statement and a list of collection element values, only the list of values is used for validation; the SQL validation statement is ignored.

14. Save your work.

► **To define collection element specification limits:**

- See: Defining Collection Element Specification Limits: page 3 – 18.

► **To define collection element values:**

- See: Defining Collection Element Values: page 3 – 16.

► **To define collection element actions:**

- See: Defining Collection Element Actions: page 3 – 27.

► **To delete collection elements:**

1. Navigate to the Collection Elements window.
2. Select the Collection Element using Query Find. See: Searching for Information, *Oracle Applications User's Guide*.

You cannot delete collection elements that have been added to collection plans or specifications even if they have not been used to collect quality results. You cannot delete collection elements that are referenced in settings that have been saved. See: Copy Settings: page 10 – 4.

You also cannot delete predefined reference information collection elements. You can disable collection elements that you cannot delete.

3. Choose Delete Record from the Edit Menu.
4. Save your work.

See Also

Collection Elements: page 3 – 7

Defining Collection Element Values

You can define values and lists of values for collection elements. You can copy collection element values and lists of values to collection plan elements. For example, if you define a list of values for the Defect Code collection element, you can copy one or all of these values to a collection plan element.

Values and lists of values are used to validate data as it is collected. For example the list of values for a *Pass_Fail* collection element might include only Pass and Fail. You cannot collect results values that are not included on this list.

► To define a list of collection element values:

1. Navigate to the Collection Elements window.
2. Select the Collection Element.

You can define values and lists of values for user-defined collection elements and predefined collection elements.

3. Choose the Values button. The Values window appears.
4. Enter the Short Code.

The short code you enter must match the data type of the collection element. If you have defined a Nonconformity collection element that is character, you could enter an abbreviated short code such as *lead* to indicate a *broken lead* nonconformity. An abbreviation of this sort might be necessary because short code values can only be up to 11 characters long.

5. Enter the Description.

The Description provides additional information about the short code. In the above example, the short code *lead* might have a Description of *broken lead*.

6. Save your work.

Note: You can explicitly save your work, but if you do not, your work is saved when the collection element is saved.

► To delete collection element values:

- From the Values window, select the value's short code. Choose *Delete Record* from the Edit Menu.

You can only delete collection element values if they have not been copied to a collection plan element.

See Also

Defining Collection Elements: page 3 – 12

Defining Collection Plan Element Values: page 5 – 20

Defining Collection Element Specification Limits

You can define specification limits for collection elements of any collection element or datatype. However specification limits — which include a target value and three sets of upper and lower range limits — are normally associated with numeric collection elements. Specification limits can be changed without restriction.

You can create specification elements by adding collection elements to your specifications. Collection element specification limits are defaulted to these specification elements. For example, if you create a specification element by adding the Frequency collection element to a specification, the target value of 2000, and lower and upper user-defined, specification, and reasonable range limits — 1800–2200, 1720–2080, and 1600–2400 respectively — are defaulted to the specification element.



Attention: If you are defining specification limits for numeric collection elements, the decimal precision of the collection element controls the decimal precision of the specification limits. For example, if the decimal precision of the collection element is 3, you can define specification limits of up to 3 decimal places such as 3.999.

► **To define collection element specification limits:**

1. Navigate to the Collection Elements window.
2. Select the Collection Element.

You can select any collection element, even those that are disabled.

3. In the Collection Elements window, choose the Spec Limits button. The Specification Limits window appears.

4. Enter the Target Value.

The target value represents the preferred value.

5. Enter the lower and upper User-Defined Range limits.

The lower and upper user-defined range limits can be used to represent a process control limit. Your user-defined limits can be inside of, outside of, or overlapping your specification range limits. The upper limits must exceed the lower limits.

6. Enter the lower and upper Specification Range limits.

The lower and upper specification range limits can represent engineering tolerances. The upper limits must exceed the lower limits.

7. Enter the upper and lower values Reasonable Range limits.

The lower and upper reasonable range limit ensures that you collect values that make sense. The upper limits must exceed the lower limits.

8. Save your work.

Note: You can explicitly save your work, but if you do not, your work is saved when the collection element is saved.

Quality Actions

As you collect quality data, actions can be invoked. You can assign actions and action rules to collection elements. You can copy collection element action rules and actions to collection plan elements. For example, if you use the Defect Code collection element on most of your collection plans, you can define action rules and actions for this collection element, then copy these rules and actions to your collection plan elements.



Attention: You can define the same actions and action rules for collection elements and collection plan elements with one exception: the Assign a Value action. You can only define the Assign a Value action for collection plan elements.

As quality data is collected, results values are used in the evaluation of action rules associated with collection plan elements. When an action rule is found to be true, the action associated with that action rule is invoked.

Quality actions are defined in a multistep process:

- define action rules which determine when an action is invoked
See: Action Rules and Invoked Actions: page 3 – 23
- specify what actions the rule invokes when true
See: Action Details: page 3 – 24
- sequence action rules to determine the evaluation sequence
See: Action Rule Sequencing: page 3 – 25
- define action details, if required

Message Actions

Message actions either display or log a message. Message actions can be used to prompt an operator to take an immediate action, such as putting the nonconforming part into a separate holding area or shutting down faulty equipment. They provide immediate feedback and help resolve problems at the source.

Message actions require action details. For example, when you define the *Display a message to the operator* action, you must enter the message that is to be displayed. Message actions options are as follows:

Display a message to the operator	Displays the message entered to the operator.
--	---

Reject the input

Displays the message entered message and rejects the input. Before you can continue with quality data collection, you must enter an acceptable quality results value.

Post an entry to the Quality Action Log

Posts the message entered to the Quality Action Log. For example, you can post an entry each time a critical part is found to be defective so that the source of the problem can be determined and eliminated. This creates a quality results audit trail. See: Viewing and Deleting Action Log Entries: page 10 – 45.

Alert Actions

Alert actions, which are similar to Oracle Alerts, can launch various processes as well as send electronic mail notifications to users. See: Defining Collection Element Alert Actions: page 3 – 29 and Defining Collection Plan Element Alert Actions: page 5 – 28.

Quality alert actions include:

- *Execute an operating system script*
- *Execute a SQL script*
- *Launch a concurrent request*
- *Send an electronic mail notification*

User-Defined Actions

There is only one user-defined action, the Assign a Value action. This action assigns a value to a collection plan element based upon a user-defined formula or a user-defined SQL script. The Assign a Value action can *only* be defined for collection plan elements. See: Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34.

Application Specific Actions

Actions are either specific to an Oracle Applications product, and act upon database objects associated with that product, or they are non-product specific.

Work in Process Actions

Actions associated with Oracle Work in Process are as follows:

Assign a shop floor status to the intraoperation step Assigns the shop floor status that you specify in the Action Details region of the Quality Actions window to the 'To move' intraoperation step of the operation you are moving assemblies into. Shop floor statuses can be used to prevent movement out of a particular job or line/assembly intraoperation step or over an operation step. You can only assign shop floor statuses that are active in Work in Process. See: Shop Floor Statuses, *Oracle Work in Process User's Guide*.

Shop floor statuses assigned by Quality Actions can be changed in Work in Process. See: Assigning and Viewing Shop Floor Statuses, *Oracle Work in Process User's Guide*.

Place the job on hold Changes the status of the job to On Hold. See: Discrete Job Statuses, *Oracle Work in Process User's Guide*.

The statuses of jobs placed On Hold by Quality Actions can be changed in Work in Process. See: Changing Discrete Job, *Oracle Work in Process User's Guide*.

Hold all schedules building this assembly on this production line Changes the status of all repetitive schedules on a production line to On Hold. See: Repetitive Schedule Statuses, *Oracle Work in Process User's Guide*.

The statuses of schedules placed On Hold by Quality Actions can be changed in Work in Process. See: Changing Repetitive Schedules, *Oracle Work in Process User's Guide*.

Purchasing Actions

Actions associated with Oracle Purchasing or Oracle Supplier Scheduling are as follows:

Accept the shipment Accepts an inspected shipment from a supplier. You can correct erroneously accepted shipment information in Oracle Purchasing. See: Entering Returns, *Oracle Purchasing Control User's Guide* and Entering Corrections, *Oracle Purchasing Control User's Guide*.

Reject the shipment	Rejects a shipment from a supplier. Shipments that are rejected by Quality can be reinspected.
 Attention:	The Accept and Reject the Shipment transaction work in conjunction. You cannot define one without the other.
Place the supplier on hold	Places the supplier on hold. You cannot approve purchase orders for suppliers on hold. Suppliers placed on hold by quality actions can be released in Oracle Payables. See: Adjusting Suppliers, <i>Oracle Payables User's Guide</i> .
Place a document or release on hold	Places the purchase order or release on hold. You cannot print, receive against, invoice, or approve for the future purchase orders or releases that are on hold.
 Attention:	This action does not support internal requisition audits. It only supports purchase orders or releases. Documents placed on hold by Quality Actions can be released in Oracle Purchasing. See: Controlling Documents, <i>Oracle Purchasing User's Guide</i> .
Assign an ASL Status	Updates the approved supplier's status to the status that you specify. See: Approved Supplier Status, <i>Oracle Supplier Scheduling User's Guide</i> . Supplier statuses assigned by quality actions can be changed in Supplier Scheduling. See: Defining the Supplier and Item/Commodity Combination, <i>Oracle Supplier Scheduling User's Guide</i> .
	Caution: If you use the Assign an ASL Status action on a plan that has the Supplier but not the Item collection element on it, the ASL status is applied to all supplier and item/commodity combinations for that supplier.

There are dependencies between some application specific actions and context elements. See: Dependencies Between Context Elements and Actions: page 5 – 24.

Action Rules and Invoked Actions

Action rules define conditions that, when found to be true, invoke actions. They are evaluated during the quality data collection process.

You can define more than one action rule for a collection element or collection plan element. You can also define one or more related actions per action rule.

Two examples of action rules and the actions they invoke are as follows:

- when "Severity equals most severe" then *Place the job on hold*
- when "Oven temperature is outside the upper and lower specification limits" then *Send an electronic mail notification*

Example: Action Rules

Suppose you define a Tolerance collection element and assign it several possible values two of which include OOT High (Out-of-Tolerance High) and OOT Low (Out-of-Tolerance Low). You then add the Tolerance collection element to a collection plan but only copy the two 'out-of-tolerance' values to it. Next you define an action rule and related action such as "when Tolerance = OOT High" then "Display a message to the operator." In this example, if the results value entered for Tolerance is OOT High, the display action is executed.

Action Details

Some actions require action details. For example, when you associate the "*Assign a shop floor status to the intraoperation step*" action with an action rule, you must specify which shop floor status is to be assigned when the action is invoked during data collection.

Other actions, such as the *Place the job on hold* action, do not require action details. When an action rule that is associated with this action, for example "when Defect Code equals Severe" then "Place the job on hold," is found to be true, the status of the job is automatically changed to On Hold.

See Also

Application Specific Actions: page 3 – 21

Dependencies Between Context Elements and Actions: page 5 – 24

Defining Collection Element Actions: page 3 – 27

Defining Collection Plan Element Actions: page 5 – 25

Action Rule Sequencing

You can sequence, or order, action rules. Sequencing action rules establishes the order in which action rules are evaluated as data is collected.

One Rule Per Sequence

When action rules are mutually exclusive you can define a single action rule for each sequence number. Each action rule can be associated with one or more actions. In this scenario, if the action rule for the first sequence number is not true, then the action rule at the next sequence number is evaluated, until an action rule at some sequence is evaluated as true. When an action rule is evaluated as true, evaluation stops and the action or actions associated with the action rule are invoked.

For example, consider the action rules associated with the Oven Temperature collection element:

- Seq 10 Action Rule: When Oven Temperature is outside the upper and lower specification limits (190 to 210 degrees F), *Send an electronic mail notification* and *Place the job on hold*.
- Seq 20 Action Rule: When Oven Temperature is outside the user-defined specification limits (195 to 205 degrees F), *Display a message to the operator*.

If an Oven Temperature value of 185 is collected, the action rule at sequence 10 is true and the actions that are specified for that rule — *Sending an electronic mail notification* and *Placing the job on hold* — are invoked. The action rule at sequence 20 is not evaluated even though the 185 value is outside the range specified.

If an Oven Temperature value of 192 is collected, the action rule at sequence 20 is the first rule to be evaluated and found to be true a warning message notifying the operator is displayed.

Multiple Rules per Sequence Number

When action rules are not mutually exclusive, you can define multiple action rules for each sequence number. In this scenario, all action rules associated with the same sequence number are evaluated. Even if the first action rule is evaluated as true, the subsequent action rules with the same sequence are evaluated.

For example, consider the action rules associated with the Defect Code collection element:

- Seq 10/1st Action Rule: When Defect Code is greater than 3, *Send an electronic mail notification* to the manager of the QA Department.
- Seq 10/2nd Action Rule: When Defect Code equals 9 (most severe defect), *Place the job on hold* and *Display a message to the operator*.

If a Defect Code value 4 is collected, the 1st action rule at sequence 10 is true and the action specified for that rule — *Send an electronic mail notification* — is invoked. The 2nd action rule at sequence 10 is also evaluated, but is found to be not true and no action is taken. If a Defect Code value of 9 is collected, the 1st action rule at sequence 10 is evaluated as true and the action specified for the rule — *Send an electronic mail notification* — is invoked. The 2nd action rule at sequence 10 is also evaluated as true and the actions specified for the rule — *Place the job on hold* and *Display a message to the operator* — are invoked.

See Also

Defining Collection Element Actions: page 3 – 27

Defining Collection Element Alert Actions: page 3 – 29

Defining Collection Plan Element Actions: page 5 – 25

Defining Collection Plan Element Alert Actions: page 5 – 28

Defining Collection Element Actions

You can define quality actions for collection elements. Defining quality actions is a multistep process and requires that you:

- define action rules which determine when an action is invoked
- specify what actions the rule invokes when evaluated as true
- define action details, if required, to carry out the action
- sequence action rules to determine the evaluation sequence

► **To define collection element action rules:**

1. Navigate to the Collection Elements window.
2. Select the Collection Element.

You can select any enabled collection element.

3. Choose the Actions button. The Quality Actions window appears.



Attention: In the Action Rules region of the Quality Actions window, enter the Sequence number for the action rule. See: Action Rule Sequencing: page 3 – 25.

The Sequence number establishes the order in which action rules are evaluated as data is collected. The sequence number can be from 0 to 99999.

4. Select the Condition that must be met to invoke the action. See: Query Operators: page C – 4.
5. Choose either the Value or Spec Limit button to specify the evaluation method.

Value: If you choose Value, as quality data is collected the action rule is evaluated using the results value and the value or values entered here. If you have defined values for the collection element, you must choose a value from this list. If you have not defined values for the collection element, you can enter any value.

Spec Limit: If you choose Spec Limit, as quality data is collected the action rule is evaluated using the quality results value and either the specification limit target value, the upper or lower user-defined range limits, or the upper or lower specification range limits.

Spec Limit can be used to define action rules that evaluate numeric results.



Attention: You are automatically precluded from collecting data that is not within the user-defined range limits. Therefore these range limits cannot be used to define action rules.

6. If the Condition selected requires a range of values, enter both the From and To value. If the Condition selected requires only a single value, enter only the From value.



Attention: Some conditions (e.g. Is Entered and Is Empty) do not require values.

If you have chosen the Values, and a list of values has been defined for the collection element, you can only select values from this list. If you have not defined collection element values, you can enter any value. See: Defining Collection Element Values: page 3 – 16.

► **To associate actions with action rules:**

1. From the Quality Actions window, select an Action Rule in the Action Rules region.
2. Select an Action in the Actions this Rule Invokes region. See: Quality Actions: page 3 – 20.

You can associate one or more actions with each action rule. However, if the action selected requires action details, you must define action details before selecting another action.

Some dependencies exist between collection plan elements and actions. For example, you can only define an "Assign a shop floor status to the intraoperation step" action, if you have first created the 'To Operation Sequence' and 'To Intraoperation Step' collection elements. See: Dependencies Between Context Elements and Actions: page 5 – 24.

► **To define action details:**

- If the selected action requires a message, enter the message in the Action Details region. Messages can be up to 256 characters in length. See: Message Actions: page 3 – 20.

If the selected action requires a status code, enter the status code in the Action Details region. See: Application Specific Actions: page 3 – 21.

If the action selected is an alert action, see: Defining Collection Element Alert Actions: page 3 – 29.

3. Save your work.

Defining Collection Element Alert Actions

There are four alert actions available in Oracle Quality:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*
- *Launch a concurrent request*

Oracle Quality alert actions are similar but distinctly different from the event alerts you can define using Oracle Alerts. They share the same underlying database tables and require some of the same setups. However, Quality alerts do not have the full functionality of Oracle Alerts. See: Overview of Oracle Alert, *Oracle Alert User's Guide* and Alert Setup for Quality: page 2 – 5

Quality alert actions require action details. Examples of action details include recipients (for electronic mail notifications), arguments, and file names (for SQL and operating system scripts).

You can customize alert action details using output variables. Output variables represent quality results values (e.g. &ITEM represents "C12345") and are dynamically defined as action rules are evaluated. Output variables can be imbedded in alert action details and can thus be used in the following contexts:

Send an electronic mail notification: You can create dynamic distribution lists by including output variables in the recipient/distribution fields (List, To, Cc, and Bcc). If you send a text message, you can include quality results values in the message text.

Execute an operating system script: You can use output variables to dynamically pass quality results values as arguments to operating system scripts. If you enter operating system script text, you can include output variables in the text.

Execute a SQL script: You can use output variables to dynamically pass quality results values as arguments to SQL scripts. If you enter SQL script text, you can include output variables in the text.



Attention: SQL script actions are limited to Updates or Inserts. To Select a SQL string, use the *Assign a Value* action. See: Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34.

► **To select collection elements and action rules:**

1. Navigate to the Collection Elements window.

2. Select the Collection Element.
3. Choose the Actions button. The Quality Actions window appears.
4. In the Action Rules region, select the action rule.

► **To define electronic mail alerts:**

1. In the Actions this Rule Invokes region, select the *Send an electronic mail notification* action.
2. In the Action Details region, choose the Action Details button. The Actions:Send Electronic Mail window appears.
3. Optionally, select an Oracle Office public mail List or a distribution List. If you select an Oracle Office public mail list, you can enter the list name in any of the recipient (To, Cc, Bcc) fields. If you select a distribution list, the electronic mail IDs associated with the list are automatically displayed in the recipient fields. You cannot change these values.
4. Enter the electronic mail IDs of the "To" mail message recipients separated by spaces or commas. You can enter as many recipients as you want, up to 240 characters. You can dynamically distribute mail messages by including output variables in the recipient fields.

For example, you could define and use output variable for an Inspector ID collection plan element if Inspector IDs are equivalent to electronic mail IDs.

Note: If you are integrated with Oracle Office, all electronic mail IDs listed in the recipient (To, Cc, and Bcc) fields are validated before the alert is processed. If an invalid ID is entered in any of the recipient fields, the system returns the message to the *user who invoked the alert*. The user's electronic mail ID is determined from the value entered in the Email/Fax field of the Users window (from the System Administrator responsibility). If the value of the Email/Fax field is null, then the system checks to see whether the value for the Default User Mail Account option in the Oracle Alert Options window is set to Operating System Login ID or Application Username and sends the message to the appropriate user using one of these two IDs. The Electronic mail validation is disabled if you integrate with other electronic mail systems to send outgoing messages.

5. Enter the Subject, up to 240 characters, of the mail notification.
6. Optionally, enter the electronic mail IDs of the Cc, carbon copy, mail recipients.

7. Optionally, enter the electronic mail IDs of the *Bcc*, blind carbon copy, mail recipients.
8. Define your message source by selecting either File or Text.
File: Enter the File name including the full path name.
Text: Enter the message Text for the electronic message. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection plan element appear in the text of an electronic mail notification.
An example of a text message containing output variables is as follows:

Please test the contents of item number *&ITEM* received on *&TRANSACTION_DATE*.
9. Choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions: page 3 – 35.
10. Choose OK to Save your work.

► **To define concurrent request alerts:**

1. In the Actions this Rule Invokes region, select the *Launch a concurrent request* action.
2. In the Action Details region, choose the Action Details button. The Actions:Concurrent Program window appears.
3. Select the name of the Application that owns the concurrent program.
4. Select the concurrent Program Name.
5. Enter arguments, separated by spaces.
Arguments are dependent on the application and program name selected.
6. Select OK to save your work.

► **To define operating system script alerts:**

1. In the Actions this Rule Invokes region, select the *Execute an operating system script* action.
2. In the Action Details region, choose the Action Details button. The Actions:Operating System Script window appears.

3. Choose the source of the operating system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

File: You can enter the full path and file name of the operating system script source file rather than select an Application.

Text: You can enter the a text operating system script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an operating script.

An example of text operating system script containing output variables is as follows:

```
echo Please test the contents of lot number &LOT received on  
&TRANSACTION_DATE from supplier &SUPPLIER. The  
following defect was noted by receiving: &DEFECT_CODE
```

4. If the operating system script you want to execute is in a file located in an Application's base path *bin* directory, select the Application name.



Attention: If you enter an application name or *arguments* then choose to enter operating system script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the operating system script file.

You can dynamically pass arguments to your operating system script using output variables. If these output variables select character or date data, place single quotes around the output variable to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the actions. See: Associating Output Variables with Actions: page 3 – 35.
7. Choose OK to Save your work.

► **To define SQL script alerts:**

1. In the Actions this Rule Invokes region, select the *Execute a SQL script* action.
2. In the Action Details region, choose the Action Details button. The Actions:SQL Script window appears.

3. Choose the source of the SQL system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

File: You can enter the full path and file name of the SQL script source file rather than select an Application.

Text: You can enter the a text SQL script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an SQL script.

If your SQL script text includes output variables that select character or date data, place single quotes around your output variables so the system can correctly pass the data. If a single quote lies within your character string, the system adds a second single quote. For example, if your character string is resume', the system displays this as resume''.

An example of SQL script text containing output variables is as follows:

```
update wip_discrete_jobs
set attribute1 = &defect
where organization = &org.id
and wip_entity_id=
(select wip_entity_id
from wip_entities
where wip_entity_name=&job);
```

Note that in conformance with SQL standard formatting conventions, a semicolon (;) or a forward slash (/) must be placed at the end of each SQL statement.

4. If the SQL system script you want to execute is in a file located in an Application's base path *sql* directory, select the Application name.



Attention: If you enter an application name or *arguments* then choose to enter SQL script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the SQL script file.

You can dynamically pass arguments to your SQL script using output variables. If these output variables select character or date data, place single quotes around the output variables to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the actions. See: *Associating Output Variables with Actions*: page 3 – 35.
7. Choose OK to Save your work.

See Also

*SQL*Plus User's Guide and Reference*, Release 3.2

Associating Output Variables with Actions

Using output variables, you can incorporate quality results values into the action details of the following alert actions: *Send an electronic mail notification*, *Execute a SQL script*, and *Execute an operating system script*. They can also be used to incorporate quality results values into the action details of *Assign a Value* actions.



Additional Information: The above listed *Alert* actions can be defined for both collection elements and collection plan elements, but *Assign a Value* actions can only be defined for collection plan elements.

For example, you can use an output variable token (e.g. &DIAMETER) to represent numeric diameter values (e.g. 45 inches), so that these values can be included in the details (text) of a *Send an electronic mail notification* alert action.

Output variables token are defined by entering an ampersand (&) followed by a token name (for example, &ITEM_NUMBER) that represents a results value.

Prerequisites

- Include an output variable token as you define your Alert and Assign a Value Actions. See: Defining Collection Element Alert Actions: page 3 – 29, Defining Collection Plan Element Alert Actions: page 5 – 28 and Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34.

► To associate output variables with actions:

1. From the Actions:Send Electronic Mail, Actions: SQL Script, Actions:Operating System Script, or Assign a Value windows, choose the Variables button. The Output Variables window appears.

2. Enter the Token Name.

Do not enter the ampersand (&). For example if you included an &ITEM_NUMBER output variable token in the Message Text field of the *Actions: Send Electronic Mail window*, you would enter ITEM_NUMBER as the token name.

3. Select the collection element to associate with the token name.

You can associate token names with any collection element, including common collection plan elements. For example, you can

associate the Item collection element with the &ITEM_NUMBER token name as described above.

4. Choose OK to save your work.

Viewing Collection Elements

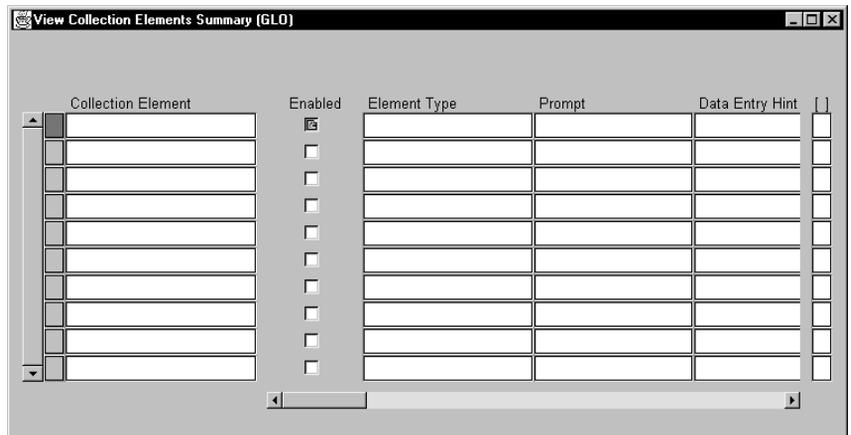
You can find and view collection elements. You can view collection element information in summary or detail. See: *Combination Block, Oracle Applications User's Guide*.

► **To view collection elements:**

1. Navigate to the View Collection Elements window. The Find Collection Elements window appears.

You can find specific collection elements. You can also query to find all collection elements of a particular collection Element Type or Datatype, as well as all collection elements that are Mandatory or Enabled. You can combine search criteria as required.

2. Enter any combination of search criteria and Choose the Find button. The results display in the View Collection Elements Summary window.



You can view collection elements in either the View Collection Elements window or the View Collection Elements Summary window. See: *Navigating Within a Combination Block, Oracle Applications User's Guide*.

► **To view collection element values:**

- From the View Collection Elements window, choose the Values button.

- ▶ **To view collection element specification limits:**
 - From the View Collection Elements window, choose the Spec Limits button.

- ▶ **To view collection element actions:**
 - From the View Collection Elements window, choose the Actions button.

See Also

Defining Collection Elements: page 3 – 12

Searching for Information, *Oracle Applications User's Guide*

Specifications

This chapter explains how to define and use specifications, including these topics:

- Overview: page 4 – 2
- Specifications: page 4 – 4
- Defining Specifications: page 4 – 7
- Defining Specification Elements: page 4 – 10

Overview

Specifications describe the requirements to which a product should conform. You can define specifications for the key characteristics of the products you produce or for materials you receive from suppliers.

You can attach illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video, and so on — to specifications. Attachments can be used to document processing instructions as well as inspection and disposition procedures.

The following specification for Global Computers is an example of a typical item specification:

Global Computers				
Item Specification				
Specification	Effective Date	Revision	Expiration Date	
506	5/5/94	5/12/94	12/2/95	
Item - 2601				
Item Name - Automotive Pinion				
Process Procedure				
Pinion stock is cut with splines and the shaft is turned to specification to fit sleeve.				
Test Condition				
Failure code information has been established according to a quality control plan and must be entered, process is in operation - lot #12, heat #3 and runs 20 pieces per hour, quality data is being collected manually. Pieces for rework must be marked with lot # and heat #.				
Characteristics	UOM	Target Value	Lower Spec Limit	Upper Spec Limit
Shaft Diameter	inches	3.14	3.135	3.145
Spline Cut Depth	inches	0.6	0.595	0.605
Shaft Cut Length	inches	22.5	22.495	22.505
Disposition of Non-compliant Product				
Disposition Code 1: Scrap when measurements are less than lower spec limit				
Disposition Code 2: Rework when measurements exceed upper spec limit				
Disposition Code 3: Production when measurements are within spec limits				
Approval				

Supervisor				

Manager				

See Also

Specifications: page 4 – 4

Defining Specifications: page 4 – 7

Defining Specification Elements: page 4 – 10

Specifications

Specifications define product requirements. You can use specifications to ensure that:

- items produced internally conform to internal requirements
- items shipped to customer conform to customer requirements
- items received from suppliers conform to supplier requirements

For each specification you define, Oracle Quality allows you to specify:

- a specification type — in this example, an item specification
- an item or item category
- a specification subtype
- a group of specification elements describing the item
- specification limits for each specification element, with up to three different specification ranges
- attachments for electronic documents, multimedia instructions, or images

Specification Types

Oracle Quality supports three types of specifications. The specification type selected — item, supplier, or customer — is determined by your business application. Item specifications can, for example, be used to define requirements for items without regard to the customer or supplier that may purchase or sell them. Conversely, customer and supplier specifications can be used to define the requirements for items sold to or purchased from specific customers or vendors respectively.

Specification Type	Business Example
Item Specification	For a given item, thickness must be 0.55 inches, plus or minus 0.002 inches; torque strength must be between 4.5 and 5.2; burn-in hours must be 48.
Supplier Specification	Carbon black received from supplier Acme Corporation must be tested to ensure its particle size does not exceed 0.0026 millimeters.
Customer Specification	Steel coils sold to customer ABC Corp. must always contain at least 1.5 percent molybdenum, 2.5 percent manganese, and have a tensile strength of at least 60.

Table 4 - 1 Specification Types

Specification Subtypes

Oracle Quality also supports specification subtypes. Specification subtypes are used to create more granular specifications. For example, if a different but similar supplier specification is required when a supplier ships from one location versus another, you can use specification subtypes to ensure that the correct specification is applied.

Specification Elements

Specification elements are the building blocks of specifications. Specification elements can be any data type but would most typically be numeric.

You create specification elements by adding collection elements to your specifications. You can also copy all specification elements from an existing specification. This is useful when similar items, suppliers, or customers require the same specification elements.

Specification Element Specification Limits

As you create specification elements, the specification limits, if any, are defaulted from the source. Specification limits include an acceptable target value as well as user-defined, reasonable, and specification range limits. The specification limits of a specification element can be updated as required.

Examples of specification elements their associated limits are as follows:

Specification Element	Specification Limit Target Value or Range
Thickness	User Defined Range: 0.55 +/- 0.002
Torque	Reasonable Range: 45 and <52
Burn-in time	Target Value: 48 hours

Table 4 - 2 Specification Elements and Limits

Uses of Specifications

Specifications and their specification elements make it possible to do the following:

- prohibit the collection of data that lies outside the reasonable range of a specification element. Input that falls outside the reasonable limit range is rejected.
- assist operators as they enter data. You can optionally display specification element specification limits as quality results are directly entered. You can choose to hide specification limits by setting the *QA:Blind Entry* profile option to Blind Entry On. Also, you can specify that the target value be automatically defaulted in when quality results are entered by setting the *QA:Default Specification Target* profile option to Yes. See: Profile Options: page 2 – 9.
- use specification limit values to define action rules and the actions they invoke. Action rules control when and how to react to the entry of off-specification quality results. For example, you can define an action rule that invokes an action, such as sending an electronic mail message, when a quality results value is outside the upper and lower range limits of a specification element.

See Also

Defining Collection Elements: page 3 – 12

Defining Collection Element Specification Limits: page 3 – 18

Defining Specifications: page 4 – 7

Defining Specification Elements: page 4 – 10

Defining Specifications

Specifications describe the requirements to which a product should conform. They are three specification types : item, supplier, and customer. Specification can be further defined using subtypes. By carefully defining your specification you can ensure that the correct specification is applied as you collect data.

Each type of specification can be based on either an *Item* or *Item Category*. If your specification is based on an *Item*, you must assign an item and, depending on the item, an item revision. If your specification is based on an *Item Category*, and you have specified a default category set using the QA:Quality Category Set profile option, you must assign a category.

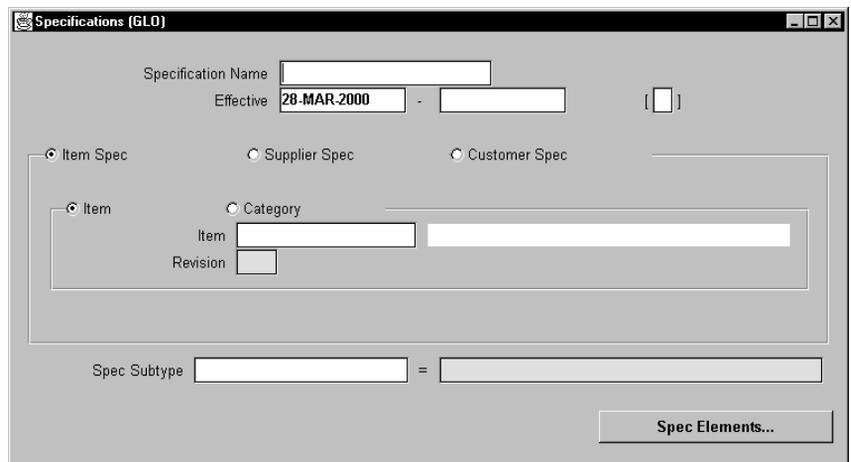
You can also attach illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video, and so on — to specifications. Attachments can be used to document processing instructions as well as inspection and disposition procedures. They can be viewed by operations personnel during quality data collection.

Prerequisites

- Define collection elements. See: Defining Collection Elements: page 3 – 12.

► To define specification header information:

1. Navigate to the Specifications window.



The screenshot shows the 'Specifications (GLO)' window. It contains the following fields and options:

- Specification Name: [Text Field]
- Effective: 20-MAR-2000 - [Text Field] []
- Item Spec (selected), Supplier Spec, Customer Spec (radio buttons)
- Item (selected), Category (radio buttons)
- Item: [Text Field] [Text Field]
- Revision: [Text Field]
- Spec Subtype: [Text Field] = [Text Field]
- Spec Elements... (button)

2. Enter the Specification Name.
3. Optionally, enter the from Effective date.
You cannot use the specification before this effective date. If you do not enter a From Effective Date, the specification is effective immediately.
4. Optionally, enter the to Effective date.
You cannot use the specification after this date. Once a specification expires, you cannot select this specification when entering quality result. You can, however, query quality results that were collected using it. If you do not enter a "to" effective date, the specification is valid indefinitely.

► **To define item specifications:**

1. Choose the Item Specification button.
2. Choose to base the specification on either an Item or an Item Category.
3. If the specification is based on item, select the Item and, optionally, the Revision.
4. If the specification is based on Item Category, select the Item Category.

If you are defining an item category specification, the system automatically defaults the category set defined by the *QA:Quality Category Set* profile option. It can be overwritten. See: *QA:Quality Category Set*: page 2 – 11.

5. Save your work.

► **To define supplier specifications:**

1. Choose the Supplier Specification radio button.
2. Choose to base the specification on either an Item or an Item Category.
3. If the specification is based on item, select the Item and, optionally, the Revision.
4. If the specification is based on Item Category, select the Item Category and enter the Supplier.

If you are defining an item category specification, the system automatically defaults the category set defined by the *QA:Quality Category Set* profile option. It can be overwritten.

5. Save your work.

► **To define customer specifications:**

1. Choose the Customer Specification button.
2. Choose to base the specification on either an Item or an Item Category.
3. If the specification is based on item, select the Item and, optionally, the Revision.
4. If the specification is based on Item Category, select the Item Category and enter the Customer.

If you are defining an item category specification, the system automatically defaults the category set defined by the *QA:Quality Category Set* profile option. It can be overwritten.

5. Save your work.

► **To define specification subtypes:**

1. Select a collection element.
2. Enter a value for the specification element.

► **To define specification elements:**

- See: Defining Specification Elements: page 4 – 10.

► **To attach files to specifications:**

- See: Attaching Files to Collection Plans, Specifications, and Results Lines: page B – 3.

See Also

Specification Types: page 4 – 4

Finding Specifications While Entering Quality Results: page 6 – 12

Overview of Item Categories, *Oracle Inventory User's Guide*

Defining Specification Elements

You can create specification elements by:

- adding individual collection elements to your specification
- copying specification elements from one or more "source" specifications
- copying specification elements from a source specification and adding individual collection elements



Attention: Copying specification elements from a source specification is useful when similar items, suppliers, or customers require the same specification elements.

Specifications elements that are copied from a source specification are added to the destination specification. If any of the specification elements from the source specification have already been created on the destination specification, these specification elements and the specification limits you have entered for them are not overwritten. You can delete specification elements that are copied if they are not required.

► **To select specifications:**

1. Navigate to the Specifications window.
2. Select the Specification Name.

► **To copy specification elements from an existing specification:**

1. From the Specification window, choose the Spec Elements button. The Specification Elements window appears.
2. Choose the Copy button. The Copy From Specification list appears.
3. Select the name of the source Specification.

You can copy specification elements from any specification even those that are not effective. You can copy specification elements from more than one specification. You can delete specification elements that are copied if they are not required.

Note: Oracle Quality permits you to copy specification elements across organizations.

When you copy specification elements from another specification, the specification limits (target value and range limits) are defaulted from the source. These values can be changed.

Caution: If you copy speciation elements that are disabled on the source specification, they are copied to the destination specification as disabled.

► **To add individual collection elements to specifications:**

- From the Specification Elements window, select the Collection Element from the Collection Elements list of values.

You can add any enabled user-defined or predefined reference information collection element.

When you add individual collection elements, the specification limits (target value and range limits) are defaulted from the source. These values can be changed.

► **To define specification elements:**

1. From the Specification Elements window, select the Collection Element (Specification Element).
2. Check the Enabled check box to enable the specification element.

Specification elements must be enabled before you they can be used in the data collection process.

Caution: You may need to enable specification elements that were copied from a source specification.

3. Enter the Target Value.

The target value represents the preferred value.



Attention: If your specification elements correspond to collection plan elements, you can choose to use specification element *target values* as the *default values* when you enter quality results. See: Default Value Assignments: page 6 – 5.

4. In the Spec Range alternative region, enter the lower and upper Specification Range limits.

The lower and upper specification range limits can represent engineering tolerances. The upper limits must exceed the lower limits.

5. In the User-Defined Range alternative region, enter the lower and upper User-Defined Range limits.

The lower and upper user-defined range limits can be used to represent process control limits. Your user-defined limits can be inside of, outside of, or overlapping your specification range limits. The upper limits must exceed the lower limits.

6. In the Reasonable Range alternative region, enter the upper and lower values Reasonable Range limits.

The lower and upper reasonable range limit ensures that you collect values that make sense. The upper limits must exceed the lower limits.

7. Save your work.

See Also

Defining Specifications: page 4 – 7

Defining Collection Element Specification Limits: page 3 – 18

Collection Plans

This chapter tells you everything you need to know about creating and using collection plans, including these topics:

- Overview: page 5 – 2
- Collection Plan Types: page 5 – 4
- Collection Plan and Import Results Database Views: page 5 – 6
- Collection Plan Elements: page 5 – 7
- Creating Collection Plans: page 5 – 13
- Defining Collection Plan Elements: page 5 – 17
- Defining Collection Plan Element Values: page 5 – 20
- Associating Specification Types with Collection Plans: page 5 – 22
- Defining Collection Plan Element Actions: page 5 – 25
- Defining Collection Plan Element Alert Actions: page 5 – 28
- User Defined Formulas: page 5 – 34
- Quality Collection Transactions: page 5 – 39
- Associating Transactions with Collection Plans: page 5 – 43
- Updating and Deleting Collection Plans: page 5 – 46
- Viewing Collection Plans: page 5 – 48

Overview

Collection plans determine what data to collect, where to collect it, when to collect it, and what action to take based on this data. Collection plans are similar to test or inspection plans. You can define an unlimited number of collection plans.

Purpose

You can create any number of collection plans to support your enterprise wide quality data collection and analysis need. You can create collection plans for your various departments, functional areas, or product lines. You can create collection plans for a specific purpose. For example, you can create collection plans to collect the following information:

- supplier defects in receiving and inspection
- shop floor defects resulting in scrapped assemblies
- equipment breakdowns
- quality characteristics, such as acidity and viscosity, for lots produced
- recording serial number test history
- root causes and resolutions for discrepant material
- repair codes and quantities for rework
- symptoms for field returns and DOA situations

Collection Plan Elements

Collection plan elements are the building blocks of collection plans and determine what data is to be collected. You can create collection plan elements by adding collection elements to collection plans. You can also create collection plan elements by copying all collection plan elements from a source collection plan. Collection plans can contain both predefined reference information collection elements as well as user-defined collection elements.

Examples:

- Predefined Reference Information: Item, department, or supplier
- User-Defined Characteristics: Symptom, cause, action, key measurements

Size and Complexity

You can add up to 100 user-defined collection elements to collection plans. In addition, common collection plan elements are automatically added as collection plans are created. Context elements may or may not be automatically added depending on other factors.

For example, a simple equipment maintenance collection plan might be used to collect only machine number and date maintained information. However, a complex equipment maintenance collection plan might include machine number, serial number, maintenance personnel, machine supplier, machine parts supplier, and a historical record of all routine and remedial maintenance.

Data Collection Methods

Collection plans can be invoked manually for direct results entry. They can also be invoked as you enter transactions in other Oracle Applications.

Attachments

You can attach illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video, and so on — to collection plans. Attachments can be used to document instructions and corrective action procedures. They can be viewed by operations personnel during quality data collection.

Collection Plan Types

You must assign a collection plan type to each collect plan you create. The five predefined collection plan types and their descriptions are as follows:

- WIP Inspections: In-process inspection plan
- Receiving Inspection: Goods receipt collection plan
- FGI Inspection: Inspection plans for finished goods
- Field Returns: Collection plans for field returns
- Service Requests: Collection plans for Service

You can define our own collection plan types as required. Collection plans can be sorted and grouped by type.

Collection plan types are for informational purposes only. A collection plan's type has no bearing on the types of transactions it can be associated with. For example, a collection plan with a WIP Inspection plan type can be associated with a Receiving Inspection collection transaction.

See Also

Defining Collection Plan Types: page 5 – 4

Creating Collection Plans: page 5 – 13

Defining Collection Plan Types

You must select a collection plan type for each collection plan you create. Collection plan types categorize collection plans, and are informational only. The five predefined plan types are WIP Inspection, Receiving Inspection, FGI Inspection, Field Returns, and Service Requests.

► **To create collection plan types:**

1. Navigate to the Collection Plan Type QuickCodes window.

2. Enter an alphanumeric Code that describes a collection plan type.
You cannot change the values in this field after saving them. To remove an obsolete QuickCode you can either disable the code, enter an end date, or change the meaning and description to match a replacement code. You can define a maximum of 250 QuickCodes for a single QuickCode type.
3. Enter the Meaning.
The meaning and description are displayed in the list of values for the enabled collection plan types.
4. Enter the Description.
5. Optionally, enter the From Effective Date.
You cannot use the collection plan type before this effective date. If you do not enter a From Effective Date, the collection plan type is valid immediately.
6. Optionally, enter the To Effective Date.
You cannot use the collection plan type after this date. Once a collection plan type expires, you cannot select this collection element type as you create collection plans, but you can query records that already use it. If you do not enter a To Effective Date, the collection plan type is valid indefinitely.
7. Check the Enable box to enable the collection plan type.
If you disable a collection plan type, you cannot select it as you define collection plans, but you can still query records that already use it. You can disable but not delete collection plan types.
8. Save your work.

See Also

Collection Plan Types: page 5 – 4

QuickCodes, *Oracle Applications User's Guide*

Creating Collection Plans: page 5 – 13

Collection Plan and Import Results Database Views

Database views are virtual tables. They allow you to access data without having to know where or how that data is stored.

In Oracle Quality, collection plan and import results database views are dynamically created and updated as you create and update collection plans. View names are derived from the collection plan name. Plan results views use the *Q_collection_plan_name_V* naming convention. Import results views use the *Q_collection_plan_name_IV* naming convention.

Collection Plan Views

Collection plan results database views can be used to create custom reports, charts, and views for your quality results. You can also use database views to access quality results with products such as Oracle Discover 2000 and Oracle Developer 2000, as well as other data inquiry products which can select data from an Oracle database.

To make custom reporting easier, foreign key information for entities in other Oracle Applications are automatically included when collection plan results database views are created. This feature makes it possible to dynamically access information in foreign database tables. For example, if your collection plans contains the Supplier (ID for the supplier) collection element, the supplier name can be resolved using the collection plan result database view.

Collection Import Views

Collection import result database view facilitate the insertion of data into the Collection Import Interface Table. Instead of inserting data directly into the import table, you insert data into a view of the table.

See Also

Table and View Definitions, *Oracle Quality Technical Reference Manual*
Collection Import, *Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual*

Collection Plan Elements

Collection plan elements are collection elements that have been added to collection plans. See: Collection Elements: page 3 – 7 and Defining Collection Plan Elements: page 5 – 17.

Common Collection Plan Elements

In addition to the collection elements that you add to collection plans, there is a group of 'common' elements that are automatically added to collection plans as they are created. The following common collection plan elements are predefined as mandatory, enabled, and displayed:

- Organization
- Created By
- Collection Number
- Collection Plan Name
- Collection Plan Type
- Last Update Date
- Last Updated By
- Entry Date

These 'common' collection elements can be used to define output variables and when reporting quality results.

Context Element Dependencies

Some context collection elements are dependent on others. If you add them to collection plans before you add the context elements they depend on, a warning message is displayed, but you are allowed to continue.

For example, if you add the Lot Number collection element to a collection plan, before adding the Item collection element, you are warned that you should add Item to the collection plan before adding Lot Number. The following table lists all context dependencies.

Context Element...	..Depends On (Add first)
From/To Operation Sequence	Job Name or Production Line
From/To Intraoperation Step	From/To Operation Sequence
Production Line	Item (Repetitive)
Subinventory	Item
Locator	Subinventory
Serial Number	Item
Lot Number	Item
Revision	Item (under revision control)
Unit of Measure	Item
ComponentSubinventory	Component Item
Component Locator	ComponentSubinventory
Component Revision	Component Item
Component Lot Number	Component Item
Component Serial Number	Component Item
Component Unit of Measure	Component Item
PO Line Number	PO Number
PO Release Number	PO Number
Project	Task
SO Line Number	Sales Order Number

Table 5 - 1 Collection Element Dependencies

You can choose to save a collection plan that you have added a dependent collection element (Lot Number) to even if you do not add the collection element that it is depends on (Item). However, when you enter results using this collection plan, the field for the dependent collection element (Lot Number) is disabled and you are prohibited from entering results.

It is possible to sequence collection plan elements so that a dependent collection element (Lot Number) precedes the collection element it depends on (Item). In this case, as you enter results, the Lot Number field remains disabled until Item results are entered.

See Also

Collection Elements: page 3 – 7

Collection Plans for Transactional Data Collection

You can create collection plans that can be used to collect quality data you enter transactions in other applications. In general, these collection plans have only one requirement — that they be associated with the a transaction in another product. However, collection plans that are used to inspect received items in purchasing have additional requirements.

Additional information on creating collection plans to be used with other products can be found in the following sections:

- Collection Plans for Move Transaction: page 7 – 2
- Collection Plans for Receiving Tranfers and Deliveries: page 0 – 5
- Collection Plans for Service Requests: page 2 – 9

See Also

Receiving and Inspection Collection Plans: page 0 – 5

Creating Collection Plans from Templates

You can create collection plans by copying the components of one to another. The collection plan you copy from acts as a template for the new collection plan. You can use collection plans created in one organization as a template to create new collection plans in another organization, as well as in the current organization.

When you create a collection plan using a template, all of the following components are automatically copied from the 'source' to the 'destination' collection plan:

- collection plan elements and, if defined, their values
- collection plan element actions, action triggers, action details, and, if defined, output variables for alert actions

Collection transactions and collection triggers are not copied. Also, the specification type for the source plan is not defaulted to the destination plan.

When you create collection plans from templates, the transactions associated with the source plan are not copied. Therefore when you create an Inspection collection plan, you must manually associate the appropriate collection transaction with the new plan. You must also enable this collection transaction. When you save your work the

system checks to make sure that all required collection plan elements, actions, and values exist. If they do not, you are prompted to fill in the missing fields. You can optionally choose to have the system automatically fill in the missing components.

You can use both pre-seeded and user-defined collection plans as templates. The following table describes the four pre-seeded collection plans that are available, the elements in each plan and the actions associated with each element. (Note: A blank row under Associated Actions indicates that the template does not define actions defined for that particular element):

Template Name	Elements	Associated Actions (if any)
PO Inspection	Inspection Result Action	Accept the Shipment Reject the Shipment
	Quantity	Assign a value to a collection element
	UOM Name	
	Transaction Date	
	Comments	
	PO Quality Code	
	Inspection Reason Code	
	Inspection Supplier Lot Number	
	Item	
WIP Move	Department	
	Quantity	
	Item	
	UOM	
	Job	
	To Op Seq Number	
	From Op Seq Number	
	To Intraoperation Step	
	From Intraoperation Step	
	Operation Code	
	Defect Code	
	Quantity Defective	
	To Department	
	To Operation Code	

Table 5 – 2 (Page 1 of 2)

Template Name	Elements	Associated Actions (if any)
Service Request	Item	
	Customer	
	Resolution Code	
	Problem Code	
	Urgency	
	Severity	
	Owner	
	Expected Resolution Date	
	Actual Resolution Date	
PO Receiving	Transaction Date	
	Quantity	
	Comments	
	Item	
	Supplier	
	PO Number	
	Defect Code	
	Quantity Defective	
	UOM Name	

Table 5 – 2 (Page 2 of 2)

You can delete those collection plan elements that are copied but are not required. You can also add user-defined and additional context elements.

See: Inspection Collection Plans: page 0 – 4

► **To create a collection plan from a template:**

1. Navigate to the Collection Plans window.



Attention: To assist you as you create collection plans, you can choose the Summary/Detail option from the Go Menu to view existing collection plans in summary format. See: Combination Block, *Oracle Applications User's Guide* and Navigating Within a Combination Block, *Oracle Applications User's Guide*.

2. Enter the Collection Plan name.

Collection plan names can include alphanumeric character and spaces. The only special character that can be included in a collection plan name is the underscore (_).

3. Optionally, enter the from Effective date.

You cannot use the collection plan before this effective date. If you do not enter a from Effective date, the collection plan is effective immediately.

4. Optionally, enter the to Effective date.

You cannot use the collection plan after this date. Once a collection plan expires, you cannot enter quality results using this plan, but you can query records that already use it. If you do not enter a to Effective date, the collection plan is valid indefinitely.

5. Select the collection Plan Type. See: Collection Plan Types: page 5 – 4.
6. Choose the Copy Elements button. The Copy From Plan list appears.
7. Select the name of the source or template Collection Plan.

You can select any collection plan, even those that are not effective. You can optionally copy collection elements from more than one collection plan.

When you copy collection elements from another collection plan, their sequence numbers, prompts, parameters (mandatory, enabled, displayed), and default values are defaulted from the source. These values can be changed.

Caution: If you copy collection elements that are disabled on the source collection plan, they are copied to the destination collection plan as disabled.

8. Choose OK.
9. Customize the new collection plan as required.

You can delete collection elements that are copied if they are not required. If any of the collection plan elements that from the 'source' collection plan have already been added to the destination collection plan, those on the destination collection plan are not overwritten.

Creating Collection Plans

You can create a collection plan that can be used as the default when directly entering, viewing, and updating quality results and when viewing lot quality results, serial quality results, and action log entries. See: QA:Default Collection Plan: page 2 – 9.

Collection elements are the building blocks of collection plans. You can create collection plan elements by adding individual collection elements to your collection plan. You can also create collection plans by copying one to another. You can define lists of values for each collection plan element that you create.

Note: In addition to the collection elements that you explicitly add to a collection plan, there are a number of common collection plan elements that are added to every collection plan that you create. See: Common Collection Plan Elements: page 5 – 7.

You can meet your specific data collection needs by:

- associating specification types — item, customer, or supplier — with collection plans
- specifying which transactions in other Oracle Manufacturing products invoke a collection plan and thus quality data collection
- defining values and lists of acceptable values for collection plan elements
- defining action rules and when those action rules are to be invoked
- attaching illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video clips, and so on — to collection plans



Attention: Collect plan results and import results database views are automatically created and updated when you create or update collection plans. However, if you are importing quality results data for collection plans created prior to the installation of Oracle Quality Release 10.6.0.14SC — when Collection Import was introduced — you must create an import results database view before attempting to import results. See: Collection Import, *Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual*, Updating and Deleting Collection Plans: page 5 – 46 ,and Collection Plan and Import Results Views: page 5 – 6.



Attention: If you plan to import updated quality results for collection plans created prior to Release 11 — when the functionality to update information in the Quality data repository was introduced — you must re-create database views for these collection plans. See: Collection Import, *Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual*, Updating and Deleting Collection Plans: page 5 – 46 ,and Collection Plan and Import Results Views: page 5 – 6.

Prerequisites

- Define collection elements. See: Defining Collection Elements: page 3 – 12.

► To create collection plans:

1. Navigate to the Collection Plans window.

Name	Seq	Prompt	Mandatory	Enabled	Displaye []
			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Attention: To assist you as you create collection plans, you can choose the Summary/Detail option from the Go Menu to view existing collection plans in summary format. See: Combination Block, *Oracle Applications User's Guide* and Navigating Within a Combination Block, *Oracle Applications User's Guide*.

2. Enter the Collection Plan name.

Collection plan names can include alphanumeric character and spaces. The only special character that can be included in a collection plan name is the underscore (_).

3. Optionally, enter the from Effective date.

You cannot use the collection plan before this effective date. If you do not enter a from Effective date, the collection plan is effective immediately.

4. Optionally, enter the to Effective date.

You cannot use the collection plan after this date. Once a collection plan expires, you cannot enter quality results using this plan, but you can query records that already use it. If you do not enter a to Effective date, the collection plan is valid indefinitely.

5. Select the collection Plan Type. See: Collection Plan Types: page 5 – 4.

▶ **To copy collection elements and actions from a template plan:**

- See: Creating Collection Plans from a Template: page 5 – 10.

▶ **To define collection plan elements:**

- See: Defining Collection Plan Elements: page 5 – 17.

▶ **To copy collection element values to collection plans:**

- See: Defining Collection Plan Element Values: page 5 – 20.

▶ **To define quality actions for collection plan elements:**

- See: Defining Collection Plan Element Actions: page 5 – 25.

▶ **To associate specification types with collection plans:**

- See: Associating Specification Types with Collection Plans: page 5 – 22.

▶ **To associate collection transactions with collection plans:**

- See: Associating Transactions with Collection Plans: page 5 – 43.

▶ **To attach files to collection plans:**

- See: Attaching Files to Collection Plans, Specifications, and Results Lines: page B – 3.

Defining Collection Plan Elements

You can add and define collection plan elements one-by-one. You can also define or redefine collection plan elements that have been copied from another collection plan.

Prerequisites

- Create a collection plan. See: Creating Collection Plans: page 5 – 13.

► **To add and/or define collection plan elements:**

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. In the Quality Collection Elements region, select Name of the collection element.

If you are adding a collection element, you can select any enabled user-defined or predefined collection element. You must add at least one enabled and mandatory collection element to a collection plan. You can add up to 100 user-defined collection elements.

Note: Two predefined collection elements (Project Number and Task Number) support Project Manufacturing by allowing you to define projects and tasks.

When you add collection elements, the prompt, parameters (mandatory and displayed), and default values are defaulted from the source collection element. These values can be changed.

Some reference information collection elements are dependent on others. If you add them to collection plans before you add the collection elements they are dependent on, a warning message is displayed, but you are allowed to continue. If you create a collection plan that has a dependent collection element, but does not have the collection element that it is depends on, the field for the dependent collection element (Lot Number) is disabled and you are prohibited from entering results for it. See: Context Element Dependencies: page 5 – 7.

Some reference information collection elements are mutually exclusive. For example, you should not add the Job Name and the Production Line collection elements to the same collection plan.



Attention: Adding collection elements does not automatically copy the lists of the values or the actions that are defined for that collection element.

4. Enter the Sequence number.

The sequence number defines the columnar order of collection elements when entering quality results. You can change the sequence number as required.

5. Enter text for the data entry Prompt.

The prompt defaults from the collection element but can be overridden. The prompt, which is displayed as you enter quality results, prompts the user for the required information. The prompt is also used as column headings for reports you create using the Quality Results ReportWriter.



Attention: If your prompt begins with a hyphen (-), the hyphen and the text that follows it are suppressed as you enter, view, and update quality results.

6. Check the Mandatory check box to indicate that a value must always be entered for this collection plan element.
7. Check the Enabled check box to enable the collection plan element.

Collection plan elements must be enabled before you can use them in the data collection process.

Caution: You may need to enable collection plan elements that were copied from a source collection plan.

8. Uncheck the Display check box to suppress being prompted to enter results for the collection plan element.

Display functionality is only applicable when defining collection plan elements that represent context data. Data for these collection plan elements is collected as you transact and collect quality results regardless of whether they are defined as displayed. See: Non-Displayed Collection Plan Elements: page 6 – 5.

Collection plan elements that defined as non-displayed on collection plans used for direct data collection are not suppressed.

9. Enter the Default Value.

The value you enter appears as the default when you enter quality results. See: Default Value Assignment Rules: page 6 – 5.

10. Save your work.

See Also

Defining Collection Elements: page 3 – 12

Common Collection Plan Elements: page 5 – 7

Defining Collection Plan Element Values

Values and lists of values are used to validate data as it is collected. You can define collection plan element values by copying one or all values from a collection element to a collection plan element. You can change and delete as required the values that you copy. You can also add and define collection plan element values independently.

► **To copy individual collection element values to collection plan elements:**

1. Navigate to the Collection Plans window.

2. Select the Collection Plan.

You can select any collection plan including collection plans that are not currently effective.

3. From the Quality Collection Elements region, select the collection element.

You can define values and lists of values for all user-defined collection elements as well as predefined attribute collection elements. You cannot define values for reference information collection elements and common collection plan elements. See: Reference Information Collection Elements; page 3 – 7.

4. Choose the Values button. The Values window appears.

5. In the Values window, select the Short Code for the collection element value.

6. Save your work.

► **To copy all collection element values to a collection plan element:**

1. From the Quality Collection Elements region of the Collections Plan window, select the collection element.

2. Choose the Values button. The Values window appears.

3. In the Values window, choose the Defaults button. The Copy Values window appears.

4. Choose the Copy button to copy the entire list of values from the collection element.

5. Save your work.

► **To define plan collection element values:**

1. From the Quality Collection Elements region of the Collections Plan window, select the collection element.
2. Choose the Values button. The Values window appears.
3. In the Values window, enter the Short Code.

The short code you enter must match the data type of the collection element. For example, if you have defined a Diameter collection element that is numeric, you could enter a short code such as 45.67. Similarly, if you have defined a Nonconformity collection element that is character, you could enter an abbreviated short code such as *lead* to indicate a *broken lead* nonconformity. An abbreviation of this sort might be necessary because short code values can only be up to 11 characters long.

4. Enter the Description.

The Description provides additional information about the short code. In the above example, the short code *lead* might have a Description of *broken lead*.

5. Save your work.

► **To delete collection plan element values:**

- From the Values window, select the value's short code. Choose *Delete Record* from the Edit Menu.

You can delete collection plan element values even if those values have been used in the data collection process.

Associating Specification Types with Collection Plans

You can associate any of the three specification types with a collection plans. You can also choose not to associate a collection plan with any specification type at all. Associating a specification type with a collection plan speeds the specification selection process, both when entering quality results directly and when collecting data transactionally.

Direct Data Entry

For example, if you enter quality results directly, using a collection plan that is associated with a Supplier Specification type, the system prompts you to find and select a Supplier Specification after you select the collection plan.

Transactional Data Collection

If you are collecting results as you enter Oracle Work in Process move transactions and the collection plan that is invoked is associated with a specification type, Oracle Quality automatically searches for a specification for the item being transacted. If none exists, Oracle Quality searches for a specification for the category of the item. See: Specifications for Transactional Data Collection: page 6 – 21.

Using specifications makes it possible for you to determine if the result values collected are within the specification limits established by the specification elements of the specification.



Attention: Most specifications are associated with items. However, it is possible to define a specification that does not have an item specification element and select it as you enter quality results.

► To associate specification types with collection plans:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. Choose the Specifications button. The Specification Types window appears.
4. Choose the default specification type, *Item Specification*, *Supplier Specification*, or *Customer Specification* or choose *No specification used*. See: Specifications: page 4 – 4.

The specification type you associate with a collection plan can be overridden when you enter quality results. For example, you can

associate a Supplier Specification type with a collection plan, but select an Item Specification as you enter quality results. If you choose not to associate a specification type with the collection plan, by choosing *No Specification Used*, you are not prompted to find a specification as you enter quality results.

5. Choose OK to save your work.

See Also

Overview of Specifications: page 4 – 2

Finding Specifications While Entering Quality Results Directly: page 6 – 12

Finding Specifications During Transactional Data Collection: page 6 – 22

Defining Specification Limits for Collection Elements: page 3 – 18

Dependencies Between Context Elements and Actions

Some actions are independent of the collection plan elements they are associated with. For example, you can define message actions, such as "Display a message to the operator," or alert actions, such as "Send an electronic mail notification," for any collection plan element.

However, dependencies do exist between collection plan elements that are context elements and actions. For example, you can only define an "Assign a shop floor status to the intraoperation step" action, if you have added the 'To Operation Sequence' and 'To Intraoperation Step' context elements to your collection plan.

The following table lists these dependencies:

Action To Be Invoked	Context Element(s) Required for Action
Place the job on hold	Job
Assign a shop floor status to the intraoperation step	To operation sequence To intraoperation step
Hold all schedules building this assembly on this production line	Production Line and Item
Assign an ASL status	Supplier
Accept the shipment	Inspection Result
Reject the shipment	Inspection Result
Place the supplier on hold	Supplier
Place the PO on hold	Purchase order

Table 5 – 3 Action and Collection Plan Element Dependencies

See Also

Quality Actions: page 3 – 20

Defining Collection Plan Element Actions

You can define several action rules for each collection element that you add to a collection plan.

You can also copy a collection element's default action rules and related actions to a collection plan element. For example, if you define the action rule and related action *when "Severity equals most severe, place the job on hold"* for the *Severity* collection element, you can copy this action rule and related action to any *Severity* collection plan element. You can update copied action rules and related actions as required.

Prerequisites

- Create a collection plan. See: *Creating Collection Plans*: page 5 – 13.

► **To copy all action rules and actions from collection elements to collection plan elements:**

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. From the Quality Collection Elements region, select a collection element.
4. Choose the Actions button.
5. From the Quality Actions window, choose the Defaults button. The Copy Actions window appears.
6. Choose the Copy button to copy all action rules and actions.

► **To define collection plan element action rules:**

1. From the Quality Collection Elements region of the Collections Plans window, select the collection element.
You can select any enabled collection element.
2. Choose the Actions button. The Quality Actions window appears.
3. In the Action Rules region of the Quality Actions window, enter the Sequence. See: *Action Rule Sequencing*: page 3 – 25.

The Sequence number establishes the order in which action rules are evaluated as data is collected. The sequence number can be from 0 to 99999.

4. Select the Condition that must be met to invoke the action. See: Query Operators: page C – 4.
5. Choose either the Value or Spec Limit to specify the evaluation method.

Value: If you choose Value, as quality data is collected the action rule is evaluated using the results value and the value or values entered here. If you have defined values for the collection plan element, you must choose a value from this list. If you have not defined values for the collection plan element, you can enter any value.

Spec Limit: If you choose Spec Limit, as quality data is collected the action rule is evaluated using the quality results value and either the specification limit target value, the upper or lower user-defined range limits, or the upper or lower specification range limits.

Spec Limit can be used to define action rules that evaluate numeric results.



Attention: You are automatically precluded from collecting data that is not within the user-defined range limits. Therefore these range limits cannot be used to define action rules.

6. If the Condition selected requires a range of values, enter both the From and To value. If the Condition selected requires only a single value, enter only the From value.



Attention: Some conditions (e.g. Is Entered and Is Empty) do not require values.

► **To associate actions with action rules:**

1. From the Quality Actions window, select an Action Rule in the Action Rules region.
2. Select an Action in the Actions this Rule Invokes region. See: Quality Actions: page 3 – 20.

You can associate one or more actions with each action rule. However, if the action selected requires action details, you must define action details before selecting another action.

Some dependencies exist between collection plan elements and actions. For example, you can only define the "Assign a shop floor status to the intraoperation step" action, if To Operation Sequence and To Intraoperation Step collection elements have been added to the collection plan . See: Dependencies Between Context Elements and Actions: page 5 – 24.

► **To define action details:**

- If the action requires a message, enter the message in the Action Details region. Messages can be up to 256 characters in length. See: Message Actions: page 3 – 20.

If the action requires a status code, enter it in the Action Details region. See: Application Specific Actions: page 3 – 21.

If the action is an alert action, see: Defining Collection Plan Element Alert Actions: page 5 – 28.

If the Assign a Value to a collection element action is selected, see: Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34.

3. Save your work.

Defining Collection Plan Element Alert Actions

There are four alert actions available in Oracle Quality:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*
- *Launch a concurrent request*

Oracle Quality alert actions are similar but distinctly different from the event alerts you can define using Oracle Alerts. They share the same underlying database tables and require some of the same setups. See: Overview of Oracle Alert, *Oracle Alert User's Guide* and Alert Setup for Quality: page 2 – 5.

Quality alert actions require action details. Examples of action details include recipients (for electronic mail notifications), arguments, and file names (for SQL and operating system scripts).

You can customize alert action details using output variables. Output variables represent quality results values (e.g. &ITEM represents "C12345") and are dynamically defined as action rules are evaluated. Output variables can be imbedded in alert action details and can thus be used in the following contexts:

Send an electronic mail notification: You can create dynamic distribution lists by including output variables in the recipient/distribution fields (List, To, Cc, and Bcc). If you send a text message, you can include quality results values in the message text.

Execute an operating system script: You can use output variables to dynamically pass quality results values as arguments to operating system scripts. If you enter operating system script text, you can include output variables in the text.

Execute a SQL script: You can use output variables to dynamically pass quality results values as arguments to SQL scripts. If you enter SQL script text, you can include output variables in the text.



Attention: SQL script actions are limited to Updates or Inserts. To Select a SQL string, use the *Assign a Value* action. See: Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34.

Prerequisites

- ❑ Define quality actions for collection plan elements. See: Defining Collection Plan Element Actions: page 5 – 25.

► To select collection elements and action rules:

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.
3. Select the Collection Element.
4. Choose the Actions button. The Quality Actions window appears.
5. In the Action Rules region, select the action rule.

► To define electronic mail alerts:

1. In the Actions this Rule Invokes region, select the *Send an electronic mail notification* action.
2. In the Action Details region, choose the Action Details button. The Actions:Send Electronic Mail window appears.
3. Optionally, select an Oracle Office public mail List or a distribution List. If you select an Oracle office public mail list, you can enter the list name in any of the recipient (To, Cc, Bcc) fields. If you select a distribution list, the electronic mail IDs associated with the list are automatically displayed in the recipient fields. You cannot change these values.
4. Enter the electronic mail IDs of the "To" mail message recipients separated by spaces or commas. You can enter as many recipients as you want, up to 240 characters. You can dynamically distribute mail messages by including output variables in the recipient fields.

For example, you could define and use output variable for an Inspector ID collection plan element if Inspector IDs are equivalent to electronic mail IDs.

Note: If you are integrated with Oracle Office, all electronic mail IDs listed in the recipient (To, Cc, and Bcc) fields are validated before the alert is processed. If an invalid ID is entered in any of the recipient fields, the system returns the message to the *user who invoked the alert*. The user's electronic mail ID is determined from the value entered in the Email/Fax field of the Users window (from the System Administrator responsibility). If the value of the Email/Fax field is null, then the system checks to see whether the value for the Default User Mail Account option in the Oracle Alert

Options window is set to Operating System Login ID or Application Username and sends the message to the appropriate user using one of these two IDs. The Electronic mail validation is disabled if you integrate with other electronic mail systems to send outgoing messages.

5. Enter the Subject, up to 240 characters, of the mail notification.
6. Optionally, enter the electronic mail IDs of the *Cc*, carbon copy, mail recipients.
7. Optionally, enter the electronic mail IDs of the *Bcc*, blind carbon copy, mail recipients.
8. Define your message source by selecting either File or Text.

File: Enter the File name including the full path name.

Text: Enter the message Text for the electronic message. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection plan element appear in the text of an electronic mail notification.

An example of a text message containing output variables is as follows:

Please test the contents of item number *&ITEM* received on *&TRANSACTION_DATE*.

9. Choose the Variables button to associate output variables with the action. See: *Associating Output Variables with Actions*: page 3 – 35.
10. Choose OK to Save your work.

► **To define concurrent request alerts:**

1. In the Actions this Rule Invokes region, select the *Launch a concurrent request* action.
2. In the Action Details region, choose the Action Details button. The Actions:Concurrent Program window appears.
3. Select the name of the Application that owns the concurrent program.
4. Select the concurrent Program Name.
5. Enter arguments, separated by spaces.

Arguments are dependent on the application and program name selected.

6. Select OK to save your work.

► **To define operating system script alerts:**

1. In the Actions this Rule Invokes region, select the *Execute an operating system script* action.
2. In the Action Details region, choose the Action Details button. The Actions:Operating System Script window appears.
3. Choose the source of the operating system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

File: You can enter the full path and file name of the operating system script source file rather than select an Application.

Text: You can enter the a text operating system script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an operating script.

An example of text operating system script containing output variables is as follows:

```
echo Please test the contents of lot number &LOT received on  
&TRANSACTION_DATE from supplier &SUPPLIER. The  
following defect was noted by receiving: &DEFECT_CODE
```

4. If the operating system script you want to execute is in a file located in an Application's base path *bin* directory, select the Application name.



Attention: If you enter an application name or *arguments* then choose to enter operating system script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the operating system script file.

You can dynamically pass arguments to your operating system script using output variables. If these output variables select character or date data, place single quotes around the output variable to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions: page 3 – 35.
7. Choose OK to Save your work.

► **To define SQL script alerts:**

1. In the Actions this Rule Invokes region, select the *Execute a SQL script* action.
2. In the Action Details region, choose the Action Details button. The Actions:SQL Script window appears.
3. Choose the source of the SQL system script by selecting either File or Text. You cannot select an application or enter arguments if you choose to enter a text script.

File: You can enter the full path and file name of the SQL script source file rather than select an Application.

Text: You can enter the a text SQL script. You can include output variables in the text. For example, you can specify that the quality results values associated with the Item collection element appear in the text of an SQL script.

If your SQL script text includes output variables that select character or date data, place single quotes around your output variables so the system can correctly pass the data. If a single quote lies within your character string, the system adds a second single quote. For example, if your character string is resume', the system displays this as resume''.

An example of SQL script text containing output variables is as follows:

```
update my_lot  
set status = 3  
where lot_name = '&LOT';
```

Note that in conformance with SQL standard formatting conventions, a semicolon (;) or a forward slash (/) must be placed at the end of each SQL statement.

4. If the SQL system script you want to execute is in a file located in an Application's base path *sql* directory, select the Application name.



Attention: If you enter an application name or *arguments* then choose to enter SQL script Text, values entered in these fields are erased.

5. Optionally, enter arguments, separated by spaces, to pass to the SQL script file.

You can dynamically pass arguments to your SQL script using output variables. If these output variables select character or date

data, place single quotes around the output variables to correctly pass the argument.

6. Optionally, choose the Variables button to associate output variables with the action. See: Associating Output Variables with Actions: page 3 – 35.
7. Choose OK to Save your work.

User-Defined Formula

User-defined formulas make it possible assign or derive quality results values. Values can be derived from user-defined formulas that are simple arithmetic expressions which use simple operators (+, -, *, /), specified values (3, 2, 4000, 'FAIL', 50), complex operators (square root, sin, cosine and so on), functions (SORT), and/or output variable tokens (&DEFECTIVE).

For example:

```
3
3+2
'A'
(4000 + 34500)/50
'FAIL'
&DEFECTIVE/&QTY
&D + SQRT(&DISCREPANCY)/SQRT(&E)
ABS(&SEVERITY) + &BAD
'Defect ' || &DEFECTCODE
```

Values can also be derived from user-defined SQL scripts which read values from Oracle database tables.

For example:

```
select assigned_to from customer_reps
where customer_name = &CUSTOMER
and organization_id=:parameter.org_id
```



Attention: To constrain the SQL Statement to the current organization, you can use the variable ':parameter.org_id' for the current organization id. To constrain the SQL Statement to the current user's id, you can use the variable ':parameter.user_id' for the current user's id.

See Also

Defining Actions that Assign A Value: User-Defined Formulas

You can dynamically assign values to collection plan elements as you enter quality results. Values are assigned when action rules associated

with *Assign a Value* actions are evaluated and found to be true. When you assign a value to a collection plan element, its current value is overwritten. See: *User-Defined Formulas: page 5 – 34* and *Business Examples: User-Defined Formulas: page 5 – 36*

Failure Conditions

Formulas and SQL scripts may fail to process if one or more of the following conditions exist:

- The value represented by an output variable token is null. For example, if the results value represented by the token `&QTY` is null in the formula `&DEFECTIVE/&QTY`.
- More than one value is returned by a SQL statement. For example if the SQL statement *select assigned_to from customer_reps where customer_name = &CUSTOMER* returns three values.
- The SQL statement returns no rows.
- An invalid SQL statement is specified.

Note: This is not an exhaustive list.

Prerequisites

- Define quality actions for collection plan elements. See: *Defining Collection Plan Element Actions: page 5 – 25*.

► To define a user-defined formula:

1. From the Quality Actions window, select an Action Rule in the Action Rules region.
2. In the Actions this Rule Invokes region of the Quality Actions window, select the *Assign a value* action.
3. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
4. Select a collection plan element to assign the value to.
You can select any collection plan element.
5. Choose the appropriate check box to define the value using either a Formula or an SQL script. The default is formula.

Formula: Use when an arithmetic expression is required.

Arithmetic express can include simple operators (+, -, *, /), specific values (3, 2, 4000, 34500, 50), complex operators (square root, sin, cosine and so on), functions (SQRT), and/or output variables

tokens (&DEFECTIVE) that represent quality results values. Output variables correspond to collection plan elements (e.g. &QTY represents the Quantity Defective collection plan element). As quality data is collected, quality results values are passed to your formulas via the output variables you have defined.

An example of a formula is as follows:

$3 + \&QTY$

In this example the output variable &QTY corresponds to the Quantity Defective collection plan element.

SQL Text: Use when data must be read from database tables. You can include specific values and output variables tokens (&PARTICLE_SIZE) in your SQL text as well.

An example of *SQL Text* is as follows:

```
select kit_grade_name
from lot_grades
where &PARTICLE_SIZE between low_size and high_size
```

Note that in the case of user-defined formulas, it is not necessary to place a semicolon (;) or a forward slash (/) at the end of each SQL statement.

6. If you have included output variable tokens in your Formula or SQL Text, choose the Variables button to associate these output variable tokens with the action. See: Associating Output Variables with Actions: page 3 – 35.
7. Choose OK to Save your work.

Business Examples: User-Defined Formulas

The following two examples explain how to create user-defined formulas that 1) calculate process yield based upon total quantity and quantity defective and 2) calculate line thickness deviation in a circuit board based upon the actual and optimum specified thicknesses.

Calculating Percent Yield Example

To calculate the percent yield from a process, define the following collection plan elements:

- Seq 40: Defect Quantity
- Seq 50: Total Quantity

- Seq 60: Yield

If the collection plan elements are sequenced in the order shown above or a similar order (e.g. 60,70,80), define the Assign a Value action per the following:

From the Collection Plans window, select the 'Total Quantity' collection plan element then choose the Actions button. The Quality Actions window appears.

In the Action Rules region, select the 'is entered' condition. This condition ensures that Oracle Quality calculates the Yield after the user enters the Defect Quantity and the Total Quantity.

In the Actions this Rule Invokes region, select the *Assign a value* action.

In the Action Details region, choose the Action Details button. The Assign a Value window appears.

Select the 'Yield' collection plan element to Assign the value To.

Select the option to assign a value using a formula (this is the default selection).

Enter the following formula:

$$(1 - \&DEFECTQTY/\&TOTAL)*100$$

Choose the Variables button. The Output Variables window appears.

Enter the token name 'DEFECTQTY' for the Defect Quantity collection plan element. Also enter the token name 'TOTAL' for the Total Quantity collection plan element.

Choose OK to exit both the Output Variables and Quality Actions windows.

Save your work.

Calculating Deviation in Line Thickness Example

To determine the deviation of the line thickness in a circuit board that is over or under a specified specification, define the following collection plan elements

- Seq 40: Line thickness
- Seq 50: Specified Thickness
- Seq 60: Deviation

If the collection plan elements are sequenced in the order shown above or a similar order (e.g. 60, 70, 80), define the Assign a Value action per the following:

From the Collection Plans window, select the 'Specified Thickness' collection plan element then choose the Actions button. Then Quality Actions window appears.

In the Action Rules region, select the 'is entered' condition. This condition ensures that Oracle Quality calculates the Deviation after the user enters the Line Thickness and Specified Thickness.

In the Actions this Rule Invokes region, select the *Assign a value* action.

In the Action Details region, choose the Action Details button. The Assign a Value window appears.

In the Assign a Value window, select a collection plan element to Assign the value To.

Select the option to assign a value using a formula (this is the default selection)

Enter the following formula:

`&LINETHICKNESS-&SPECTHICKNESS`

Choose the Variables button. The Output Variables window appears.

Enter the token name 'LINETHICKNESS' for the Line thickness collection plan element. Also enter the token name 'SPECTHICKNESS' for the Specified Thickness collection plan element.

Choose OK to exit both the Output Variables and Quality Actions windows.

Save your work.

See Also

User-Defined Formulas: page 5 – 34

Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34

Quality Collection Transactions

You can collect quality data as you enter transactions in other Oracle Manufacturing Applications.

Collection Transactions

You can associate collection transactions entered in Oracle Purchasing, Oracle Work in Process, and Oracle Service with collection plans. Available transactions are as follows:

- Inspection Transactions (Oracle Purchasing)
- Receiving Transactions (Oracle Purchasing)
- Service Requests (Oracle Service)
- Move Transactions (Oracle Work in Process)

You can associate more than one collection plan with a collection transaction. For example, you can create a collection plan to track final test (e.g., pass/fail status) results and another to record the serial numbers of serial controlled assemblies that fail final test. You can associate the Work in Process move transaction with both collection plans to ensure that both final test and serial number data is captured as assemblies are moved.

You can also associate collection plans with more than one collection transaction. For example, you might associate both the *Move Transaction* and the *Inspection Transaction* collection transactions with a Surface Inspection collection plan. Doing so allows you to use the same collection plan to collect surface inspection data as you move assemblies and complete resurfacing operations and as you receive assemblies resurfaced by an outside supplier.

When you collect quality data as you transact in other Oracle application, the context elements associated with the parent transaction are automatically saved in the quality data repository. Even if you do not explicitly add these context elements to you collection plans, you can use them to define collection triggers. For example, the values for context elements such as Job, Item, and From and To Operation Sequence Numbers which are derived as assemblies are moved, can be used to define collection triggers even if they are not added to the collection plan. Collection triggers are evaluated as transactions are entered and can be used to determine which collection plan should be used in the quality data collection process.

Collection Triggers

Collection triggers are events or conditions that a transaction must satisfy before quality data collection is invoked. Quality data collection is automatically invoked only when *all* conditions for *all* collection triggers are met.

For example, if you define the following collection triggers for the Move Transaction collection transaction:

- From Operation Sequence Number = (equals) 40
- Item = (equals) C45268

Quality data collection is automatically invoked only when both triggers conditions are met (C45268 assembly items are moved out of operation sequence 40). In this example, these triggers work together to ensure that the right data is collected at the right point — operation sequence 40, a critical inspection point in an assembly's routing.

You can define as many collection triggers as are required to make data collection as specific as possible. They are optional.

Collection Transactions and Context Element Relationships

Context element values are derived as you enter collection transactions in other Oracle Applications. Context elements can be used to define collection triggers but do not need to be explicitly added to collection plans.

For example, if you define the trigger 'Department = (equals) Inspection' for the Move Transaction collection transaction, data collection can be invoked each time assemblies are moved into the Inspection department. Furthermore, you can define this trigger regardless of whether the Department context element has been explicitly added to the collection plan because values for context elements are automatically saved in the quality data repository when you enter the parent transaction.

The following table lists the relationships between the various collection transactions and their associated context elements/triggers:

	Purchasing Transactions	WIP Transactions	Service Transactions
Context Element/ Trigger	Receiving and Inspection	Move	Service Request
Actual Resolution Date			✓
ASL Status	✓		
Customer			✓
Department	✓	✓	
Destination Type	✓		
Expected Receipt Date	✓		
Expected Resolution Date			✓
From Op Seq Number		✓	
From Intraoperation Step		✓	
Hazard Class	✓		
Incident Type			✓
Inspection Result Action	✓		
Item	✓	✓	✓
Item Category		✓	✓
Item Description		✓	✓
Job	✓	✓	
Location	✓		
Locator	✓		
Lot			✓
Operation Code		✓	
Order Type	✓		
Ordered Quantity	✓		

Table 5 - 4 (Page 1 of 3)

Context Element/ Trigger	Receiving and Inspection	Move	Service Request
Owner			✓
PO Line Number	✓		
PO Number	✓		
PO Release Number	✓		
PO Shipment	✓		
Parent Transaction Quantity	✓		
Problem Code			✓
Production Line	✓	✓	
Quantity	✓	✓	
Reason Code	✓	✓	
Resolution Code			✓
Requestor	✓		
Revision	✓	✓	
Sales Order Number		✓	
Serial Number			✓
Severity			✓
Subinventory	✓		
Supplier	✓		
Supplier Description	✓		
Supplier Lot Number	✓		
To Intraoperation Step		✓	
To Operation Code		✓	
To Op Seq Number	✓	✓	
To Department		✓	
Transaction Date	✓	✓	

Table 5 - 4 (Page 2 of 3)

Context Element/ Trigger	Receiving and Inspection	Move	Service Request
Transaction Type	✓		
UN Number	✓		
UOM Name	✓	✓	
Urgency			✓
Vendor Item Number	✓		

Table 5 – 4 (Page 3 of 3)

Associating Transactions with Collection Plans

You can associate a collection plan with more than one collection transaction. Conversely you can associate more than one collection plan with each transaction. You can define a unique set of collection triggers for each collection transaction that you associate with a collection plan.

► **To associate collection transactions with collection plans:**

1. Navigate to the Collection Plan window.
2. Select a Collection Plan.
3. Choose the Transactions button. The Collection Transactions window appears.
4. In the Quality Collection Transactions region, select a collection Transaction. See: Quality Collection Transactions: page 5 – 39.
5. Check the Mandatory check box to indicate that quality data collection is mandatory when this transaction is entered and all the conditions specified in the collection triggers, if any, are met.

If you do not check the Mandatory check box, you can skip quality result entry for this transaction.

The default is mandatory for Receiving Transactions in Purchasing and non-mandatory for all other transactions.



Attention: Receiving Inspection collection transactions cannot be set to non-mandatory

6. Check the Background check box to indicate that quality data collection occurs in the background. The default is non-background.



Attention: Receiving Inspection collection transactions cannot be set to background.

Background data collection allows you to collect quality results without invoking the Enter Quality Results window. Background data collection is initiated when a you enter a 'background' collection transaction and all the conditions specified in the collection triggers, if any, are met. Quality results are automatically saved as you save the transaction.

7. Check the Enabled check box to indicate that data collection for this collection plan quality data collection is enabled. The default is non-enabled.

When a collection transaction is enabled, the collection plan it is associated with can be selected and used for quality data collection during transactional data entry.

► **To define collection triggers for collection transactions:**

1. Navigate to the Collection Triggers region.
2. Select the Trigger Name.

The trigger name specifies which context collection element is used to define the trigger. See: Reference Information Collection Elements: page 3 – 7.

3. Select the Condition that must be met to trigger results entry. See: Query Operators: page C – 4.

The condition entered determines when quality data collection is triggered. For example, for the WIP move transaction you might choose to trigger data collection when assemblies are moved from the To Move intraoperation step of Operation Sequence 20 to the Queue intraoperation step of Operation Sequence 30. Before quality data collection can be invoked, all collection triggers and conditions must be met.

4. Based on the Condition, enter a value, or range of values for the specified trigger.

If the condition requires a single value enter only a From value. If the condition selected requires a range, you must enter both a From and To value.

5. Save your work.

See Also

Entering Quality Results for Move Transactions: page 7 – 11

Updating and Deleting Collection Plans

Oracle Quality supports changing business practices. The people in your organization responsible for specifying and maintaining key quality information can change their quality information requirements easily and quickly.

For example, as you select or certify new suppliers, inspection requirements often change, perhaps requiring changes to the supplier collection plans. You can define new collection elements that represent new or modified products and processes then create collection plan elements from them. Similarly, you can delete collection plan elements as they become obsolete.

► **To update collection plans:**

1. Navigate to the Collection Plans window.
2. Select the Collection Plan using Query Find. See: Searching for Information, *Oracle Applications User's Guide*.
3. Update the collection plan.

You can change the description, effective dates, and plan type of a collection plan. You can also change the type of specification that is associated with a collection plan. You can change and delete quality actions and values. Finally, you can change and delete quality collection transactions. There are no restrictions on any of these changes.

You can add collection elements to an existing collection plan. You can update parameters — mandatory, enabled, displayed — as well as the default values of your collection plan elements. You can add, change, and delete collection plan element actions and values. You can make all of these changes without restriction.

4. Save your work.

► **To update database views:**

1. Choose the Views button. The Database Views window appears.
2. Choose the Create Views button.

As you add and delete collection plan elements or change some collection plan element fields, such as the prompt, the database views for the collection plan are automatically updated. If the view update fails, however, you can manually update your database

views using Create Views. See: Collection Plan and Import Results Database Views: page 5 – 6.



Attention: If you are importing quality results data for collection plans created prior to the installation of Oracle Quality Release 10.6.0.14SC, you must first create an import results database view for the collection plan.

3. Save your work.

► **To delete collection plans:**

1. Navigate to the Collection Plans window.
2. Select the Collection Plan.

You cannot delete collection plans for which you have collected results. You can, however, disable a collection plan by changing its effective dates.

3. Choose Delete Record from the Edit Menu.
4. Save your work.

► **To update collection plan attachments:**

- See: Attaching Files to Collection Plans, Specifications, and Results Lines: page B – 3.

See Also

Creating Collection Plans: page 5 – 13

Viewing Collection Plans: page 5 – 48

Viewing Collection Plans

You can view collection plan information in summary or detail. See: Combination Block, *Oracle Application User's Guide*.

▶ **To view collection plans:**

1. Navigate to the View Collection Plan window. The Find Collection Plans window appears.

You can find specific collection plans. You can also can query to find all Enabled collection plans. You can combine search criteria as required.

2. Enter any combination of search criteria and Choose the Find button. The results display in the View Collection Plans Summary window.

You can view collection plans in either the View Collection Plans or the View Collection Plans Summary window. See: Navigating Within a Combination Block, *Oracle Applications User's Guide*.



Attention: You can also view collection plans in summary format as you create collection plans. See: Creating Collection Plans: page 5 – 13.

▶ **To view the names of collection plan and import results database views:**

- From the View Collection Plan window, choose the Views button.

▶ **To view associated collection transactions and triggers:**

- From the View Collection Plan window, select a collection plan element and choose the Transactions button.

▶ **To view collection plan element values:**

- From the View Collection Plan window, select a collection plan element and choose the Values button.

▶ **To view collection plan specification assignments:**

- From the View Collection Plan window, choose the Specifications button.

- ▶ **To view collection plan element actions:**
 - From the View Collection Plan window, select a collection plan element and choose the Actions button.

Data Collection

This chapter explains how to directly enter quality results data, including these topics:

- Overview: page 6 – 2
- Data Collection Fundamentals: page 6 – 4
- Transactional Data Collection Fundamentals: page 6 – 6
- Entering Quality Results Directly: page 6 – 10
- Finding Specifications While Entering Quality Results: page 6 – 12
- Viewing Attachments While Entering Quality Results: page 6 – 14
- Action Processing: page 6 – 16
- Updating and Deleting Quality Results: page 6 – 17
- Posting Action Log Entries: page 6 – 20
- Collection Import: page 6 – 24
- Updating Collection Import: page 6 – 25

Overview of Data Collection

You can enter quality results into the quality data repository directly, as you transact in other Oracle Manufacturing Applications, or using Collection Import.

Direct Data Collection

You can enter quality results directly in standalone mode. You can then update, view, report, and chart these results as required. When you enter results in standalone mode, the data entered is validated, using acceptable values and valid data types, and actions are executed per the collection plan used.

Transactional Data Collection

When you create the collection plans you intend to use for transactional data collection, you can indicate whether or not quality results are to be collected automatically and in the background as you transact. If you indicate that quality results are not to be collected in the background, they are entered using the Enter Quality Results window. Transactional data entry can either be mandatory or optional. As with direct data collection, the data that you entered is validated and actions executed per the collection plan.

Integrating quality data collection with standard manufacturing transactions provides the following benefits:

- makes it possible to collect quality data without changing responsibilities. See: *Choosing a Responsibility, Oracle Applications User's Guide*.
- eliminates redundant data entry and ensures data integrity since data specific to the transaction — such as transaction quantities, dates, and times — is automatically saved in the quality data repository when the parent transaction is saved. See: *Reference Information Collection Elements: page 3 – 7*.
- optionally enforces mandatory collection of quality data by requiring that quality results be entered before the parent transaction can be saved. See: *Quality Collection Transactions: page 5 – 39*.
- allows you to optionally collect quality results automatically in the background without user intervention
- ensure that quality data collection is timely

Collection Import

You can import quality results data directly into the quality data repository using Collection Import. You can also update quality results data using Collection Import.

See Also

Data Collection Options: page 1 – 8

Data Collection Fundamentals: page 6 – 4

Data Collection Fundamentals

If you use the Enter Quality Results window to enter, the following rules are applied. Note that these rules also apply to transactional data collection except where noted.

Specification Selection

When you enter quality data using a collection plan that has been associated with a specification type, you are prompted to find and assign a specification before you can enter quality results.

For example, if you associated the customer specification type with your collection plan, you are prompted to select a *customer specification*. You can select a customer specification, a specification of another type, or no specification at all. See: Finding Specifications While Entering Results Directly: page 6 – 12.

Specification Limits Assignment Rules

You can define specification limits for collection elements and specification elements. When you enter quality data for collection plan elements, specification limit target values and specification limit ranges may or may not be displayed at the bottom of the Enter Quality Results window. If and which specification limit values are displayed is determined by your setup. See: Specification Limit Assignment Rules: page 6 – 4.

- **Specification Selected**

If a specification is selected and the *QA:Default Specification Target* profile option is set to Yes, the following rules apply:

- When you enter results for a collection plan element that corresponds to a specification element on the selected specification, then the specification limits from the specification element are defaulted and displayed at the bottom of the Enter Quality Results window.
- When you enter results for a collection plan element that does not correspond to a specification element on the assigned specification, the specification limit fields at the bottom of the Enter Quality Results window are left *blank*. They are not defaulted from the collection element.

- **Specification Not Selected**

If a specification is not selected, the following rules apply:

- When you enter results for a collection plan element, then the specification limits from the collection element are defaulted and displayed at the bottom of the Enter Quality Results window.
- When you enter results for a collection plan element, but there are no specification limits defined for the collection element, the specification limit fields are left *blank*.



Suggestion: You can easily determine the source of defaulted target values and specification limits. If target values and specification limits are defaulted from specification elements, the name of the specification appears in Spec Name field at the bottom of the window. If target values and specification limits are default from collection elements, this field remains blank.

Note: If you have the profile option *QA:Blind Entry* set to Yes, specification limits are defaulted as described above but are not displayed. See: *QA:Blind Results Entry*: page 2 – 10.

Default Value Assignment Rules

When you enter quality data, which default values are displayed is determined per the following rules.

- **Default Values from Collection Plan Elements**

If your collection plan elements have default values, these values are displayed without exception. You can enter default values as you define as collection plan elements.

- **Default Values from Specification Element Target Values**

You can specify that the *target values* (not default values) that were entered as you defined specification elements are displayed by setting the *QA:Default Specifications Target* profile option to Yes.



Attention: Deriving the default value from the specification element target value is most useful when it is difficult or impossible to determine a reasonable default value for a collection plan element.

- **Default Values from Collection Element Target Values**

If the *QA:Default Specifications Target* profile option is set to No, the target values that were entered as you defined collection element specification limits are used. Target values from collection elements are also defaulted if no specification element target values are defined.

Dependencies and Data Entry Order

When you enter quality results in the Enter Quality Results window, dependencies between context elements are enforced. For example, you cannot enter a value for To/From Operation Sequence without first entering a value for Job or Line. See: Context Element Dependencies: page 5 – 7.

Quality Actions

When you enter quality results, the action rules associated with collection plan elements are evaluated to determine whether to invoke alerts, notifications, or other actions. Invoked actions may be processed on-line or concurrently.

Collection Number

Collection numbers are used to group and track quality results. The collection number counter is incremented each time quality results are saved.

Attachments

You can view collection plan or specification attachments as you enter quality results. Attachments, which are illustrative or explanatory files, can be used to help guide you through the quality results entry process.

See Also

Defining Collection Elements: page 3 – 12

Defining Collection Plan Elements: page 5 – 17

Defining Specification Elements: page 4 – 10

QA:Default Specification Target: page 2 – 10

Transactional Data Collection Fundamentals

Collection plans that have been associated with collection transaction can be used to collect quality results as you transact in other Oracle Manufacturing Applications. You can optionally define collection triggers so that quality data collection is invoked when certain

transaction conditions are met. When invoked, data collection occurs either automatically in background or the Enter Quality Results window appears. See: Quality Collection Transactions: page 5 – 39 and Associating Transactions with Collection Plans: page 5 – 43.

For example, if you create an In-Process Inspection collection plan and add the context elements Job, Item, and From/To Operation Sequence Numbers to it. You can then associate this collection plan with the Oracle Work in Process move transaction using the Collection Transactions window.

In this example, if you define the collection triggers 'Item equals (=) C31556' and 'From Operation Sequence equals (=) 20', when C31556 assembly items are moved From Operation Sequence 20, the system determines that the trigger conditions are met and the In-Process Inspection collection plan is automatically invoked.

Mandatory Data Collection

When you associate a collection transaction with a collection plan, you can choose whether data collection for the transaction is mandatory or whether it is optional. If you make a collection transaction mandatory, you must save at least one quality data record before saving the parent transaction.

For example, if all parts that are resurfaced at a grinding operation must be surface inspected before being moved to the next operation, you can make data collection at the grinding operation mandatory. You can do this by associating the collection plan and with the WIP move transaction and by defining the following collection trigger and trigger conditions:

- From Operation Sequence = 40 (Grinding Operation)
- To Operation Sequence = 60 (Grinding Operation)

When assemblies are moved from operation 40 to operation 60, the collection triggers are evaluated and data collection is automatically invoked. The operator must enter the results of the surface inspection before the move transaction can be completed and saved.

 **Attention:** Inspection Transactions must always be made mandatory. See: Collection Plans for Receiving Inspections: page 8 – 4.

Background Data Collection

Background data collection allows you to collect quality results for context elements without invoking the Enter Quality Results window. Collection plans that have collection transactions defined as 'background,' can be used to collection data in the background. Background data collection is initiated when a you enter a 'background' collection transaction, and the system finds, selects, and initiates quality data collection using — but does not display — the appropriate collection plan or plans.

If there are collection triggers defined for the background collection transaction, data collection is initiated only if all collection trigger conditions are satisfied. Collection transactions and triggers are defined in the Collection Transactions window.

As indicated above, several collection plans can have a background collection transaction in common. When this is the case, results for context elements on all of these collection plans are automatically saved when the parent transaction is saved. For example, if you have four collection plans that are associated the Work in Process move transaction, and the move transaction is defined as a 'background' collection transaction on each, then results for context elements are automatically saved for each of the four collection plans when move (parent) transactions are saved.

Non-Displayed Collection Plan Elements

You are not prompted to enter quality results for collection plan elements that are defined as non-displayed. Any collection plan element can be defined as non-displayed but normally only context elements, for which data is automatically collected as you transact, are suppressed. This is useful because values for context elements are automatically collected and cannot be changed, therefore displaying them to the user is unnecessary.

For example, you can create a Scrap collection plan that contains the following collection plan elements: Item, Serial Number, Job, Quantity, Scrap, and Operator, so that you can collect quality data each time defective assemblies are scrapped using the Work in Process move transaction. You can associate this collection plan with the Work in Process move transaction and optionally define a collection trigger so that the Scrap collection plan is invoked each time assemblies are moved into a Scrap intraoperation step.

If you define the context elements on this collection plan (Item, Job, and To/From Operation Sequences) as non-displayed, the results values for

these context elements are not displayed when the Scrap collection plan is invoked for data entry. Thus you are prompted to enter results values for only those collection plan elements that are defined as displayed (Quantity, Scrap, and Operator).

See Also

Creating Collection Plans: page 5 – 13

Associating Transactions with Collection Plans: page 5 – 43

Entering Quality Results Directly

The Enter Quality Results window can be used to enter quality results directly. It can also be invoked as you enter move transactions, receiving transactions, service requests, and as you perform receiving inspections using Oracle Quality.

Prerequisites

- Create a collection plan. See: Creating Collection Plans: page 5 – 13.

► To find collection plans:

1. Navigate to the Enter Quality Results window.

Item	Quantity	UOM	Inspection Resu	PO Quality Cod	Inspection Reason	Inspection Su

2. Select a collection plan.

You can only select a collection plan that has a current effective date. If a default collection plan has been specified, it is automatically selected. See: QA:Default Collection Plan: page 2 – 10.

You can use the Find Plan button or the standard list of values to find and select a collection plan. Once you have selected a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to

another valid collection plan. See: Using a List of Values, *Oracle Applications User's Guide*.

If you select a collection plan that *requires* that you find and assign a specification, the Find Specifications window appears. See: Finding Specifications While Entering Results Directly: page 6 – 12.

► **To optionally find and assign specifications:**

- From the Enter Quality Results window, choose the Find Specs button. The Find Specifications window appears. See: Finding Specifications While Entering Quality Results Directly: page 6 – 12.

► **To enter quality results values:**

1. In the Results region, enter one or more results records. The following mechanisms can be used to simplify data entry:

Default value: Default values, if defined, are automatically displayed. They can be overridden. See: Default Value Assignment Rules: page 6 – 5.

Lists of Values: You can choose results values from a list of values if defined. See: Defining Collection Plan Element Values: page 5 – 20.

Duplication: You can duplicate fields and records. Duplicated records and fields can be changed as required. See: Duplicating Data From a Previous Record, *Oracle Applications User's Guide* .



Attention: The Prompts entered when defining the collection elements are displayed as the column headings.

You must enter results values for mandatory collection plan elements. See: Context Element Dependencies: page 5 – 7.

2. Save your work. See: Saving Your Work, *Oracle Applications User's Guide*.



Attention: If you save your work using *Save and Proceed*, the current results are cleared and the Collection Number counter is incremented. You can continue to enter results for the same collection plan and, if assigned, specification.

► **To view collection plan or specification attachments while entering quality results:**

- See: Viewing Attachments Associated with Quality Results: page 6 – 14.

See Also

Profile Options: page 2 – 9

Finding Specifications While Entering Results Directly

If a specification type has been associated with the collection plan selected, you are prompted to find and select a specification of that type as you enter quality results. You can select a specification from the list of values or by entering search criteria. You can optionally select a specification of another type. You can also select specifications for collection plans that do not have a designated specification type.

- ▶ **To find and select specifications by name:**
 - In the Find Specifications window, select or enter the Specification Name. The window is automatically populated with the defaults associated with your specification selection.

The screenshot shows a dialog box titled "Find Specifications (GLO)". It features a "Specification Name" input field at the top. Below this, there are three radio buttons for "Item Spec", "Supplier Spec", and "Customer Spec", with "Item Spec" selected. Under "Item Spec", there are two sub-radio buttons: "Item" (selected) and "Category". The "Item" sub-section includes an "Item" text field and a "Revision" text field. The "Category" sub-section includes a text field. At the bottom of the dialog, there is a "Spec Subtype" text field followed by an equals sign and another text field. At the bottom right, there are three buttons: "Clear", "Cancel", and "Find".

Selecting a specification by name is the fastest specification selection method.

- ▶ **To by-pass specification selection:**
 - Choose the Cancel button.



Attention: If you choose Cancel, the specification limits that are defined for the collection elements are used. See: Defining Collection Element Specification Limits: page 3 – 18.

► **To find and select specifications by type:**

- Enter your search criteria then choose the Find button.

You can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you select a Supplier Spec or Customer Spec specification type, you must also select the Customer or Supplier.

If you try to find any type of specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. The *default category set* you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set: page 2 – 11.

If you entered search criteria and no specification that matches the criteria is found, a warning message is displayed and the specification limits that were defined for the collection element are used. See: Defining Collection Element Specification Limits: page 3 – 18.

See Also

Specification Types: page 4 – 4

Associating Specification Types with Collection Plans: page 5 – 22

Viewing Attachments Associated with Quality Results

You can define and view specification and collection plan attachments using the Specifications and Collection Plans windows. You can also view collection plan attachments as you enter, update, and view quality results. Similarly you can view specification attachments as you enter quality results.

Prerequisites

- Attach files to collection plans and specifications. See: Attaching Files to Collection Plans, Specifications, and Result Lines: page B – 3.

► **To view collection plan attachments while entering, updating, or viewing quality results:**

1. After selecting a collection plan in either the Enter Quality Results, Update Quality Results, or View Quality Results window, position the cursor in the Collection Plan region at the top of the window.

The cursor can be in any field in this region: the Collection Plan or Description field in the Update Quality Results and View Quality Results window or the Collection Plan, Description, or Collection Number field in the Enter Quality Results window.

2. Choose the Attachments icon or choose Attachments from the Edit menu. The Attachments window appears.

► **To view specification attachments while entering quality results:**

1. After selecting a collection plan and specification in the Enter Quality Results window, position the cursor in the Specifications region at the bottom of the window.

The cursor can be in any field in this region: the Spec Name, UOM, Target value, Upper specification, or Lower specification field.

2. Choose the Attachments icon or choose Attachments from the Edit menu. The Attachments window appears.



Attention: You can only view specification attachments if the *QA:Blind Result Entry* profile option is set to No. See: *QA:Blind Results Entry*: page 2 – 10.

See Also

Entering Quality Results Directly: page 6 – 10

Updating and Deleting Quality Results: page 6 – 17

Viewing Quality Results: page 10 – 35

Action Processing

As you collect quality results, the action rules associated collection plan elements are evaluated to determine whether to invoke alerts, notifications, or other actions.

Immediate Actions

The following actions are immediate actions. When invoked, they are *always* processed on-line immediately and control is returned to you:

- Display a message to the operator (message action)
- Reject the input (message action)
- Assign a Value action

Processing Mode Dependent Actions

The following actions are can be processed either concurrently or on-line depending on how the *QA:Action Processing Mode* profile option is set:

- *Assign a shop floor status to the intraoperation step* (WIP action)
- *Place the job on hold* (WIP action)
- *Hold all schedules building this assembly on this production line* (WIP action)
- *Post an entry to the Quality Action Log* (message action)

Background Actions

All alert actions, listed below, are background actions. When invoked, they are always processed concurrently in the background and control is immediately returned to you:

- *Send an electronic mail notification*
- *Execute a SQL script*
- *Execute an operating system script*
- *Launch a concurrent request*

See Also

Quality Actions: page 3 – 20

Viewing and Deleting Action Log Entries: page 10 – 45

QA:Action Mode Processing: page 2 – 9

Updating and Deleting Quality Results

You can find, view, and update quality results. You can find and view specific quality results associated with a collection plan using Query Find and Query-by-Example.

You can view collection plan attachments as you update quality results. Attachments, which are illustrative or explanatory files, can be used to help guide you through the quality results update process.

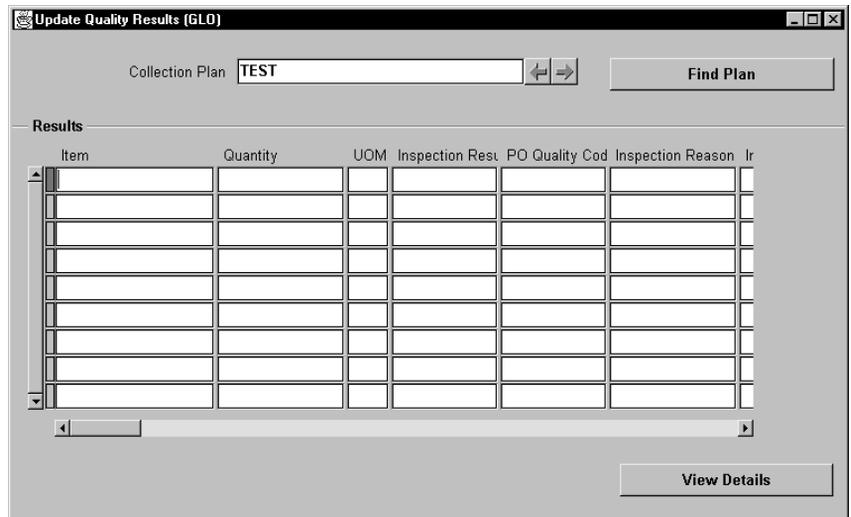
Note: You can only enter results using one specification in the Enter Quality Results window. However, you can find and update quality results associated with more than one specification in this window.

Prerequisites

- Enter quality results. See: Entering Quality Result Directly: page 6 – 10.

► **To select all quality results for a collection plan:**

1. Navigate to the Update Quality Results window. The Update Quality Results window appears.



2. Select the Collection Plan.

You can only select a collection plan that has a current effective date. If a default collection plan has been specified, it is

automatically selected. See: QA:Default Collection Plan: page 2 – 10.

You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan. See: Using a List of Values, *Oracle Applications User's Guide*.

Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

- ▶ **To find specific quality results:**
 - Position the cursor in any field in the Results region and choose *Find* from the Query menu. The Find Results window appears. See: Finding Quality Results: page C – 2.

- ▶ **To find specific quality results using query-by-example:**
 - Position the cursor in any field in the Results region and choose *Enter* from the Query menu. See: Performing Query-by-Example, *Oracle Applications User's Guide*.

- ▶ **To update quality results:**
 - In the Results region select the results record, then update it.
You cannot update values that are associated with context elements or common collection plan elements.

- ▶ **To delete quality results:**
 - In the Results region select the results record, then choose *Delete Record* from the Edit Menu.

- ▶ **To view detailed target value and specification limit information for a quality results value:**
 - See: Viewing Quality Results Details: page 10 – 36.

- ▶ **To export quality results:**
 - See: Exporting Quality Results: page 10 – 47.

- ▶ **To view collection plan attachments while updating quality results:**
 - See: Viewing Attachments Associated with Quality Results: page 6 – 14.

See Also

Profile Options: page 2 – 9

Posting Action Log Entries

Action log entries are created when the "Post an entry to the Quality Action Log" action is invoked. See: Message Actions: page 3 – 20.

Consider the following action rule and its associated actions:

Action Rule: When a critical measurement is outside the upper and lower specification limits then

Action 1: Put a job on hold.

Action 2: Post an entry to the Quality Action Log

In this example, two actions are linked to a single rule. When the rule is evaluated and the actions invoked, the default text that was entered for the "Post an entry to the Quality Action Log" action is automatically written to the Quality Action Log.

Action log entries are also created when an action being processed in concurrent mode fails. See: QA:Action Mode Processing: page 2 – 9.

Prerequisites

- Define a "Post an entry to the Quality Action Log" action. See: Defining Collection Element Actions: page 3 – 27 and Defining Collection Plan Element Actions: page 5 – 25.

► **To post action log entries:**

- Enter quality results that satisfy the action rule and invoke the related action. See: Entering Quality Results Directly: page 6 – 10.

Specifications for Transactional Data Collection

If a specification type has been associated with the collection plan that is invoked as you enter a parent transaction, the system searches for the correct specification based on information provided by the transaction. If there is not enough information to find a specification, you are prompted to select one. You can select a specification other than the type designated for the selected collection plan. You can choose not to select a specification if prompted to do so.

You can enter quality results as you enter transactions using collection plans that have a designated specification type. If no item specification can be found for the item, the system searches for a specification based on the item category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: *QA:Quality Category Set*: page 2 – 11.



Attention: Once you have selected, or chosen not to select, a specification during transactional data collection you cannot change your specification selection without deleting the results you have already entered.

Item Category Specification Example

You create a Scrap collection plan to collect data about scrap transactions associated with the WIP Move transactions. You also associate this collection plan with the "Item" specification type. However, you do not define a specification for the item, AX100, you plan to scrap. Instead you define a specification that is associated with the item's category. As you scrap AX100 item assemblies (by moving them into a scrap intraoperation step), the system searches item specification (e.g. a specification for AX100) then, not finding an item specification, searches for and finds a specification for the category of item AX100. See: *Specification Types*: page 4 – 4.

Supplier Specification Example

You create an Outside Processing collection plan and associate it with the "Supplier" specification type. As you enter WIP move transactions for item A54888, worked on by supplier Comprehensive Components, you are prompted to enter the supplier. The system then searches for a specification that is defined for this item and supplier combination.

Customer Specification Example

The Customer Dimension Requirements collection plan captures inspection results in the WIP Move transaction for items produced for key customers. Each customer has different specification requirements

so you created specifications by item and customer to track these requirements. You designated specification type Customer Specifications for the Customer Dimension Requirements collection plan. Oracle Quality searches for specifications by item and customer during quality data collection; however, the move transaction does not automatically know the customer number, so you are prompted for this information before the search for the specification begins.

Finding Specifications During Transactional Data Collection

If a specification type has been associated with the collection plan that is invoked as you enter a parent transaction, the system searches for the correct specification based on information provided by the transaction. If there is not enough information to find the specification, the Find Specifications window appears and you are prompted to find and select a specification. You can select a specification other than the type associated with the collection plan. You can also choose not to select a specification.

► **To find and select specifications by name:**

- If the system cannot find the correct specification based upon the context element information derived from the parent transaction, the Find Specifications window appears. Information from the parent transaction is automatically defaulted. Select or enter the Specification Name.



Attention: Selecting a specification by name is the fastest specification selection method.

► **To by-pass specification selection:**

- Choose the Cancel button.



Attention: If you choose Cancel, the specification limits that are defined for the collection elements are used. See: Defining Collection Element Specification Limits: page 3 – 18.

► **To find and select specifications by type:**

- Again, if the system cannot find the correct specification based upon the context element information supplied by the parent transactions, the Find Specifications window appears. Information from the parent transaction (e.g. item) is automatically defaulted

but you can enter your own search criteria then choose the Find button.

You can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you select a Supplier Specification or Customer Specification, you must also select the Customer or Supplier.

If you try to find any type of specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. The *default category set* you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: *QA:Quality Category Set*: page 2 – 11.

If you have entered search criteria and no specification that matches the criteria entered is found a warning message is displayed and the specification limits that are defined for the collection element are defaulted. See: *Defining Collection Element Specification Limits*: page 3 – 18.

► **To select a different specification:**

Choose the Find Specs button to find and select another specification. When you choose the find button, information from the parent transaction is automatically defaulted, but you can enter your own search criteria.



Attention: You can only select a different specification if no results have been collected. Once a specification is selected and results are entered, this same specification is used until you delete the current results or change the collection plan or collection number.

See Also

Specification Types: page 4 – 4

Associating Specification Types with Collection Plans: page 5 – 22

Collection Import

You can load quality results data from external systems into the quality data repository using the Collection Import Interface. For example, you can load data from sources such as test equipment and gauges into the Collection Import Interface.

The Launch Collection Import Manager window is used to launch the Collection Import Manager which validates records in the Collection Import Interface then imports this data into the quality data repository.

Quality results data that fails validation or processing is marked. You can use the Update Collection Import window to view, update, and resubmit this information.

The Collection Import Manager allows you to insert multiple rows of data into the quality data repository; it also allows you to update existing rows of data. When you launch the Collection Import Manager, you have the option of either inserting multiple rows or updating a single row; you cannot insert rows and update rows at the same time.



Attention: If you choose to update existing rows, you can only update one row at a time.

See Also

Collection Import Interface, *Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual*

Overview of Reports and Programs, *Oracle Applications User's Guide*

Importing Quality Results Data: page 12 – 12

Updating Collection Import: page 6 – 25

Updating Collection Import

You can find, view, update, delete, and resubmit records (rows) that have failed validation and remain in the Collection Import Interface Table (QA_RESULTS_INTERFACE). You can view the error messages associated with failed records. Error messages assist you in updating failed records prior to resubmission.

You cannot insert new collection import records using this window.

Prerequisites

- Insert quality results data into the Collection Import Interface Table. See: Collection Import Interface, *Oracle Manufacturing, Distribution, Sales and Service Open Interfaces Manual*.

► To display all collection import records for a collection plan:

1. Navigate to the Update Collection Import folder window. See: Customizing the Presentation of Data in a Folder, *Oracle Applications User's Guide*.

TRANSACTION_ID	PROCESS_STATUS	MATCHING_ELEMENT	INSERT_TYPE	QA_LAST_UPDATE	QA_CREATED
125	Completed (4)			GLOBAL	GLOBAL
109	Completed (4)	Quantity	Update(2)	GLOBAL	GLOBAL
108	Running (2)	Quantity	Update(2)	GLOBAL	GLOBAL
107	Error (3)	Quantity	Update(2)	GLOBAL	GLOBAL
106	Pending (1)	Item, Quantity	Update(2)	GLOBAL	GLOBAL
105	Completed (4)	Item, Quantity	Update(2)	GLOBAL	GLOBAL

2. Select the Collection Plan.

You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid

collection plan. See: Using a List of Values, *Oracle Applications User's Guide*.

When you select a collection plan, all collection import records that are associated with that collection plan are displayed.

► **To view error details for a failed record:**

1. In the Update Collection Import window, select the failed row.
2. Choose the Show Errors button. The Errors window appears.

All errors for the selected row are displayed. *Error Column* indicates the name of the column in the Collection Import Interface Table that failed validation. *Error Message* indicates why the transaction failed. Messages that are not specific to a Column may also be displayed.

► **To update failed collection import records:**

- From the records displayed in the Update Collection Import window, select a failed record and update as required. You can update any column of any record.

Records that are updated are not automatically resubmitted.



Attention: The list of values that are displayed for dependent context elements contain all values. For example, if you are updating a row that includes a Revision and an Item, the list of values associated the Revision context element list all Revisions, not just those for the Item specified in the row.

► **To resubmit failed collection import records:**

1. From the records displayed in the Update Collection Import window, select the record or records to resubmit. You can select or deselect records as required. See: Selecting Multiple Records, *Oracle Applications User's Guide*.
2. Choose the Resubmit button to mark the record or records for resubmission.
3. Save your work.

When you save your work, marked records are resubmitted. Resubmitting records resets their process status flags to 1 (Pending), and nulls their Group ID. The next time the Collection Import Manager polls the Collection Import Interface Table, these records are reprocessed and revalidated.

► **To delete collection import records:**

1. From the records displayed in the Update Collection Import window, select the record or records to resubmit. You can select or deselect records as required. See: *Selecting Multiple Records, Oracle Applications User's Guide*.

You can delete records of any processing status. When you delete records, their corresponding error messages are deleted from the Errors table (QA_INTERFACE_ERRORS).

2. Choose Delete from the Edit menu.

Managing Work in Process Quality

This chapter describes the process of collecting quality results data as you enter transactions in other Oracle Applications, including these topics:

- Using Oracle Quality with Oracle Work in Process: page 7 – 2
- Collection Plans for Move Transactions: page 7 – 2
- Setting up Routings for Quality Data Collection: page 7 – 5
- Entering Quality Results Associated with Move Transactions: page 7 – 11

Using Oracle Quality with Oracle Work in Process

You can collect quality data as you enter transactions in Oracle Work in Process.

Collect Quality Results During Production

When you use Oracle Quality with Oracle Work in Process, you can capture vital quality information as your product is produced. For example, you can collect information about the life cycle of a serialized assembly as well as WIP-specific information required for process control improvements.

Collection Points in Oracle Work in Process

In this release of Oracle Manufacturing, quality data can be collected as you:

- collect data on manufacturing processes that affect product quality
- collect historical data on the lot and serial controlled items that you build
- report failure analysis by problem and product
- place a job or repetitive schedule on hold.

Collection Plans for Move Transactions

The collection plans you use to collect quality data as you move assemblies through the shop floor are similar to other collection plans.

What follows here is a general discussion of collection plans.

Collection Plan Elements

You can add user-defined collection elements to your move transaction collection plans. For example, you might add a collection element to capture the name of a machine at a particular operation step. You can also explicitly add context to these collection plans. You can define these context elements as non-displayed. See: Reference Information Collection Elements: page 3 – 7 and Collection Transactions and Context Element Relationships: page 5 – 40.

Actions

You can add actions to you move transaction collection plans then define the rules under which these actions are applied. See: Quality Actions: page 3 – 20.

Actions can be specific to Work in Process, such as the Put the job on hold action. You can also add message, alert and user-defined actions. See: Application Specific Actions: page 3 – 21, Message Actions: page 3 – 20, Alert Actions: page 3 – 21, and User-Defined Actions: page 3 – 21.

Collection Transactions and Collection Triggers

The *Move Transaction* collection transaction must be associated with the collection plans you use for move transactions. You can optionally associate more than one type of collection transactions with a collection plan. See: Associating Transactions with Collection Plans: page 5 – 43.

You can make the entry of quality data mandatory for the move transaction by setting its Mandatory option. If data entry is required, you cannot save the parent transaction, in this case the move transaction, without entering quality data. See Mandatory Data Collection: page 6 – 7.

You can also specify that data should be collected in the background. As you save the move transaction, the system searches for valid background collection plans. Valid collection plans are those that are associated with the *Move Transaction* collection transaction and are set to background data collection. See: Background Data Collection: page 6 – 8.

You can define one or more collection triggers for each collection transaction. Collection triggers allow you to specify the conditions under which quality data collection is invoked as move transactions are entered.

See Also

Overview of Oracle Quality: page 1 – 6

Overview of Shop Floor Control, *Oracle Work in Process User's Guide*

Defining Collection Elements: page 3 – 12

Defining Specifications: page 4 – 7

Creating Collection Plans: page 5 – 13

Quality Actions: page 3 – 20

Quality Collection Transactions: page 5 – 39

Entering Quality Results for Move Transactions: page 7 – 11

Setting up Routings for Quality Data Collection

You have a number of choices regarding the exact point of quality data collection. Through collection triggers, you can tie a very specific point in your routing to quality data collection, thus ensuring that quality results are recorded as soon as they become available, and quality problems are caught as soon as they become evident.

In setting up your routings and planning your quality collection, you should consider the following key questions:

- Who should be entering the data?
- When does the data become available to this person?
- When is it appropriate and convenient to enter the data?

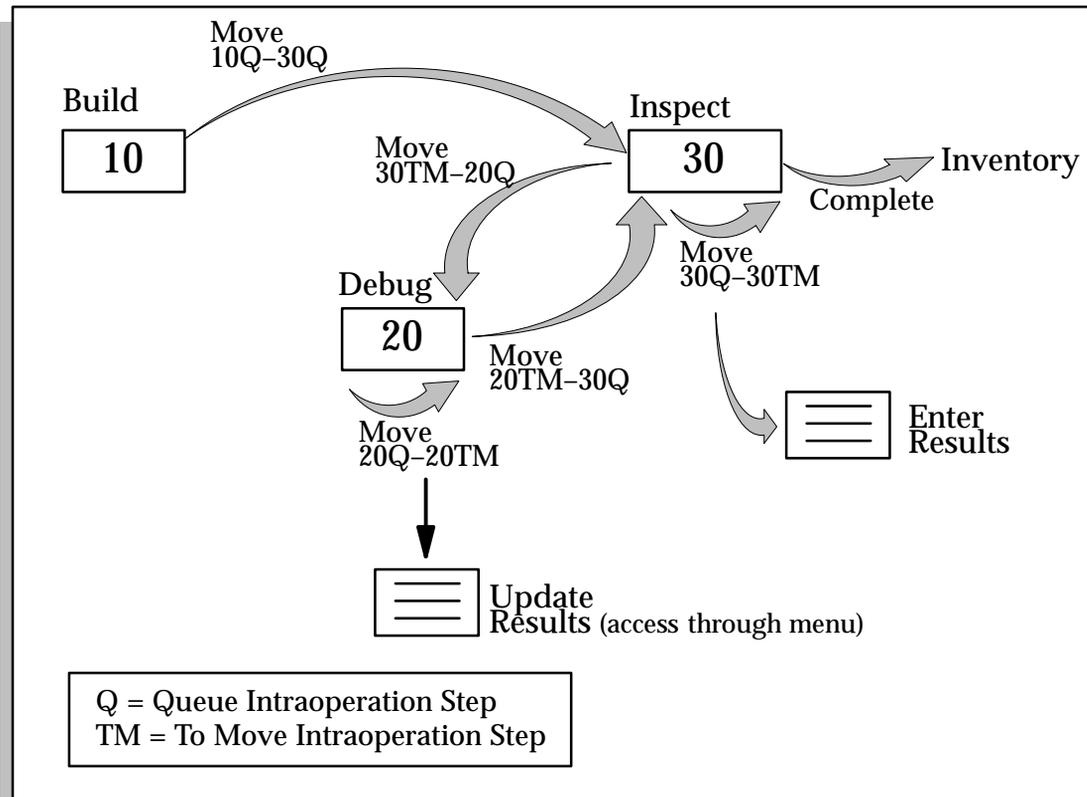
The answers to these questions should help you determine how to set up your routings and collection triggers. Keep them in mind as you read on.

The following are examples of how you might set up your routings to support meaningful integration with Oracle Quality via collection triggers. They are designed to show you how you might address some of the same issues that may arise during the set up process.

Routing 1: Planned Inspection, All Assemblies

If you are performing inspections on 100% of your assemblies at key points in your assembly, you would likely set up inspection operations as part of your assembly's routing. The Defect Code Pareto Analysis business example for the RF transmitter manufacturer used this kind of approach.

Figure 7 - 1



The inspection operation needs to be last in the routing because 100% inspection is required. Making the inspection the last operation ensures that all of your assemblies, including those that may need to be reinspected if any debugging or reworking has taken place, are inspected because all assemblies must pass through the To Move step of the last operation before they can be completed. Your debug operation should not be a count point operation, and as such, should not be the last operation on your routing.

Since all of your assemblies must go through the inspection operation, this operation should be a count point operation. Defining the collection trigger as a move into the To Move step of the inspection operation ensures that the results are entered when the inspection work at the operation is done and the assemblies are ready to move on, either into Inventory or to the debug operation. Triggering results collection off an a move into the last intraoperation step of the operation helps ensure that the qualified personnel at the inspection operation enters

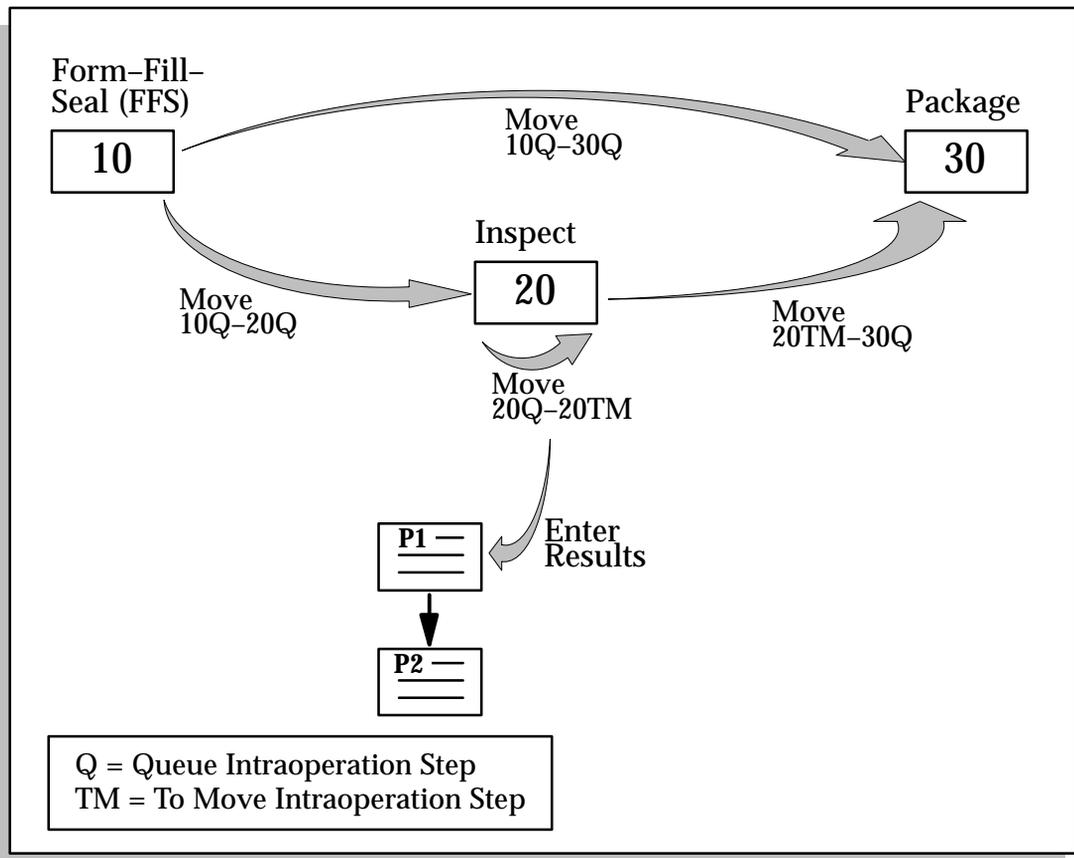
the inspection results. Note that the move that triggers the quality data collection could be an intraoperation move, as shown in the diagram, but could also be an interoperation move straight into To Move of the inspection operation.

You should use the Update Quality Results window to update the results records with appropriate defect and disposition codes. You can access this window through the Oracle Quality menu.

Routing 2: Planned Inspection, Some Assemblies

If inspection is part of your standard routing for an assembly, but only a fraction of your assemblies actually go through inspection, you may want to use the following routing model:

Figure 7 - 2



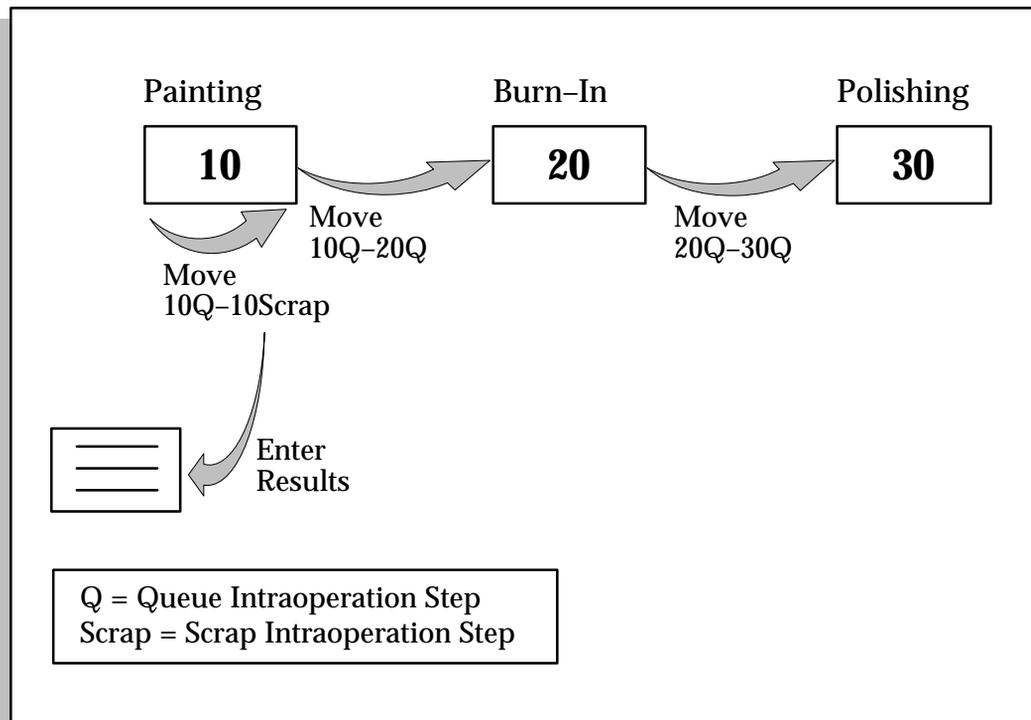
The medical compound manufacturer in the Yield Reporting example used this particular model. While this routing contains similar steps as the previous example, the key difference is that not all assemblies are inspected. Therefore neither the inspection nor the disposition operations should be count point operations. This means that if you do a move transaction from operation 10, operation 30 (i.e. the next count point operation) is defaulted as your "to" operation. You should override the default for those assemblies that are to be inspected.

A move into the To Move step of your inspection operation can once again serve as the collection trigger for results entry.

Routing 3: Exception Reporting

You may want to capture quality information only when there is a quality problem. You may also want to give employees at every point on the routing the authority to report a quality problem, regardless of whether the operation is an inspection operation. The simplest way to support this need would be to use the following routing:

Figure 7 - 3



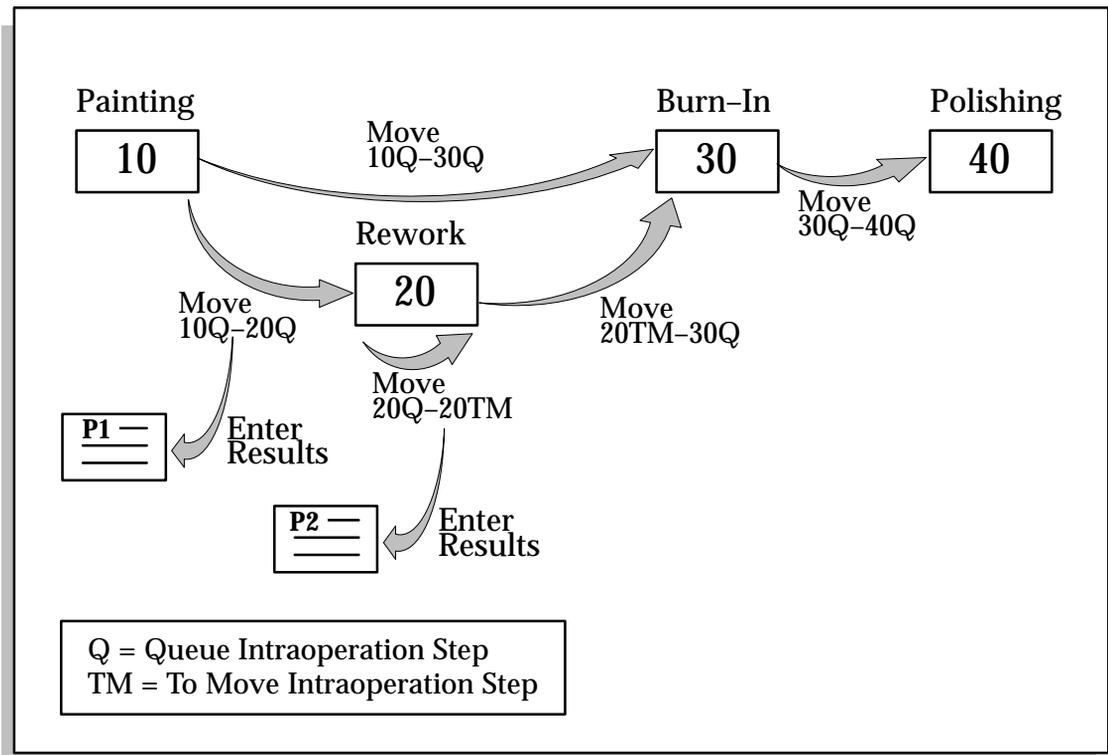
In other words, you simply use your regular routing, and define a collection trigger to fire on move into the Scrap intraoperation step. You can make this specific to one or several operations, or use the same trigger to fire whenever a move to Scrap is entered.

Similarly, you could define moves into Reject to be a collection trigger for quality results entry.

Routing 4: In-line Debug / Rework

If your product and processes support in-line rework, that is, if you can sometimes fix an assembly at a designated rework operation, you may want to concentrate on recording quality data pertaining to the assemblies you are reworking. For example, you may want to capture historical information about serialized assemblies. You may also do the detailed analysis of the cause of the defect at the rework center, and consequently you want to report this information there.

Figure 7 - 4



The rework operation should not be a count point operation, since you do not expect to be moving all assemblies into the rework operation. The example shows two collection triggers associated with the rework operation, one fires when you move into the Queue of the rework operation from any other operation, the other fires when you do an intraoperation move to the To Move step of the operation. The first collection plan, P1, might have the Employee ID, the operation sequence or resource ID of the machine where the defect was discovered, and a free text description of the problem captured at the source, and it may invoke an action rule to alert the rework center that a failed assembly is on its way. This could be particularly relevant if the rework operation is in another building, or tends to get overloaded. P2 may include more detailed information, i.e. information that becomes available after some analysis has been done at the rework operation.

The advantage of using two collection plans rather than using one and updating it, is that you can invoke both collection plans through collection triggers. If you used one collection plan, as in the previous example, you would have to update it to enter the results of your analysis by accessing the Update Quality Results window through the menu. The advantage of having only one collection plan, on the other hand, is that results are typically displayed by collection plan.

See Also

Overview of Routings and Operations, *Oracle Bills of Material User's Guide*

Entering Quality Results for Move Transactions

If Oracle Quality is installed and at least one collection plan that is associated with the Work in Process move transaction exists, the Enter Quality Results Special Menu option and the Quality button are enabled and quality results can be entered.



Warning: The Special Menu option is enabled even if, based upon the move transaction information entered, the collection triggers conditions for this collection plan are not met.

In fact, based upon the transaction information entered, quality results entry may be required. See: Mandatory Data Collection: page 6 – 7.

Background data collection occurs automatically if valid background collection plans are found when you save move transactions. The Enter Quality Results window is not displayed during background collection. See: Background Data Collection: page 6 – 8.

Prerequisites

- Perform a move transaction but do not save your work. See: Performing Move Transaction, *Oracle Work in Process User's Guide*

► To enter quality data for move transactions:

1. Before saving your work, choose Enter Quality Results from the *Special Menu*. The Enter Quality Results window appears.



Attention: If you attempt to save a move transaction and the system find one or more mandatory collection plans, you must enter quality results before proceeding. Mandatory collection plans are those that are associated with the Move Transaction collection transaction and for which all collection triggers are evaluated as true.

2. Select a collection plan. The Enter Quality Results window appears.

You can select any collection plan that is associated with and enabled for the *Move Transaction* collection transaction.

► To find and assign specifications:

- If the selected collection plan has been associated with the customer or supplier specification type, the Find Specifications window automatically appears. If it is associated with the item specification type, the assembly item being moved is used to derive

the specification. If no specification for that item can be found, the system searches for a specification based on the item's category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: *QA:Quality Category Set: page 2 – 11.*

If the collection plan is not associated with a specification type, You can optionally invoke the Find Specifications window using the Find Specs button from the Enter Quality Results window. See: *Finding Specifications During Transactional Data Collection: page 6 – 22.*

The Enter Quality Results window reappears after you select a specification or cancel selection.

► **To enter quality results:**

1. In the Results region of the Enter Quality Results window, enter one or more records.

If the collection plan selected requires mandatory data collection, you must enter quality results. You cannot save the move transaction until you do so. If data collection is not mandatory, you can skip quality data entry by choosing Cancel.

Depending on the collection plan and its elements, you can use several mechanisms to speed data entry.

Default value: Default values, if defined, are automatically displayed. They can be overridden. See: *Default Value Assignment Rules: page 6 – 5.*

Lists of Values: You can choose results values from a list of values if defined. See: *Defining Collection Plan Element Values: page 5 – 20 and .*

Duplication: You can duplicate fields and records. Duplicated records and fields can be changed as required. See: *Duplicating Data From a Previous Record, Oracle Applications User's Guide.*



Attention: The Prompts entered when defining the collection elements are displayed as the column headings.

You must enter quality data for mandatory collection plan elements. See: *Context Element Dependencies: page 5 – 7.*

2. Save your work. See: *Saving Your Work, Oracle Applications User's Guide.*

If you save your work using *Save and Proceed*, the current results are cleared and the Collection Number counter is incremented. You

can continue to enter results for the same collection plan and, if assigned, specification.

► **To view collection plan or specification attachments while entering quality data:**

- See: Viewing Attachments Associated with Quality Results: page 6 – 14.

See Also

Transactional Data Collection Fundamentals: page 6 – 4

Entering Quality Results Directly: page 6 – 10

Business Examples

The following examples describe how you might use Oracle Quality with Oracle Work in Process. These examples illustrate some of the most common applications of quality systems on the shop floor and to demonstrate how to use Oracle Quality to collect the desired information.

Defect Code Pareto Analysis

You are the quality manager for a manufacturer of radio frequency (RF) transmitter equipment used in fiber optics communications applications. Your long-term quality goal is to achieve zero-defect manufacturing. However, you realize that small step improvements are required before your long-term goal can be reached. Therefore your immediate short-term goal is zero-defects in one particular area — customer shipments.

To meet this goal you must implement procedures that ensure that every transmitter is tested with a power meter at an Inspection station before it leaves the factory. To ensure a "flat" response over a wide range of frequencies, two samples are taken based on a given frequency input. The resultant output measured in decibels (DB) is an indicator of how well the RF transmitter meets customer requirements. The choice of input frequency used depends on the type of transmitter you are building, i.e. on the item model. For instance, for one model, the RF transmitter model, has output of 20 dB +/- 0.5 at an input frequency of 10 megahertz (Mhz) but has an output of 19.5 dB +/- 1.0 at an input frequency of 500 Mhz.

When a transmitter fails test, a Symptom Code that clearly describes the observed results is assigned and the unit is moved to a repair operation. Based on the Symptom Code, directed analysis in the repair area leads to the assignment of a Cause Code and subsequently a Disposition Code.

You can use inquiries, reports, and Pareto Charts to analyze the most common causes of defects. Appropriate corrective actions can then be taken to ensure that your long-term goal of zero-defect manufacturing is met.

Figure 7 – 5

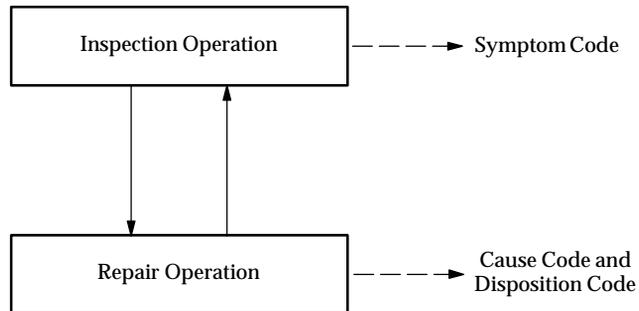


Figure 7 – 5 illustrates the quality data collection points discussed above.

Setup

Based upon the above information, you have determined that you need to create a RF Transmitter collection plan that includes the following collection elements:

- Job
- Item
- Serial Number
- Transaction Date
- Assembler ID
- Symptom Code
- Cause Code
- Disposition Code
- Date of Manufacture
- Low Frequency
- Low dB Reading
- High Frequency
- High dB Reading

- Quality Control Id (Employee Id of the person performing the analysis)

Collection Elements

Of the collection elements listed above, six (Assembler ID, Low Frequency, Low dB Reading, High Frequency, High dB Reading, and Quality Control Id) are user-defined. All others are predefined (Symptom Code, Cause Code, and Disposition Code) or context elements (Job, Item, Serial Number, and Transaction Date). See: Defining Collection Elements: page 3 – 12.

Specifications

Specifications ensure that products are useable and are typically based upon customer requirements. Therefore the next step is to define an item specification, 'RF Transmitter1', specifically for your Model 1 RF Transmitter. Note that you can define separate specifications for each transmitter model that you manufacture.

Add the Low DB and High DB collection elements to the RF Transmitter1 specification. If the required specification limits for these collection elements, 19.5 dB +/- 1.0 and 20 dB +/- 0.5 respectively, have been defined for the collection element they are automatically copied as you add them to the specification. If they have not been defined, you can define them in the Specification Elements window. See: Defining Specifications: page 4 – 7 and Defining Specification Elements: page 4 – 10.

Finally, add the Low Frequency and High Frequency collection elements to the specification. If the required target values for these collection elements, 10 megahertz (Mhz) and 500 (Mhz) respectively, have been defined for the collection element they are automatically copied as you add them to the specification. If they have not been defined, you can define them in the Specification Elements window. If you set the *QA:Default Specifications Target* profile option to Yes, these target values are automatically defaulted when the RF Transmitter collection plan is invoked by a move transaction.

Collection Element and Collection Plan Element Values

You can define lists of values or SQL validation statements for the required predefined attribute collection elements (Symptom Code, Cause Code, and Disposition Code) and for your user-defined collection elements. Lists of values can be defined at the collection element level and copied to their corresponding collection plan elements. However, you can also define unique lists of values for the collection plan elements. For example, the list of values for the RF

Transmitter collection plan elements Symptom Code, Cause Code, and Disposition Code — Okay and Failed, Not Applicable and Assembler Error, and Not Applicable and Scrap respectively — are unique to only this collection plan. See Defining Collection Element Values: page 3 – 16 and See: Defining Collection Plan Element Values: page 5 – 20.



Attention: Upper and Lower Specification Limits are not required for the Low Frequency and High Frequency specification elements since frequency is an input in testing RF transmitters.

Collection Plan

Next, create the "RF Transmitter" collection plan and add the above listed collection elements to it. All collection plan elements, except Cause and Disposition Code, should be defined as displayed and mandatory. Cause and Disposition Code should be defined as non-mandatory so that they can be skipped when you enter your initial results. Later, after further results analysis has been done, they can be updated using the Update Quality Results window.

Collection Plan Element Actions

Next, define appropriate actions for each of your collection plan elements. For example, when a Symptom Code results value of 265 (indicating no signal output) is entered, you can send a message to the power meter operator that says "Db reading is too low. Please move this item to the repair station." See: Defining Collection Element Actions: page 3 – 27.

Transactions

Next, associate the RF Transmitter collection plan with the WIP move transaction. The move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.

Based upon the moves shown in Figure 1 — from Final Assembly operation to Inspection, from Inspection to Repair, from Repair back to Inspection — define the following collection triggers and conditions:

- From Operation Sequence Number \leq 50 (Inspection)
- To Operation Sequence Number $>$ 50 (Inspection)

The above collection triggers and conditions accomplish the following:

- Assemblies cannot be completed into inventory from Operation 40 (Final Assembly) without passing through Operation 50 (Inspection)

- All moves into Operation 60 (Repair) trigger mandatory data collection



Attention: Multiple results entries for a serial number indicate that the item was repaired, perhaps more than once.

Specification Type

Last, assign a default specification type to the collection plan, in this case an item specification. Assigning a default specification type ensures that an appropriate specification can be chosen during quality data collection.

Data Collection

As transmitters are moved into the Inspection operation, the RF Transmitter collection plan is invoked. Because a specification type has been associate with the RF Transmitter collection plan, a specification — in this case the RF Transmitter1 specification — should be selected before data collection can begin.

The inspector is prompted for the serial number of the transmitter and for the assembler's ID (the assembler ID is noted on the routing sheet that the inspector receives along with the transmitter). Low and High Frequency default values, defaulted from the Low and High Frequency specification element target values, are automatically displayed. The inspector tests the transmitter using the suggested frequencies, then enters the corresponding Low DB and High DB results values. If both DB values are within the specification limits defined for the RF transmitter, the inspector enters the "Okay" Symptom Code and "Not Applicable" Cause and Disposition Codes. The tested transmitter can now be completed into inventory.

If however, the Low or High DB value is outside the specification limits, the message action "Item DB is outside specification. Please route item to repair station." is invoked. The inspector selects the failed Symptom Code, but because they are not mandatory, skips data entry for the Cause and Disposition Code. Once quality data collection is complete, the failed transmitter is moved to the Repair operation.

In the Repair operation, a technician determines the exact cause of the problem, fixes it, then updates the Cause and Disposition Code values using the Update Quality Results window. Once the problem is fixed the technician moves the transmitter back to the Inspection operation where the process is repeated until the transmitter passes inspection. Transmitters that pass test can be completed into inventory.

Figure 7 - 6

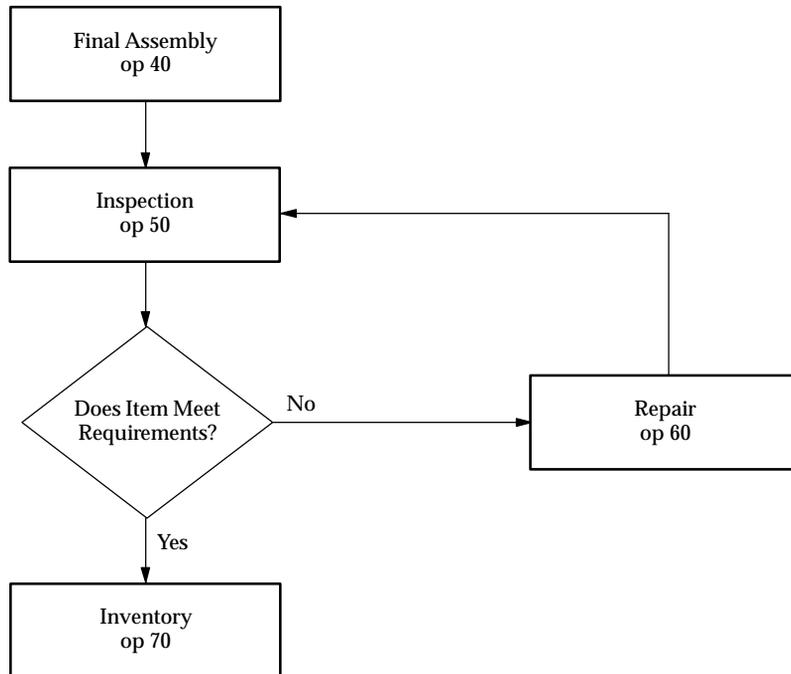


Figure 7 - 6 illustrates the process operations discussed above.

Results Analysis

You can view and report quality results in a variety of ways. You can view all results for a particular serialized item or for a particular Symptom Code = 055 (no signal output). You can also create custom reports based on your results.

You can view your results in graphical form. For example, you can create Pareto chart with using the symptom code as the X-axis element and limiting the results selected to those Cause Codes that are equal to 265. You can then create similar Pareto charts using the same Symptom Code but different Cause Codes to visualize the differences between different cause codes. Cause Codes resulting in a significant symptomatic occurrences indicates that the product or process should be redesigned.

Similarly, you can create then compare Pareto charts for one Cause Code but different Assembler IDs. You can then determine if a particular assembler is contributing to increased transmitter rejects and repairs. Once problems are identified, corrective actions — such as training or assembly process improvements — can be taken.

The identification and analysis of production problems are essential if the goal of zero defects is to be realized. Studies have shown that operator and other familiar with manufacturing processes are adept at devising solutions once they are convinced that problems do indeed exist. Pareto and other charts that graphically illustrate problems are vital to any quality improvement effort.

See Also

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Associating Transactions with Collection Plans: page 5 – 43

Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34

Associating Specification Types with Collection Plans: page 5 – 22

Viewing Quality Results: page 10 – 35

Viewing Quality Results Details: page 10 – 36

Creating and Viewing Pareto Charts: page 10 – 11

Using the Quality Results ReportWriter: page 10 – 42

Performing Move Transactions, *Oracle Work in Process User's Guide*

Yield and Quality Cost Reporting

Yield reporting is a very common measure of quality and yield, the percent of defect-free units produced, can be calculated using Oracle Quality's user-defined formulas. As director of quality at a printed circuit board (PCB) manufacturing facility, you have decided to use yield reporting and quality cost reporting, another common tool in quality analysis, in your quality program.

An important quality characteristic of a printed circuit boards in your industry is that they be free from of 'open' and 'short' defects. An open is a defect that creates a break in the circuit; a short is a defect that changes the circuit pattern. Both of these defects can be detected by an electrical test performed by a board tester. Boards that are tested and free from defects are shipped to various computer manufacturers who populate them with components before assembling them into their products.

Boards that are found to be defective during test are normally routed to a Rework operation. Rework typically involves repairing circuits by either soldering for open defects and/or cutting out circuit lines for short defects. Rework repairs are expensive and, when they happen too often, can results in escalating manufacturing costs.

Sometimes boards with intermittent defects pass final electrical test and are shipped to customers. If defective boards are used in a customer's product, not only is your product quality compromised but the customer's is compromised as well. Defective products can erode customer confidence and result in losses for all parties involved. Obviously, board quality is therefore an important issue.

Currently your the plant is experiencing an increase in quality related problems. As director of quality it is your responsibility to discuss these problems with your customers and to outline to them a program for improving product quality.

Your first step is to assemble a product quality team. The quality team's initial mission is to improve the 'circuitize' process. A typical measure of quality for this process is first pass yield which is the yield measured during the first pass, before any rework is done.

The plant produces PCBs in batches of 200 units and all units are put through electrical test. It is during test that defective units are detected. Units that fail electrical test are moved to a rework operation where rework is performed for certain defects, namely 'open' and 'short' defects. Units that are inspected and found to have either Handling or Machine damage are disposed off as scrap.

The team is also interested in another measure of process quality: determining the cost of quality. They realize that they can more readily grab management's attention by presenting an analysis of quality costs than an analysis of first pass yield. The components of quality costs, also known as internal failure costs, include rework process costs and the costs of material that go into rework and the costs of scrap. Internal failure costs are dependent on the following factors.

- The item type, whether it is core, multi-layer board etc.
- Defect code
- Defect occurrences

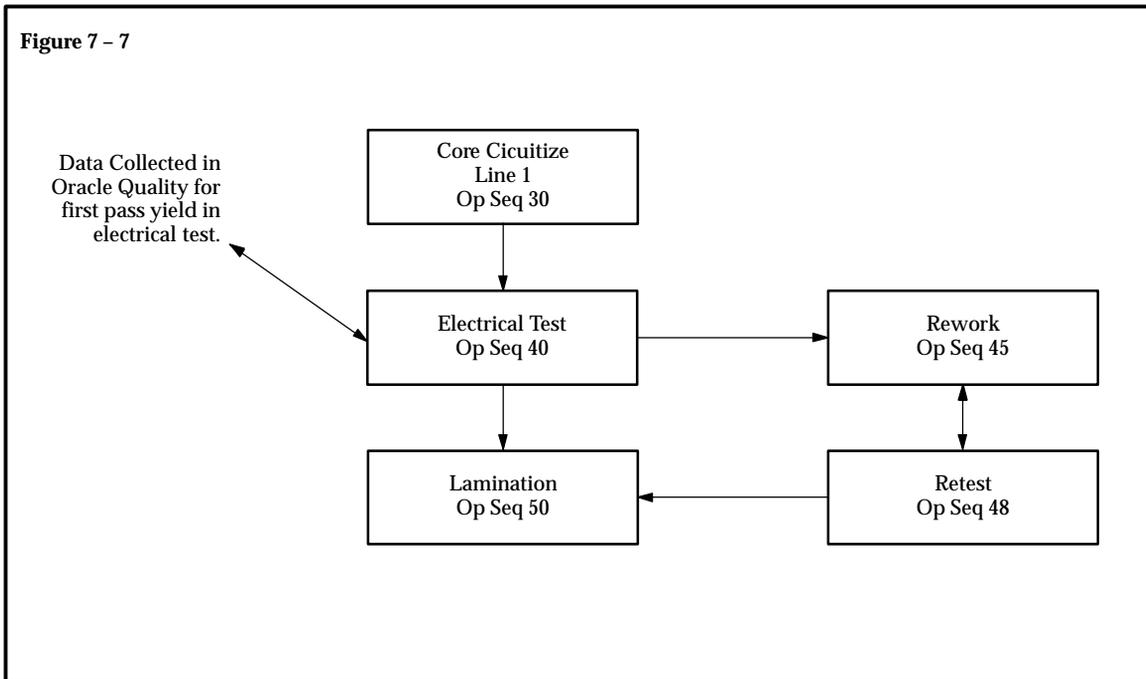


Figure 7 - 7 illustrates the process operations discussed above.

Setup

Based upon this business example, you have determined that you need to create two collection plans. The first, First Pass Yield, should include the following collection elements.

- Job
- Item

- Product Type
- Quantity Inspected
- Quantity Passed
- First Pass Yield

The second collection plan, Quality Cost, should include the following collection elements:

- Job
- Item
- Quantity Inspected
- Quantity Rejected
- Defect Code
- Total Quality Cost

Cost Table

In this example, Total Quality Cost is calculated using information stored in a custom Oracle database table that is external to Oracle Quality and Oracle Manufacturing. This table should, at a minimum include Item, Defect Code, and Defect Unit Cost columns as it is assumed that for a given Item and Defect Code there is a specific Defect Unit Cost. Total Quality Cost is calculated by multiplying the defect cost per unit by the number of occurrences.



Attention: You could also create a collection plan to collect the data that is stored in Cost Table.

Normally, such a cost table would be maintained by the costing department with input from the quality department regarding the cost of defective units. Defect Unit Costs are either the cost of scrap, when items cannot be repaired, or the cost of rework, or both. Rework costs are normally calculated based on actual labor costs and average labor time required to repair an item. Scrap costs are normally based on the cost of scrapped material and the actual labor cost incurred in the disposal of the scrapped product.

In this example, the unit costs associated with 'open' and 'short' defects are considered rework costs since items with these defects are reworked. Defects that are caused by machine and handling damage cannot be repaired and result in scrap costs. It should be noted that an item with multiple 'open' and 'short' defects can be reworked many times but can only be scrapped once.

Collection Elements

Of the collection elements listed above (for both collection plans), six (First Pass Yield, Product Type, Quantity Inspected, Quantity Rejected, Quantity Passed, and Total Quality Costs) must be defined by the user. Item and Job are context elements and data for these collection elements is automatically collected as move transactions are entered. Defect Code is a predefined collection element. See: Defining Collection Elements: page 3 – 12.

Collection Element and Collection Plan Element Values

You can define lists of values for the predefined collection element, Defect Code, and the user-defined collection elements. For example, the Defect Code list of values must include, at a minimum, the following values: 'open', 'short', 'handling damage', 'machine damage.' See: Defining Collection Element Values: page 3 – 16 and Defining Collection Plan Element Values: page 5 – 20.

Collection Plan

Next, create the First Pass Yield collection plan and add the above listed collection elements to it. All collection plan elements, except First Pass Yield, should be defined as mandatory.

Also create the Cost of Quality collection plan and add the above listed collection elements to it. All collection plan elements should be defined as displayed and mandatory.

Transactions

Next, associate the First Pass Yield collection plan with the WIP move transaction. The move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.

Based upon the fact that data collection for First Pass Yield should be invoked each time a move into or out of the Test Operation is made, define the following collection triggers and conditions:

- From Operation Sequence Number \leq 40 (Test Operation)
- To Operation Sequence Number $>$ 40 (Test Operation)

Also associate the Cost of Quality collection plan with the WIP move transaction and define the following collection triggers and conditions.

- From Operation Sequence number = 45 (Rework Operation)
- To Operation Sequence number = 48 (Retest Operation)

Again, the move transaction should be made mandatory to ensure that quality data is collected before the move transaction is saved.



Attention: The "=" condition is used when defining collection triggers for the From Operation and To operation sequences because data should be collected when boards are moved from Rework to Retest. The "<=" conditions was not used for the Rework operation because rework is not mandatory. All PCBs do not require rework and many boards that pass through the Retest Operation are found to be defect free.

Quality Actions: Calculating First Pass Yield

To calculate First Pass Yield, select the First Pass Yield collection plan and define a user-defined formula per the following steps:

1. From the Collection Plans window, select the 'Quantity Passed' collection plan element then choose the Actions button. The Quality Actions window appears.
2. In the Action Rules region, selecting the 'is entered' condition.

Note: The formula that calculates First Pass Yield should be triggered by an action rule defined for the Quantity Passed collection plan element. It is assumed that the user enters results values for Quantity Inspected, then Quantity Passed since these two values must be entered before the value of First Pass Yield can be calculated.

3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. In the 'Assign to' field, select the First Pass Yield collection plan element.
6. Select the option to assign a value using a formula (this is the default selection).
7. Enter the following formula:

$$(&QP / &QI) * 100$$

where QP and QI are tokens for collection elements
Quantity Passed and Quantity Inspected respectively

8. Choose the Variables button. The Output Variables window appears.

9. Enter the token name 'QP' for the Quantity Passed collection plan element. Also enter the token name 'QI' for the Quantity Inspected collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

When results are entered, First Pass Yield is automatically calculated using the values entered for Quantity Passed and Quantity Inspected.

Since a First Pass Yield of less than 70% indicates a severe quality problem, you can optionally define an action, such as sending a message to the quality team leader, that is triggered when this critical yield is reached.

Quality Actions: Calculating Total Cost of Quality

To calculate Total Cost of Quality, select the Cost of Quality collection plan then define a user-defined formula per the following:

1. From the Collection Plans window, select the 'Defect Code' collection plan element then choose the Actions button. The Quality Actions window appears
2. In the Action Rules region, selecting the 'is entered' condition.
3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. In the 'Assign to' field, select the Total Quality Cost collection plan element.
6. Select the option to define SQL text (formula is the default selection).
7. Enter the following formula:

```
Select &QD*unit_cost  
From cost_table  
where defect_code = &DEF and item_type = &ITEM
```

Note: QD, DEF and ITEM are tokens names (see Step 9) and unit_cost, defect_code and item_type are names of columns in the cost_table.

8. Choose the Variables button. The Output Variables window appears.

9. Enter the token name 'QD' for the Quantity Defective collection plan element, enter the token name 'DEF' for the Defect Code collection plan element, and enter the token name "ITEM" for the Item collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

When results are entered for the Cost of Quality collection plan, the collection element values for Item and Defect Code are read from the external cost table and the Total Cost of Quality is automatically calculated per the above user-defined SQL script.

Results Analysis: First Pass Yield

After a few jobs are processed in the Circuitize operation and enough sample data has been collected, the quality team can choose to analyze data either after a given number of jobs have been processed or days have elapsed or after a member of the quality team is notified that the first pass yield has dropped below the threshold level of 70%.

The team can then view and chart quality results in a variety of ways. For example:

- By item
- By product type
- By job

Data can be viewed in View Quality Results then exported to a statistics program/package and checked for differences between data sample subgroups. Statistical tests can be performed to determine differences in product types. Histograms can be created for to check for First Pass Yields differences between jobs.

The patterns of defects within subgroups can be further analyzed using Pareto charts. In this example, two important subgroups in such an analysis would be the subgroups resulting from open and short defects. Differences in subgroups should always be investigated since they reveal process anomalies that, once corrected, contribute to the continuous improvement process.

Continuous Improvement

A preliminary data analysis soon reveals that the primary cause of low first pass yields is 'open' defects. The operators performing the rework validated this conclusion when they met with quality team members.

Furthermore, these operators stated that 'open' defects occurred more frequently in core items.

Based on results of the quality teams data analysis and real-time observations, you have decided to focus your efforts on investigating the causes of 'open' defects. As part of this investigative process, you have called a meeting with the quality team and performed a cause-and-effect analysis using an Ishikawa diagram. From this brainstorming session a list of the factors that contribute to defects has been drawn. These factors include:

1. Conveyor speed
2. Concentration of Etch chemicals
3. Laminator pressure
4. Thickness of copper

Your next step is to narrow this list of factors down to just one key factor using statistical tools. First a factorial experiment, an industrial experiment that statistically analyzes the effects of various factors on product quality, is designed and executed. Then the data from this experiment is analyzed using a statistical analysis software package. Analysis reveals that conveyor speed is the major factor influencing first pass yields. Therefore the quality team recommends that conveyor speed be increased by about 20%.

After increasing the conveyor speed there is a noticeable increase in the first pass yield. Thus the team has achieved their first small step towards process improvement. To close the loop in the continuous improvement cycle, an analysis of post-process improvement data is made and plans to further reduce defects are made. This cycle of improvements is consistent with the Deming cycle for continuous improvement.

Figure 7 – 8

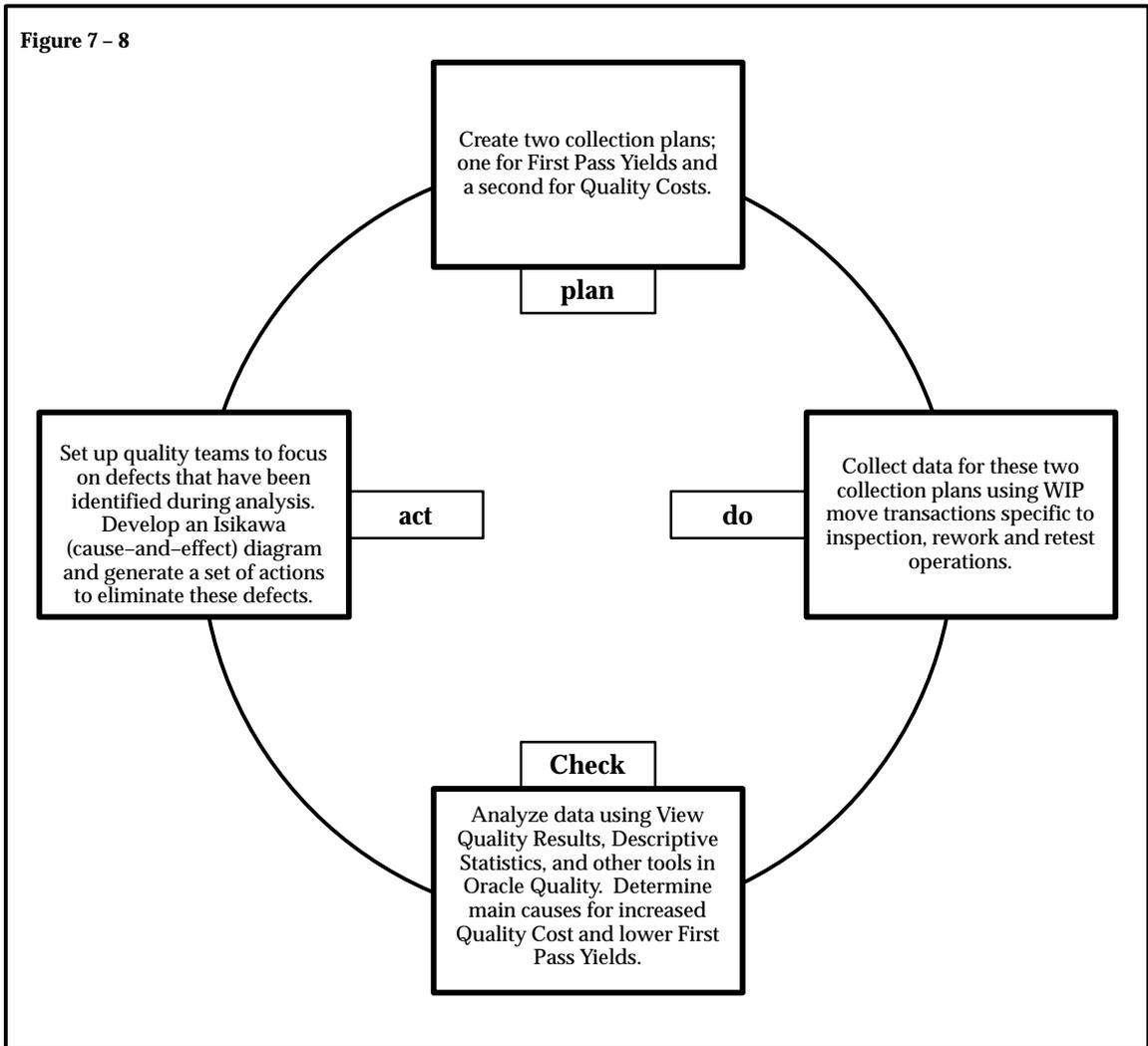


Figure 7 – 8 illustrates Deming's Circle For Continuous Improvement

Results Analysis: Cost of Quality

Using the Descriptive Statistics window, select the Cost of Quality collection plan and generate descriptive statistics using the Total Quality Cost collection plan element as the statistical element. You can generate descriptive statistics based on all or selected subgroups of data. For example, using the search capabilities of the Show Results Where region, you can select and analyze results that are specific to a

an Item, a Job, or a specific Defect Code. The statistical sums of the various subgroups represent the cost of quality.

See Also

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Associating Transactions with Collection Plans: page 5 – 43

Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34

Associating Specification Types with Collection Plans: page 5 – 22

Viewing Quality Results: page 10 – 35

Viewing Descriptive Statistics: page 10 – 32

Creating and Viewing Pareto Charts: page 10 – 11

Creating and Viewing Histograms: page 10 – 15

Performing Move Transactions, *Oracle Work in Process User's Guide*

Process Capability Study

You are the general manager for a precision sheet metal job shop specializing in high quality fabricated parts to the computer industry. Customer orders are usually large and are built-to-order by job based on customer specifications. Each part produced has several critical dimensions that should meet customer specifications. In an effort to meet high quality standards, you have implemented a quality improvement program throughout the shop

Process result for all critical dimensions are collected on the shop floor. For example, one critical dimension is the width of a rear flange that is formed on a press brake. The press brake operator measures the flange width immediately after forming the part. Measurements are randomly taken for four parts produced over the life of the job; for example, the first and last parts produced on the job as well as two from the middle might be measured. The deviation between the specified and actual flange width is calculated by subtracting the actual width from the nominal specification width stated by the specification. Although specifications can vary for each customer, the deviation specification for flange width is 2.0 +/- 0.04 units for all customers.

The immediate goal of your quality improvement program is to maintain a process capability index of at least 1.2. By agreement, process capability is to be estimated only after 40 measurements are recorded. The two Process Capability indices used most often in evaluating the relationship between the process and the customer are Cp and Cpk. They are described mathematically as follows:

$$C_p = (\text{upper spec} - \text{lower spec}) / 6 * \sigma$$

$$C_{pk} = \min \{(\mu - \text{Lower Spec}) / 3\sigma, (\text{Upper Spec} - \mu) / 3\sigma\}$$

where μ = Mean and σ = Standard Deviation

Cp measures how dispersed the data is without regard to whether the data is evenly distributed around the midpoint between the Upper and Lower Specification Limits (usually referred to as the nominal value).

Cpk weights the dispersion of data about the nominal which usually lies as a midpoint between the Upper and Lower Specification Limits. The denominator in the Cpk index indicates how much room is needed on either side of the mean to contain most of the distribution. The numerator measures the amount of room from the mean to the specification on the side where there is less room. For both Cp and Cpk, higher values are better and indicate higher process capability.

Cp depends only on the value of the standard deviation and is not affected by the relative position of the mean with respect to the nominal specification. On the other hand Cpk considers the value of the standard deviation and the mean. However, before estimating process capability the issue of statistical control should be addressed. Without statistical control, process capability estimations may prove erroneous due to the inherent instability of the process. Therefore, statistical control should be established before calculating process capability indices.

When a process is in statistical control — is operating with the minimum amount of variation possible (the variation due to common causes) — it can be expressed mathematically as follows:

$$\sigma = s = \mathbf{Rbar} / d_2$$

Using the above expression it is possible to calculate process capability using the Rbar value from a Xbar and R chart. Establishing statistical control for flange width became a priority action item. A quality team was set up in the sheet metal job shop. They established three objectives which are:

1. control the process
2. measure process capability
3. improve the process

Setup

Collection Elements

Define the user-defined collection elements Flange Width, Deviation and Machine number in collection element setup.

Collection Plan

Create a collection plan called "Rear Flange" with the following collection elements:

- Item
- Job Number
- Customer Name
- Specification
- Employee Name
- Machine Number

- Flange Width
- Deviation

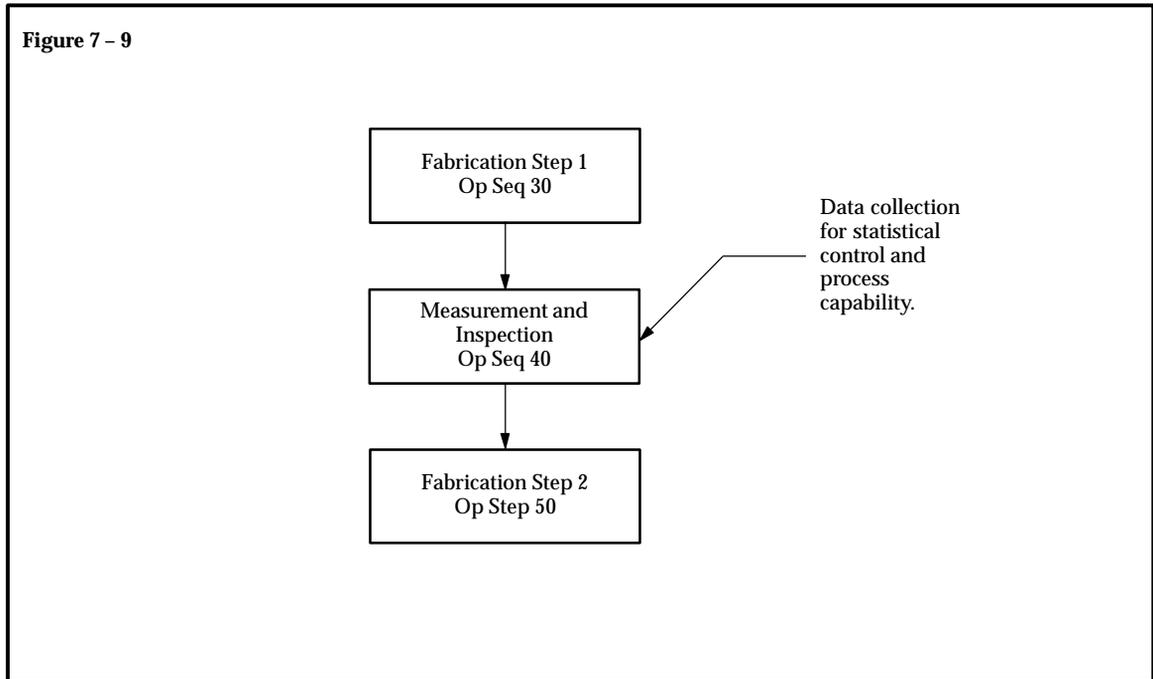


Figure 7 – 9 illustrates the process flow for the fabricated parts.

Associated Collection Transactions and Collection Plans

Choose the Transactions button in Collection Plan window. Select the move transaction and define the following collection triggers and conditions:

- From Operation Sequence Number \leq (at most) 40
- To Operation Sequence Number $>$ (greater than) 40
- Item = (equals) rear flange

Make results entry for the move transaction mandatory using the Mandatory check box.

Associated Specification Types and Collection Plans

Associate the collection plan with a customer specification using the Specification button in the Collection Plans window. This ensure that

you are prompted to select a customer specification when the collection plan is invoked as you enter move transactions.

Profile Option for Specification

The team wants to populate the collection element Specification with the specification value for Flange Width for the customer entered during data entry. This can be achieved by setting the *QA:Default Specification Target* profile option to Yes. See: Profile Options: page 2 – 9.

When the default specification value is use, the correct specification for a given customer name is automatically defaulted. The next step is to calculate the deviation of the flange reading from the specification. We use user-defined formula to calculate the deviation. The steps are as follows:

1. From the Collection Plans window, select the 'Flange Width' collection plan element then choose the Actions button. The Quality Actions window appears
2. In the Action Rules region, select the 'is entered' condition.
3. In the Actions this Rule Invokes region, select the *Assign a value* action.
4. In the Action Details region, choose the Action Details button. The Assign a Value window appears.
5. Select the Deviation collection plan element to Assign the value To.
6. Select the option to assign a value using a formula (this is the default selection).
7. Enter the following formula:
$$\&FW - \&SP$$
where FW and SP are tokens for collection elements Flange Width and Specification respectively
8. Choose the Variables button. The Output Variables window appears.
9. Enter the token name 'FW' for the Flange Width collection plan element. Also enter the token name 'SP' for the Total Quantity collection plan element.
10. Choose OK to exit both the Output Variables and Quality Actions windows.
11. Save your work.

Specification

Every customer has a different set of specifications for Flange width. Therefore for every customer a flange width specification is created in Specification setup. There were seven different customers and therefore a similar number of specifications were created. For the sake of convenience the specifications were provided with their respective customer names.

The quality team is interested in examining the control chart after 40 readings have been recorded in the collection plan.

The collection plan is now ready for collecting data. Every job containing Rear Flange triggers a collection plan where the inspector after selecting the customer specification enters readings on flange width. The team uses the View Quality Results window to see whether at least 40 records have been entered in for the Rear Flange collection plan. After two days, they realize that the requisite number of readings is available for analysis.

The team devises a plan for control chart implementation. They realize that certain considerations are paramount in initiation of a control chart including rational sub-grouping, type of chart, frequency and the type of study being conducted. Their initial conclusion is that the chart should be an Xbar and R chart.

Control Chart Analysis

An examination of the control charts reveals that the process average is not under control. This implies that the average is affected by assignable causes on several occasions:

- Three separate points above Upper control limit: point 10, 14, 17
- Three separate points below Lower control limit: point 7, 11, 15

In addition, there is excessive short term variation represented by:

$$\sigma = s = \mathbf{Rbar} / \mathbf{d_2}$$

as discussed previously. Even with an R chart in control, the manufacturing process for flange width is not constructed to meet the desired specifications.

As shown below, the pattern suggests that the process average crept upward then was probably adjusted downward. This adjustment cycle, which was repeated for a total of four cycles, is an observation worth investigating.

The inherent process capability was estimated as follows:

$$\sigma = \text{Rbar} / d_2 = 0.057 / 2.06 = 0.027$$

and 6 times the standard deviation, which is 0.162, and the specification width is 0.08 which means that the inherent variability is twice what is specified.

Figure 7 - 10

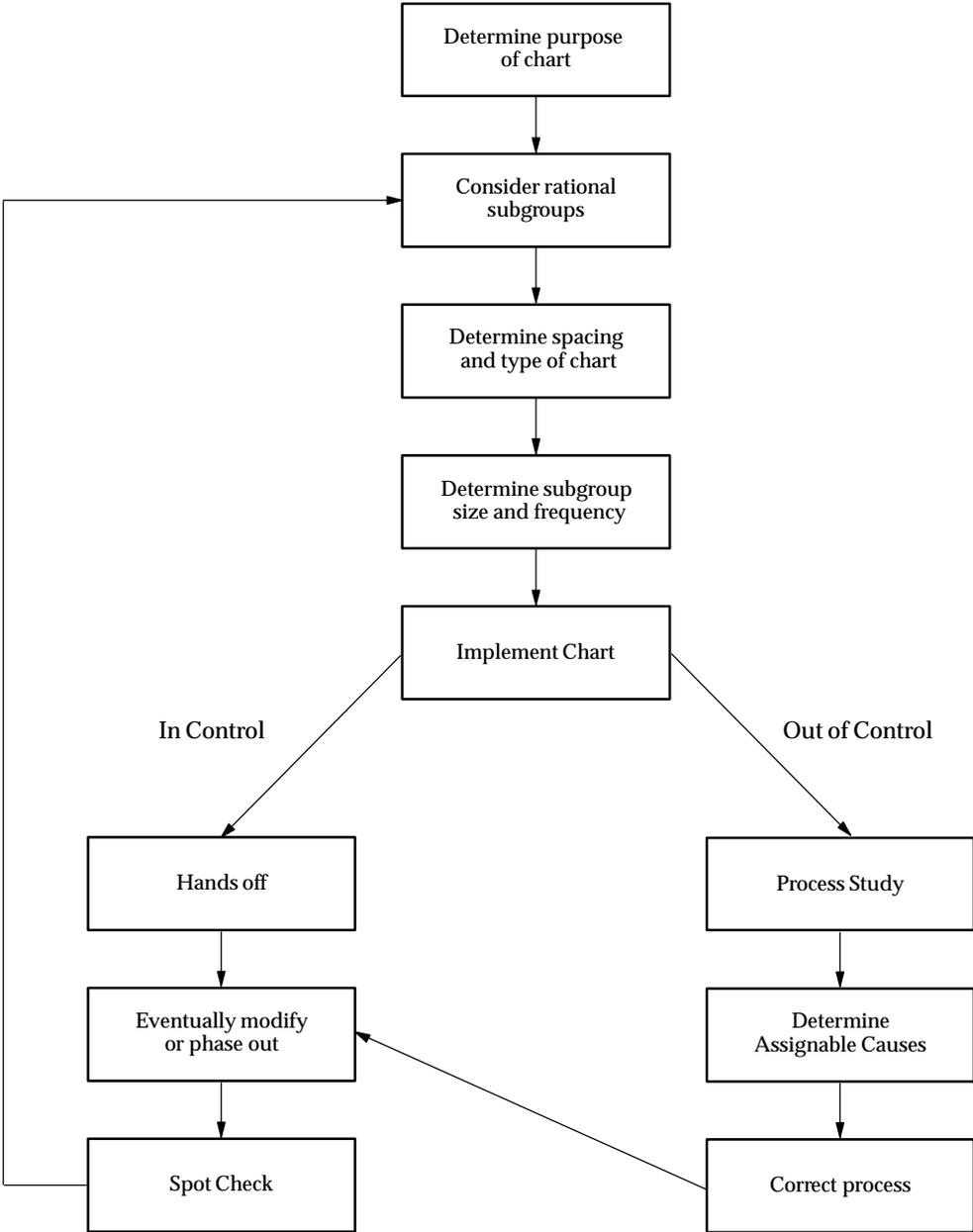


Figure 7 – 10

Two major types of investigations are needed to reduce the process variability to the stated specifications:

- What are the important assignable causes producing the shifting process average shown by the X bar control chart?

Once identified, how can improvements be effected? The control chart can be continued and watched by production personnel to learn how to control this average.

- What are the possible ways of reducing the inherent variability of the process as measured by the standard deviation?

$$\sigma = s = \mathbf{Rbar} / \mathbf{d_2}$$

Sometimes relationships between recorded adjustments made in the process and changes in the Range chart can be helpful. For example there is a suggestion that the process variation increased during point 14 to 18 on the R chart. This suggestion would usually be disregarded in routine production; however in a process capability study (which is an industrial investigation of the ability of a process to manufacture within specification) it would warrant investigation.

These two major investigations can lead to other major studies and with every study a greater understanding of process variation takes place. The quality team turns this knowledge into action items and implement them. These action items result in a predictable measure of statistical process control. With every improvement step a SPC chart is generated and process capability is remeasured and the continuous improvement cycle is repeated.

See Also

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Associating Transactions with Collection Plans: page 5 – 43

Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34

Associating Specification Types with Collection Plans: page 5 – 22

Viewing Quality Results: page 10 – 35

Creating and Viewing Control Charts: page 10 – 25

Purchasing Data Collection

This chapter describes how to manage goods and services purchased from suppliers using receipt, transfer, inspection, internal delivery, return, and correction transactions, including these topics:

- Using Oracle Quality with Oracle Purchasing: page 8 – 2
- Collection Plans for Receiving Transfers and Deliveries: page 8 – 5
- Business Example: page 8 – 13
- Supplier Product Analysis: page 8 – 13
- Entering Quality Results for Receiving Transactions: page 8 – 8
- Entering Quality Results for Receiving Inspections: page 8 – 11

Using Oracle Quality with Oracle Purchasing

In Oracle Purchasing, you can manage goods and services purchased from suppliers using receipt, transfer, inspection, internal delivery, return, and correction transactions. See: *Overview of Receiving, Oracle Purchasing User's Guide*.

By using Oracle Quality and Oracle Purchasing together, you can directly control quality at the supply end of the supply chain. You can, for example, do all of the following:

- inspect, then accept or reject, products from a supplier
- collect historical data on items, lots, and serial numbered items received from suppliers
- report failure analysis by problem and product
- place a supplier on hold when their product quality falls below a prescribed level
- place a document on hold until supplier product problems are resolved
- update a supplier's "approved supplier" status based on the quality results entered
- notify buyers automatically when an action, such as placing a supplier or a supplier's document on hold, takes place

See Also

Collection Points in Oracle Purchasing: page 8 – 2

Purchasing Versus Quality Inspections: page 8 – 3

Collection Plans for Purchasing Data Collection: page 8 – 5

Entering Quality Data for Receiving Transactions: page 8 – 8

Entering Quality Data for Receiving Inspections: page 8 – 11

Collection Points in Oracle Purchasing

In this release of Oracle Purchasing, you can collect quality data from Purchasing's Receiving Transactions window, where you can use Oracle Quality in one of two different ways:

- *Receiving Transfers and Deliveries:* You can use Oracle Quality to collect quality data on items as you transfer them internally within Oracle Purchasing, or before you deliver them to their final locations. To use Oracle Quality for Receiving Transfers or Receiving Deliveries, select the Quality button on Oracle Purchasing's toolbar in the Receiving Transactions window.
- *Receiving Inspections:* You can choose to use Oracle Quality instead of Oracle Purchasing to accept or reject item quantities in a Receiving Inspection. By using Oracle Quality in place of Oracle Purchasing, you can also collect additional quality data in your Receiving Inspection using customized collection plans. To use Oracle Quality for Receiving Inspections, you will need to first ensure that the QA:PO Inspection Profile option is set to Oracle Quality; then, when you are in the Receiving Transactions window, select the Inspect button.

See Also

Overview of Receiving Transactions, *Oracle Purchasing User's Guide*
Receiving Transactions, *Oracle Purchasing User's Guide*

Purchasing Versus Quality Inspections

If you choose to use Oracle Quality in place of Oracle Purchasing to conduct your Receiving Inspections, you will be able to perform every task that is available in a Purchasing Inspection *in addition to* some other tasks not supported in Purchasing. Quality Inspections functionality is a superset of Purchasing Inspections functionality.

Purchasing Inspections

If you use Oracle Purchasing, you can enter the number of items that were accepted or rejected items and enter information about your inspection results. You can review your inspection results on-line by receipt number, purchase order number, supplier, item, and/or transaction date range. You can also print summary and detail reports to help you analyze your suppliers' performance. Reports can be printed by buyer, supplier, and item. The receiving inspection register can be used to review your inspection results by receipt. See: *.Inspections, Oracle Purchasing User's Guide*

Quality Inspections

If you use Oracle Quality for inspections, you can collect the same data as in Purchasing plus data for any other collection elements included on the collection plan. You can create charts, descriptive statistic views, and custom reports with the data collected using Quality. Similar to Purchasing Inspections, Quality Inspections allow to Accept and Reject shipments. However, using Quality enables you to trigger additional actions based upon your inspection results.

Collection Plans for Receiving Inspections

When you decide to inspect item quantities and make a decision as to whether or not to accept or reject them, you can use Oracle Quality in place of Oracle Purchasing to conduct an inspection (called a *Receiving Inspection*).

Inspection collection plans must be associated with the Receiving Inspection collection transaction and are unique in several ways:

- Receiving Inspection collection transactions must be set as mandatory. Also, because Accept and Reject actions cannot be performed when the data collection is background, Receiving Inspection collection transactions cannot be set as background.

Note: Receiving Inspections collection plans used for Receiving Inspections must be enabled.

- Receiving Inspection collection plans must include the following collection elements:
 - Inspection Result Action
 - Quantity
 - UOM Name
 - Transaction Date

Note: These collection elements must be defined as *Displayed*, *Mandatory* and *Enabled*. If you disable any of these required collection elements or make them non-mandatory, the collection plan cannot be used for inspections.

- The 'Accept the shipment' and 'Reject shipment' actions should be associated with for the Inspection Result Action collection plan element.

To ensure that these conditions are met, when you associate the Receiving Inspection collection transaction with an enabled collection plan, the system prompts you to complete the setup. You cannot save your work until you have entered quality results or had them defaulted in.

Creating an Inspection Collection Plan from a Template

To simplify the process of creating inspection collection plans, a template collection plan, 'PO Inspection,' is pre-seeded in Oracle Quality. See: *Creating Collection Plans from Templates: 5 – 10*.

You can copy the elements from the 'Template PO Inspection' template collection plan to the inspection collection plan you have created to ensure that the required collection elements are included. The 'PO Inspection' template collection plan also includes collection elements that are not required. Once copied over to your own collection plan, you can delete those collection plan elements — Comments, Quality Code, Reason Code, Supplier Lot Number — that are copied but are not required. You can also add user-defined and additional context elements.

Specifications

You can optionally define specifications and specification sub-types. When quality data is collected, you can choose a specification to be used during quality data collection.

Collection Plans for Receiving Transfers and Deliveries

When you transfer items within Oracle Purchasing both internally (called *Receiving Transfers*) and right before delivering them to their final destinations (called *Receiving Deliveries*), you can use Oracle Quality to collect quality data on these items.

In Oracle Purchasing, you can use *Receiving Transfers* to transfer items from receiving and inspection to inventory or the shop floor, or to transfer items to different locations in the receiving and inspection area. For example, you might need to move refrigerated items from the receiving dock into a cold storage area while you are waiting to inspect them.

In Oracle Purchasing, you can use *Receiving Deliveries* to deliver items to their final destinations – for example, to deliver items in receiving and inspection to stock or expense.

Oracle Quality allows you to collect quality data on items during transfers and deliveries and trigger actions.

Collection Plan Elements

The context elements that can be added to Receiving transfer and delivery collection plans are listed in the Collection Transaction and Context Element Relationships table. See: Collection Transactions and Context Element Relationships: page 5 – 40.

You can also add user-defined collection elements to these collection plans so that you can collect data that is not dependent on the transaction itself. See: Collection Elements: page 3 – 7 and Defining Collection Elements: page 3 – 12.

Creating a Transfer or Delivery Collection Plan from a Template

To simplify the process of creating transfer and delivery collection plans, a template collection plan, 'Template PO Receiving,' is pre-seeded in Oracle Quality. See: Creating Collection Plans from Templates: page 5 – 10.

You can copy the elements from the 'PO Receiving' template collection plan to the transfer or delivery collection plan you have created to ensure that certain collection elements are included. Once copied over to your own collection plan, you can delete certain collection elements that are copied. You can also add user-defined collection elements to these collection plans.

Actions

You can specify actions specific to purchasing transactions in your collection plan. See: Application Specific Actions: page: page 3 – 21 However, when you are creating a collection plan for a receiving transfer or delivery, we suggest that you not include the 'Accept the Shipment' or 'Reject the Shipment' actions as these actions have no effect in a receiving transfer delivery.

In addition to these actions, you can add message actions, alert actions, and actions that determine a value base on a user-defined formula. See: Quality Actions: page 3 – 20, Message Actions: page 3 – 20, Alert Actions: page 3 – 21, and User-Defined Actions: page 3 – 21.

Collection Transactions and Collection Triggers

The *Receiving Transaction* collection transaction must be associated with the collection plans you use for receiving transactions. Also, Receiving Transactions collection plans used for Receiving Transfers or Receiving Deliveries must be enabled.

You can make the entry of quality data mandatory for the receiving transaction by setting its Mandatory option. If data entry is required, you cannot save the parent transaction, in this case the receiving transaction, without entering quality data. See Mandatory Data Collection: page 6 – 7.

You can also specify that data should be collected in the background. See: Background Data Collection: page 6 – 8.

You can define one or more collection triggers for each collection transaction. Collection triggers allow you to specify the conditions under which quality data collection is invoked as receiving transactions are entered.

See Also

Overview of Oracle Quality: page 1 – 6

Defining Specifications: page 4 – 7

Creating Collection Plans: page 5 – 13

Entering Quality Results for Receiving Transfers and Deliveries

This section describes how you can use Oracle Quality for Receiving Transfers or Receiving Deliveries.

If Oracle Quality is installed and at least one collection plan that is associated with the *Receiving transaction* exists, the Enter Quality Results Special Menu option and the Quality button are enabled and quality results can be entered.



Warning: The Special Menu option is enabled even if, based upon the transaction information entered, the collection triggers conditions for this collection plan are not met.

In fact, based upon the receiving transaction entered, quality results entry may be required. See: Mandatory Data Collection: page 6 – 7.

Background data collection occurs automatically if valid background collection plans are found when you save receiving transactions.

Cascade, Express, and Lot and Serial Functions

The *Cascade* function, which distributes a receiving transaction quantity to multiple lines, is compatible with Oracle Quality. Quality enforces quality data collection as you enter each line. See: Cascading Receipts and Receiving Transactions, *Oracle Purchasing User's Guide*

To save Receiving Transactions quickly and automatically with a minimal amount of data entry, you can choose the *Express* button to put Oracle Purchasing in *Express mode*. However, when you are in Express mode, Oracle Purchasing prevents you from manually entering data for those collection elements that you have defined as mandatory in Oracle Quality. For this reason, choosing the Express button disables the toolbar's Quality button, as well as the Enter Quality Results Special Menu option.

Lot and serial entry quality data collection is not enabled in this release.

Prerequisites

- Define the relevant collection plan in Oracle Quality, enable it and associate it with a Receiving Transaction.
- Enter receiving transaction line and transaction detail information but *do not save your work*. See: Enter Receiving Transaction, *Oracle Purchasing User's Guide*.

► **To enter receiving quality data for receiving transactions:**

1. Before saving your work, choose Enter Quality Results from the *Special Menu* or choose the Quality button. The Find Collection Plans window appears.



Attention: If you attempt to save a receiving transaction and the system finds one or more mandatory collection plans, you must enter quality results before proceeding.

2. Navigate to the Enter Quality Results window. The first applicable plan will appear by default.
3. Select a collection plan.

To switch to another plan, choose one from the selections in the List of Values (LOV). You can select any collection plan that is associated with and enabled for the *Receiving Transaction* collection transaction.

► **To find and assign specifications:**

1. If the selected collection plan is associated with a supplier or customer specification type, the Find Specifications window automatically appears. If the selected collection plan is associated with an item specification type, the system searches for a specification defined for that item. If a valid item specification cannot be found, the system searches for a specification based on the item's category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: *QA:Quality Category Set*: page 2 – 10.

If the collection plan is not associated with a specification type, you can invoke the Find Specifications window using the Find Specs button. See: *Finding Specifications During Transactional Data Collection*: page 6 – 22.

The Enter Quality Results window reappears after you select a specification or cancel selection.

► **To enter quality results:**

1. In the Results region of the Quality Results window, enter one or more results records.

If the collection plan selected requires mandatory data collection, you must enter quality results. You cannot save the receiving transaction line until you do so. If data collection is not mandatory, you can skip quality results entry.



Attention: The Prompts entered when defining the collection elements are displayed as the column headings.

You must enter results values for mandatory collection plan elements.

2. Save your work. See: *Saving Your Work, Oracle Applications User's Guide*.

If you save your work, the current results are cleared and the Collection Number counter is incremented. You can continue to enter results for the same collection plan and, if assigned, specification.

► **To view collection plan or specification attachments while entering quality data:**

- See: *Viewing Attachments Associated with Quality Results: page 6 – 14*.

See Also

Transactional Data Collection Fundamentals: page 6 – 4

Entering Quality Results Directly: page 6 – 10

Entering Quality Results for Receiving Inspections

This section describes how you can use Oracle Quality for Receiving Inspections.

If you have Oracle Quality installed, you have the option of entering receiving inspection information using the Inspections window in Oracle Purchasing or the Enter Quality Results window in Oracle Quality.



Warning: The Inspection button is enabled even if, based upon the transaction information entered, the collection triggers conditions for this collection plan are not met??

Background data collection cannot be used when entering quality results for receiving inspection.

Data collection is mandatory for receiving inspections since you must opt to either accept or reject items and cannot save your receiving transaction information without doing so. See: Mandatory Data Collection: page 6 – 7.

Prerequisites

- Define the relevant collection plan in Oracle Quality, enable it and associate it with a Receiving Inspection transaction.
- Set the *QA:PO Inspection* profile option to Oracle Quality
- Enter a receiving transaction. See: Enter Receiving Transaction, *Oracle Purchasing User's Guide*

► **To enter quality results as you enter receiving transactions:**

1. Before saving the line, choose the Inspect button. The Enter Quality Results window appears.

When you select the Inspect button, the system searches for all applicable inspection plans; the plan which comes first alphanumerically will appear by default. See: Associating Transactions with Collection Plans: page 5 – 43.



Attention: Only one collection plan will appear in the Enter Quality Results window.

2. If selected the collection plan is associated with a supplier or customer specification type, the Find Specifications window automatically appears.

If the selected collection plan is associated with a item specification type, the system searches for a specification defined for that item. If a valid item specification cannot be found, the system searches for a specification based on the item's category. The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: *QA:Quality Category Set*: page 2 – 10.

If the collection plan is not associated with a specification type, you can invoke the Find Specifications window using the Find Specs button. See: *Finding Specifications During Transactional Data Collection*: page 6 – 22.

After selecting a specification, the Enter Quality Results window appears.

► **To enter quality results values:**

1. In the Results region of the Quality Results window appears, enter one or more results records.

If the data collection for the collection plan selected is mandatory, you must always enter quality results.



Attention: The Prompts entered when defining the collection elements are displayed as the column headings.

You must enter results values for mandatory collection plan elements. See: *Context Element Dependencies*: page 5 – 7.

2. Save your work. See: *Saving Your Work, Oracle Applications User's Guide*.

► **To view collection plan or specification attachments while entering result values:**

- See: *Viewing Attachments Associated with Quality Results*: page 6 – 14.

See Also

Entering Quality Results Directly: page 6 – 10

Business Example

The following example describes how you might use Oracle Quality with Oracle Purchasing. This example illustrates a common application of Oracle Quality in the area of Purchasing control.

Supplier Product Analysis

Your company manufactures refrigerators. Your receiving department conducts inspection (receiving inspection) on components that are purchased, among them: compressors, plastic parts, and steel shelves.

Let's consider a representative purchased part — a plastic pan cover for a refrigerator. The inspection process could be as follows:

1. Purchased parts are staged in the receiving area.
2. Inspector retrieves part file to conduct the inspection. Part file contains the following:
 - a current engineering drawing
 - a control plan which describes the sample size, dimensions to measure and gauges to use, critical attributes such as color and smooth edges, and other applicable information. (example below)

The following table delineates the specifications to which your item should adhere:

Part Number: 1107943				
Description		Pan Cover		
Sample Size		5 pieces per shipment		
Specification	Location	Method	Sample 1	Sample 2
length: 17.000 +/- 0.05 in.	G3	24" caliper	17.015 in.	16.999 in.
radius: 0.250 +/- 0.005 in.	H5	radius gauge	0.250 in.	0.252 in.
diameter: 1.625 +/- 0.05 in.	H1	3" caliper	1.622 in.	1.625 in.
check for scratches	A2	visual appearance	OK	OK

Table 8 - 1 (Page 1 of 1)

Setup in Quality

Based upon the above information, you have determined that you must create a collection plan that includes the following collection elements:

- Item
- Supplier
- Quantity
- Transaction Date
- UOM Name
- Inspection Result
- Sample Size
- Length
- Radius
- Diameter
- Appearance

Collection Elements

Four of the collection elements listed above (Quantity, Transaction Date, UOM Name and Inspection Result) are pre-seeded and mandatory for all inspection plans. Two of the collection elements listed above are also pre-seeded context elements (Item and Supplier). Five of them (Sample Size, Length, Radius, Diameter and Appearance) will have to be user-defined.

Specifications

Create an item specification, pan cover, specifically for the pan cover. Add the collection elements length, radius and diameter to the specification and specify that they conform to the requirements delineated above in Table 8-1.

Collection Plan

Next, create a Receiving Inspection collection plan called "Supplier Quality". The collection plan can be assigned any collection plan type.

Your collection plan should contain the collection elements listed above. You should define all of them to be displayed. You must define the four required collection elements (Quantity, Transaction Date, UOM Name and Inspection Result) to be both mandatory and enabled.

Note: Copying collection elements from the template collection plan: Template PO Inspection will ensure that the required collection elements are included.

Collection Plan Element Actions

For all Receiving Inspection collection plans, you must associate two actions ('Accept the shipment' and 'Reject the shipment') with the collection element called Inspection Result Action.

Next, define appropriate actions for your other collection plan elements. For example, you can associate actions for the collection elements length, radius and diameter which fire when the length, radius or diameter do not fall within the specifications you define. For example, you can define an action which, when the length is not within your specification, displays the message: "Reject the item", or "Remeasure the length". See: Defining Collection Element Actions: page 3 – 27.

Inspection Transactions

Next, associate the Supplier Quality collection plan with the Receiving Inspection transaction. The Receiving Inspection must be both enabled and mandatory to ensure that quality data is collected before the receiving transaction is saved.

After you have finished setting up your collection plan in Quality and associated it with a Purchasing transaction, navigate to Oracle Purchasing. You can conduct your inspection by selecting the Inspect button in Purchasing's Receiving Transactions window. This will enable you to collect quality data for the elements defined in your 'Supplier Quality' collection plan.

Note: Before you can view and analyze your quality results, the PO Transaction Processor must *successfully* process and deliver your inspection input.

Results Analysis

Once a representative sample of data is collected, you can analyze the data using a trend chart to determine which suppliers are lowering your overall product quality.

To do this you can create a trend chart using the length, radius or diameter as the Y-axis element (element to be analyzed). You can create charts showing all the following:

- trends over time of the dimension specifications for all suppliers

- trends over time of the dimension specifications for specific suppliers

Periodic analysis of the data will reveal any trends pertaining to product quality. For example, you may observe a drift in diameter over time. If different suppliers supply the same item, your Oracle Quality analysis can reveal if one can maintain closer tolerances than the other.

See Also

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Associating Transactions with Collection Plans: page 5 – 43

Defining Actions that Assign a Value: User-Defined Formulas: page 5 – 34

Associating Specification Types with Collection Plans: page 5 – 22

Viewing Quality Results: page 10 – 35

Viewing Quality Results Details: page 10 – 36

Creating and Viewing Pareto Charts: page 10 – 11

Using the Quality Results ReportWriter: page 10 – 42

Enter Receiving Transaction, *Oracle Purchasing User's Guide*

Service Data Collection

This chapter describes how to create service and warranty programs, enter and manage service requests, and manage the repair of damaged goods, including these topics:

- Using Oracle Quality with Oracle Service: page 9 – 2
- Collection Points in Oracle Service: page 9 – 2
- Business Example: page 9 – 6
- Automotive Service Requests: page 9 – 6
- Entering Quality Results for Service Requests: page 9 – 9

Using Oracle Quality with Oracle Service

In Oracle Service you can create service and warranty programs, enter and manage service requests, and manage the repair of damaged goods. See: Overview of Oracle Service, *Oracle Service User's Guide*.

By using Oracle Quality and Oracle Service together you can directly control quality at the customer end of the supply chain. You can, for example, do all of the following:

- save valuable information about service calls
- analyze this data to determine trends in the service levels
- extends Oracle Service reporting and analysis capabilities by using Oracle Quality charts

Integrating Oracle Quality and Oracle Service improves customer service and reduces overall quality costs.

See Also

Collection Points in Oracle Service: page 9 – 2

Service Request Organizations: page 9 – 3

Collection Plans for Service Data Collection: page 9 – 3

Entering Quality Data for Service Requests: page 9 – 9

Collection Points in Oracle Service

In this release of Oracle Manufacturing, quality data can be collected as you enter service requests. Service requests help you to record and track customer inquiries regarding difficulties either using the product, understanding the product or with the functioning of the product. Service requests can also be used to log requests for clarification of documentation, track the resolution of implementation issues, and monitor product upgrade information.

Service Requests, entered in the Service Requests window, are used to do all of the following:

- Record customer information quickly
- Define the customer's request for service
- Define service request status, types, severity, and urgency

- Verify service programs or warranties on line
- Confirm customer information; name, number service coverage, product, system, or serial number
- Provide an audit trail of service request changes
- Assign problem and resolution codes to each service request
- Define service request and product linkage
- Display each service request in summary or detail format
- Link service requests

Service Request Organizations

The default organization for Oracle Service is determined by which organization is specified for the OE: Item Validation Organization profile option. Oracle Service uses this organization when service requests are entered. Therefore when quality results are collected for a service request, Oracle Quality also uses this organization. Since this code represents an operational unit and is more encompassing than what a manufacturing organization covers, Oracle Quality will use the operation unit from Service in which to define collection plans and collection elements and to record quality results. However, if for some reason, Profile is not set, Oracle Quality retrieves this information from 'Manufacturing_Org_Id' from the table CS_SYSTEM_PARAMETERS. See: Setting Up Service Parameters, *Oracle Service User's Guide* and Setting Up Service Parameters, *Oracle Service User's Guide*.

Service Request Collection Plans

Services differs from Purchasing and WIP in the way it invokes the Quality interface. The parent transaction can be in one of two states namely single-row-block or multi-row-block:

In case of single-row, it is implicit that this is a new service request and therefore one can assume that there are no prior results associated with it.

Collection Plan Elements

You can add context elements to service request collection plans. You can also add user-defined collection elements to your service request collection plans.

See: Reference Information Collection Elements: page 3 – 7 and

Collection Transactions and Context Element Relationships: page 5 – 40.

Actions

You can add quality actions to service request collection plans then define the rules that determine when these actions are to be invoked. See: Quality Actions: page 3 – 20

Although there are no actions that are specific to service requests at this time, you can add message actions, alert actions, and actions that determine a value base on a user-defined formula as required. See: Message Actions: page 3 – 20, Alert Actions: page 3 – 21, and User-Defined Actions: page 3 – 21.

Collection Transactions

You must associate the service request collection transaction to service request collection plans. You can optionally associate more than one type of collection transaction with a collection plan. See: Associating Transactions with Collection Plans: page 5 – 43.

You can make the entry of quality data mandatory for the service request collection transaction by setting its Mandatory option. If data entry is required, you cannot save the parent transaction, in this case the service request collection transaction, without entering quality data. See: Mandatory Data Collection: page 6 – 7.

You can also specify that data should be collected in the background. As you save the service request, the system searches for valid background collection plans. Valid collection plans are those that are associated with the Service Request collection transaction and are set to background data collection. See: Background Data Collection: page 6 – 8.

You can define one or more collection triggers for each collection transaction. Collection triggers allow you to specify the conditions under which quality data collection is invoked as transactions are entered.

Collection Triggers

You can define one or more collection triggers for each collection transaction. Collection triggers allow you to specify the conditions under which quality data collection is invoked as service requests collection transactions are entered and updated.

See Also

Overview of Oracle Quality: page 1 – 6

Defining Collection Elements: page 3 – 12

Defining Specifications: page 4 – 7

Creating Collection Plans: page 5 – 13

Quality Actions: page 3 – 20

Quality Collection Transactions: page 5 – 39

Entering Quality Results for Service Requests: page 9 – 9

Business Example

The following example describe how you might use Oracle Quality with Oracle Service to analyze service data. In addition to analyzing customer service behavior, your analysis of service data can also yield valuable information which you can use to improve both the quality of products and of customer service.

Photocopier Service Requests

As the Service Manager for a manufacturer of photocopiers, you are seeking ways to improve the quality of your product, while, at the same time, reducing expenses and managing costs.

Your call center receives telephone calls from customers calling to report a problem with a particular product or to seek information regarding its use. A service call is then made to repair the product. The record of such a service request may include the following information:

- Customer Name
- Product affected
- Problem reported by customer
- Resolution to the problem as reported by the service person

Setup

Oracle Quality will enable you to set up a collection plan to collect the following information:

- Products which have the most frequent service requests logged against them
- Customers who log the most frequent service requests
- Problem codes with the most service requests logged against them
- Resolution codes with the most service requests

Collection Elements

You should define the following collection elements. See: Collection Elements: page 3 – 7.

- Product (item)

- Customer
- Problem Code
- Urgency
- Severity
- Resolution Code
- Request Date
- Date Closed
- Expected Resolution Date
- Actual Resolution Date

The following collection elements, though not required, will also yield useful reference information:

- Owner
- RMA Number

Specifications

No specification is required.

Collection Plan

Next, create a collection plan called "Service Request", containing the collection elements listed above.

Note: Copying the collection elements from the template collection plan called Template Service Request will ensure that the required collection elements are included in your collection plan.

Transactions

Next, associate the Service Request transaction with your collection plan. You should enable this transaction and make it mandatory. See: Associating Transactions with Collection Plans: page 5 – 43

Triggers

Each time the parent transaction is saved, the pertinent collection elements will be updated in the collection plan.

Results Analysis

You can construct a pareto chart to check which customers account for the most service requests. You can also use a pareto chart to find other

information, such as the five models which account for the most service requests. Or, to reveal other information, you could construct a trend chart of problem codes over time, to see which parts' replacement rates are abnormally high.

See Also

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Entering Quality Results for Service Requests

If Oracle Quality is installed and at least one collection plan that is associated with the *Service Request* exists, the Enter Quality Results Special Menu option and the Quality button are enabled and quality results can be entered.



Warning: The Special Menu option is enabled even if, based upon the transaction information entered, the collection triggers conditions for this collection plan are not met.

In fact, based upon the service request information entered, quality results entry may be required. See: Mandatory Data Collection: page 6 – 7.

Background data collection occurs automatically if valid background collection plans are found when you save service requests. The Enter Quality Results window is not displayed during background collection. See: Background Data Collection: page 6 – 8.

You can update and delete quality results as you enter and view service request information.

Prerequisites

- Enter all service request information. See: Entering Service Requests, Oracle Service User's Guide.

► **To enter quality results as you enter service requests:**

1. Before saving your work, choose Enter Quality Results from the *Special Menu* or choose the Quality button. The Find Collection Plans window appears



Attention: If you attempt to save a service request and the system find valid collection plans that are defined as mandatory, you must enter quality results before you can save the transaction. Valid collection plans in this case are those that are associated with the Service Request collection transaction and for which all collection triggers are evaluated as true.

2. Select a collection plan. The Enter Quality Results window appears.

You can select any collection plan that is enabled, that is associated with the service request collection transaction, *and* for which the transaction's triggers evaluate to TRUE. If the triggers evaluate to FALSE for a particular collection plan, you will not be able to access or select that plan. Of those collection plans for which the

triggers evaluate to TRUE, the first one (in alphanumeric order) will default directly into the Enter Quality Results Window.

► **To find and assign specifications:**

- If the selected collection plan is associated with a supplier or customer specification type, the Find Specifications window automatically appears on top of the Enter Quality Results window.

If the selected collection plan is associated with a item specification type, the item on the service request transaction is used to derive the specification. If no specification for that item can be found, the system searches for a specification based on the item's category.

The default category set you defined using the *QA:Quality Category Set* profile option is used to determine the item category. See: QA:Quality Category Set: page 2 – 11.

If the collection plan is not associated with a specification type, you can invoke the Find Specifications window using the Find Specs button. See: Finding Specifications During Transactional Data Collection: page 6 – 22.

The Enter Quality Results window reappears after you select a specification or cancel selection.

► **To enter quality results:**

1. In the Results region of the Enter Quality Results window, enter one or more results records.

If the collection plan selected requires mandatory data collection, you must first enter quality results and then save the service request. You cannot save the service request until you do so. If the collection plan selected does not require mandatory data collection, you will not be able to navigate to Oracle Quality.

Depending on the collection plan and its elements, you can use several mechanisms to speed data entry.

Default value: Default values, if defined, are automatically displayed. They can be overridden. See: Default Value Assignment Rules: page 6 – 5.

Lists of Values: You can choose results values from a list of values if defined. See: Defining Collection Plan Element Values: page 5 – 20 and .

Duplication: You can duplicate fields and records. Duplicated records and fields can be changed as required. See: *Duplicating Data From a Previous Record, Oracle Applications User's Guide.*



Attention: The Prompts entered when defining the collection elements are displayed as the column headings.

You must enter results values for mandatory collection plan elements. See: *Context Element Dependencies: page 5 – 7.*

2. Save your work. See: *Saving Your Work, Oracle Applications User's Guide.*

► **To view collection plan or specification attachments while entering result values:**

- See: *Viewing Attachments Associated with Quality Results: page 6 – 14.*

See Also

Transactional Data Collection Fundamentals: page 6 – 4

Entering Quality Results Directly: page 6 – 10

Charts, Views, and Custom Reports

This chapter explains how to chart, view, and report quality results data, including these topics:

- Quality Results Analysis: page 10 – 2
- Oracle Quality’s Integration with Statit: page 10 – 2
- Pareto Charts: page 10 – 11
- Histograms: page 10 – 15
- Trend Charts: page 10 – 19
- Statistical Process Control: page 10 – 23
- Control Charts: page 10 – 25
- Cp and CpK: page 10 – 30
- Viewing Descriptive Statistics: page 10 – 32
- Viewing Quality Results: page 10 – 35
- Viewing Quality Results by Lot Number: page 10 – 38
- Viewing Quality Results by Serial Number: page 10 – 40
- Using the Quality Results ReportWriter: page 10 – 42
- Viewing and Deleting Action Log Entries: page 10 – 45
- Exporting Quality Results: page 10 – 47

Quality Results Analysis

You can chart quality results using Pareto Charts, Trend Charts, Control Charts, and Histograms. You can use the View Descriptive Statistics window to calculate basic statistics (sum, mean, variance, standard deviation, total number of occurrences, number of null occurrences, maximum, minimum, and range) on them. You can also use the Quality Results ReportWriter to create custom reports. The quality results that you view, chart, and include in reports can be exported for further analysis.

You can optionally choose to use the graphical capabilities of either Oracle Quality or Statit, the Statistical Quality and Process Control package from Statware Inc.

Integrating Oracle Quality and Statit

By integrating Oracle Quality with Statit's Statware, you can seamlessly complement and extend Oracle Quality's functionality. When the two products are integrated you use Oracle Quality to collect and query collected data then use Statit's sophisticated charting capabilities to chart and analyze this data.

Additional Information: For information on the functionality and use of Statware's Statit, please refer to the *Statit User's Guide*.

Prerequisites

You can integrate Oracle Quality and Statit only if Oracle Quality Release 11 and Statware's Statit package (v5.1) are installed:

► **To enable Statit's statistics engine in Oracle Quality:**

1. Log in to Oracle Applications and choose the Quality responsibility
2. Navigate to the Personal Profile Options window.
3. Query to find the Quality profile options.
4. Set the QA:Statistics Engine to 'Statit'.
5. Set QA:Statistics Engine Path profile option to indicate where Statit was installed on the client machine.

► **To use Statit's statistical analysis capabilities:**

1. Collect data in the normal manner. See: Data Collection Options: page 1 – 8.
2. Find quality results for analysis using the Show Results Where region in the Pareto Charts, Histograms, Control Charts, Trend Charts, or Descriptive Statistics window. See: Finding Quality Results: page C – 2.
3. Invoke Statit to analyze the queried results by choosing the Statit button.

Note: When the Statit integration is enabled, the name of the View Charts button in the Pareto Charts, Histograms, Control Charts, Trend Charts windows changes to Statit. Similarly, in the Descriptive Statistics window, the name of the Statistics button changes to Statit. In all windows that you can export data from, the name of the Export Special Menu Option changes to Export to Statit.

► **To export results to Statit:**

- See: Exporting Quality Results: page 10 – 47.

Note: When the Statit integration is enabled, the name of the 'Export' Special Menu option changes to 'Export to Statit'.

► **Disabling the integration to Statit:**

1. Log in to Oracle Applications and choose the Quality responsibility
2. Navigate to the Personal Profile Options window.
3. Query to find the Quality profile options.
4. Set the QA:Statistics Engine to 'Oracle Quality'.
5. Remove the path name from the QA:Statistics Engine Path profile option.

See Also

Creating and Viewing Pareto Charts: page 10 – 11

Creating and Viewing Histograms: page 10 – 15

Creating and Viewing Trend Charts: page 10 – 19

Creating and Viewing Control Charts: page 10 – 25

Viewing Descriptive Statistics: page 10 – 32

Copy Settings

You can view the same subset of data in different ways using the Copy Settings function. Copy Settings copies the saved settings from a source chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. The "settings" that are copied include the collection plan and the record selection criteria, and, depending on the source chosen, may also include the primary collection element, specification limits, or both.

You can change all of the settings that are copied — the primary collection element, selection criteria, control limits (where applicable), and the specification (where applicable) — except the collection plan.

Example: Copying Settings from a Trend Chart to a Pareto Chart

This example explains how to create settings for a source Trend Chart then apply these settings to a destination Pareto chart.

Creating the Source Chart

Using the Trend Charts window, create a trend chart called *Jones Trend* using the *WIP Defects* collection plan. The *WIP Defects* collection plan has several collection plan elements assigned to it among which are Defect Code, Inspector ID, and Entry Date.

Specify that the Defect Code collection element is to be the primary (Y-axis) Collection Element and Entry Date is to be the Group By (X-axis) collection element. To chart only those quality results that inspector Jones has entered since 01-JAN-1996 and that have a Defect Code of 40 or greater, enter the following record selection criteria in the Show Results Where region of the Trend Chart window:

Inspector ID *equals* 'Jones' and Defect Code *at least* '40' and Entry Date *at least* '01-JAN-1996'

View the trend chart by choosing the View Chart button, then save the settings for the *Jones Trend* chart by choosing the Save Settings button.

Creating the Destination Chart

To create a new Pareto chart using the saved settings from *Jones Trend*, navigate to the Pareto Charts window.

Do *not* enter a Chart Name. Instead, choose the Copy Settings button to invoke the Copy Settings From list of values. This list includes the names of all charts, reports, and descriptive statistic views for which settings have been saved.

Select the Source chart, *Jones Trend*, from the list and choose OK. The following settings are copied from the source chart to the new chart:

- Collection plan: WIP Defects
- Show Results Where record selection criteria: Inspector ID *equals* 'Jones' and Defect Code *at least* '40' and Entry Date *at least* '01-JAN-1996'
- Primary (X-axis) collection element: Defect Code



Attention: In this example, the Defect Code collection element (primary X-axis collection element) is copied to the X-axis Element (primary collection element) of the new chart. The non-primary Y-axis collection element, Group By, is not copied.

Finish creating your chart by choosing a Y-axis Element and optionally entering the chart name, *Jones Pareto*, and chart title. View the Pareto chart by choosing the View Chart button. If you have entered a chart name you can save the settings for *Jones Pareto* by choosing the Save Settings button.

Copied Settings

The specific settings copied from a source report, chart, or descriptive statistic view to a destination report, chart, or descriptive statistic view depend on the source chosen and the destination specified. Not all the settings saved for a source may be applicable to the destination. Conversely, the settings of a source may not include some settings required by the destination.

For example, you can use Copy Settings to copy all the information associated with a source descriptive statistics view — its collection plan, primary collection element, selection criteria, control limits, and specification — to a destination descriptive statistic view. However, if you use Copy Settings to copy from a source descriptive statistics view to a destination Pareto chart, information that is not applicable to Pareto charts, in this case the specification and control limits, is lost. The following table illustrates the later case:

Settings	Source: Descriptive Statistics View	Destination: Pareto Chart
Collection Plan	✓	✓
Primary Collection Element	✓	✓ (X-axis element)

Settings	Source: Descriptive Statistics View	Destination: Pareto Chart
Control Limits	✓	Not applicable
Specification	✓	Not applicable
Selection Criteria	✓	✓

Table 10 – 1 Copy Settings: Descriptive Statistic View to Pareto Chart (Page 2 of 2)

Conversely, if you Copy Settings from a source Pareto chart to a destination descriptive statistics view, the control limits and specification are not copied because they do not exist for the source. In such a case, you would need to enter control limits and select a specification for the destination descriptive statistics view. The following table illustrates this case:

	Settings Copied From Source (Pareto Chart)	Setting Copied To Destination (Descriptive Statistic View)
Collection Plan	✓	✓
Primary Collection Element	✓ (X-axis element)	✓
Control Limits	None	Required
Specification	None	Required
Selection Criteria	✓	✓

Table 10 – 2 Copy Settings: Pareto Chart to Descriptive Statistic View (Page 1 of 1)

Also, as noted above, Copy Settings copies only the primary collection element, if one exists, from a source to a destination. *Primary collection elements* represent those collection elements that are being graphed or those collection element for which statistics are being collected. If you are copying from a source whose primary collection element is plotted along the X-axis to a destination whose primary collection element is plotted along the Y-axis, the source's X-axis collection element is mapped to the destination's Y-axis collection element. Non-primary axis collection elements are not copied.

The following table describes what source data is associated with the various charts, custom reports, and descriptive statistic views:

	Collection Plan	Primary Collection Element	Control Limits	Specification	Selection Criteria
Histogram	✓	✓ (Y-axis element)		✓	✓
Control Chart	✓	✓ (X-axis element)	✓		✓
Pareto Chart	✓	✓ (X-axis element)		✓	✓
Trend Chart	✓	✓ (Y-axis element)			✓
Custom Reports	✓				✓
Descriptive Statistic View	✓	✓	✓	✓	✓

Table 10 – 3 Settings Associated with Source Charts, Views, and Custom Reports (Page 1 of 1)



Attention: If you Copy Settings from a source report to a chart or descriptive statistics view, you must always enter primary collection elements and specification limits for the destination chart or descriptive statistic view. Reports do not have primary collection elements and specification limits associated with them.

Copying Settings

You can apply the saved settings from a source chart, descriptive statistic view, or custom report to a destination chart, descriptive statistic view, or custom report. See: Copy Settings: page 10 – 4.

Prerequisites

- Create and save a source chart, descriptive statistic view, or custom report. See: Creating and Viewing Control Charts: page 10 – 25, Creating and Viewing Histograms: page 10 – 15, Creating and Viewing Trend Charts: page 10 – 19, Viewing Descriptive Statistics: page 10 – 32, and Using the Quality Results ReportWriter: page 10 – 42.

► **To copy selection criteria:**

1. From the Pareto Charts, Trend Charts, Quality Results Report Writer, or Descriptive Statistics View window, choose the Copy Settings button. The Copy Settings From list of values appears.
2. From the Copy Settings From list, choose the copy from Source (chart, report, or descriptive statistics view).



Attention: Also displayed in the Copy Settings From list of values are the names of the collection plans and the names of the primary collection elements associated with the available Source reports, charts, or descriptive statistic views.

3. Choose OK to copy all settings from the source to the destination chart, report or descriptive statistic view.

You can modify the copied settings as required. Previously entered settings on the destination chart, report or descriptive statistic view, if any, are overwritten.

Functional Grouping and Processing

Functions are used to group quality results when creating Pareto charts, trend charts, and custom Quality Results ReportWriter reports.

Functions and Groups

You can use functions to specify how to group and process quality results values associated with a collection plan element. The five available functions are as follows:

Sum	Sums all quality result records.
Count	Counts the number of quality result records.
Average	Calculates an average of the quality result records.
Min	Evaluates and groups quality results to find those records with the minimum value.
Max	Evaluates and groups quality results to find those records with the maximum value

Note: If you select a function when using the Quality Results ReportWriter, all the reported columns where a function has not been selected are grouped together. For example, assume you want to report Item, Department, and Test Voltage (Average).

The report displays the average test voltage for each item and department.

Functions and Data Types

The data type — numeric, character, or date — of the chosen collection plan element determines what function or functions can be applied to quality results values for a collection element. You can, for example, select and sum quality results for a "numeric" Quantity Defective collection plan element. Similarly for a "non-numeric" (character or date) Defect Code collection plan element, you can choose the "count" function to produce a count of all the Defect Codes results that meet the specified selection criteria. Numeric quality results can also be totalled.

Data types and the functions that can be performed for values of each are as follows:

Numeric data type	Numeric values can be Summed, Counted, and Averaged. They can also be grouped based on Minimum or Maximum quality result values.
Character data type	Character values can only be Counted.
Date data type	Date values can only be Counted.

Data types are assigned as you define your collection elements. See: Defining Collection Elements: page 3 – 12.

Quality Results Folders

You can use folders to customize the field and record layouts that are used when:

- Viewing Quality Results: page 10 – 35
- Viewing Quality Results by Lot Number: page 10 – 38
- Viewing Quality Results by Serial Number: page 10 – 40
- Updating Collection Import: page 6 – 25

See Also

Customizing the Presentation of Data in a Folder, *Oracle Applications User's Guide*

Pareto Charts

You can summarize and chart product defects using Pareto's law to focus on the most often occurring defects. For example, you can create Pareto charts to monitor the following:

- top defects
- most occurring causes
- most frequent repair types

You can chart quality results for any collection plan element. For example, you can chart the top defects entered for a particular production line this week.

Creating and Viewing Pareto Charts

You can chart quality results using Pareto charts. You can create Pareto charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

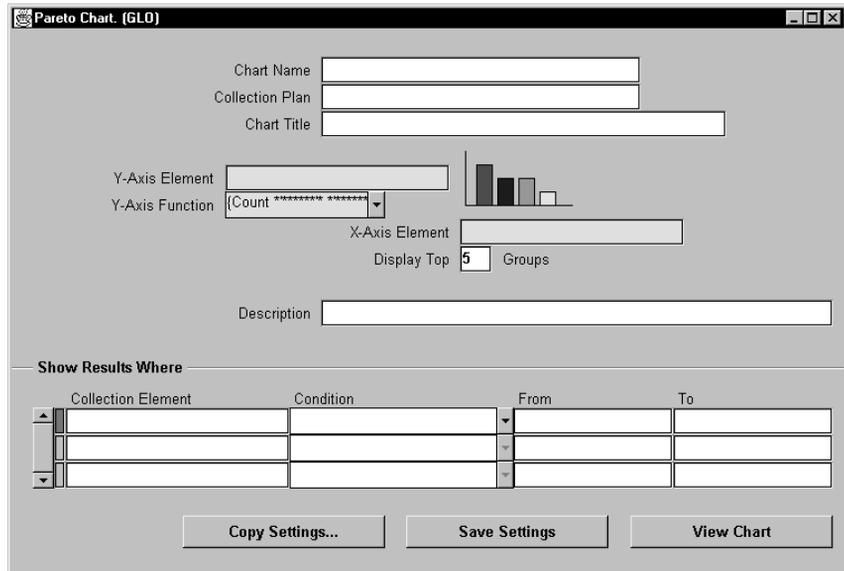
You can save your chart settings so that you can recreate charts using the same settings. You can change these settings to create new charts. You can select only those results that are to be charted. When you are satisfied with your settings and record selection, you can view your chart. You can optionally export chart information for further analysis.

Prerequisites

- To use Statit's charting and analysis capabilities, implement the Statit Integration. Once this integration is implemented you can also export results directly to Statit for further analysis. See: Integrating Oracle Quality and Statware: page 10 – 2.

► **To copy settings to your Pareto chart:**

1. Navigate to the Pareto Chart window.



2. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.
3. Enter missing information or change the copied information as required (See below).

You can change all copied settings except the collection plan.

► **To specify settings for your Pareto charts:**

1. Navigate to the Pareto Chart window.
2. Enter the Chart Name.

To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

The text you enter here is displayed at the top of the chart.

5. Select the X-axis Collection Element.

The X-axis of the chart (the horizontal dimension) is the primary collection element that you want to analyze. For example, for a top

defects Pareto, choose Defect Code as the collection element for the X-axis.

The X-Axis Element can be any collection plan element. However, usually you should select a collection element that represents an attribute or reference collection element; for example, Defect Code, Cause Code, Department, or Item Category.

6. Select the Y-axis Collection Element.

The Y-axis of the chart (the vertical dimension) usually represents a quantity or count of occurrences.

7. Select the Y-axis Function.

If the X-axis collection element selected is a number, you can sum or count the values associated with that collection element. You can also choose to determine the minimum, maximum, or average of these values. For example, if the collection plan contains collection elements Defect Code and Quantity Defective, you can choose Defect Code for the X-axis element, Quantity Defective for the Y-axis, then select the *sum* function for the Y-axis. When sum is selected all the defective quantities for each defect code are added up and charted. See: Functional Grouping and Processing: page 10 – 8.

If the X-axis collection element you select is a character or date (for example, Defect Code), you must select count. For example, if you have a collection plan with collection elements Serial Number and Defect Code, you might assume a quantity of 1 for each serialized unit. In this case, you can select Defect Code as the X-axis and specify the chart to count all the occurrences for each defect code.

8. Enter the Top n Groups to display on the chart. For example, enter 5 to chart the top five defect codes.

9. Optionally, enter the chart Description.

The text you enter here is displayed at the top of the chart, under the chart title.

► **To find and select quality results:**

- Navigate to the Show Results Where region of the Pareto Chart window. See: Finding Quality Results: page C – 2.

If you do not select which quality results to chart, all results associated with the collection plan are used.

► **To view charts:**

- If you are using the Oracle Quality statistics engine, choose the View Chart button. If you are using the Statit statistics engine, choose the Statit button. See: QA:Statistics Engine: page 2 – 12.

The following is an example of a Pareto Chart generated by the Oracle Quality statistic engine:

► **To save chart settings:**

- Choose the Save Settings button if you want to save the inquiry settings.

► **To export chart results:**

- If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Pareto Charts: page 10 – 11

Histograms

Histograms provide a graphic summary of variations in a set of data. This is done by partitioning the range of data into several intervals of equal length, counting the number of points in each interval, and plotting the counts as bar lengths. Histograms are useful in the study of process capability since they graphically display one or more of three important data distribution properties: shape, location, and scatter.

Typically, the shape of the distribution should be normal or bell shaped. Any significant deviation from the normal pattern has a cause which, once determined, can shed light on the variability in the process.

Histogram analysis is a basic step in analyzing a process and can provide the following sense of accomplishment:

- We have quantified some aspect of the process; we are managing by facts, not opinions.
- We have a better understanding of the variability inherent in the process; we have a more realistic view of the ability of the process to produce acceptable results consistently.
- We have new ideas and theories about how the process operates or about the causes of a problem and we have set the stage for additional investigative efforts.

Creating and Viewing Histograms

You can graphically display, in histogram form, quality results for any collection plan element with a numeric data type. You can select and graph a subset quality results values.

You can create histograms from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

You can save your chart settings. You can re–create charts using these saved settings, and you can change these settings to create new charts.

Histogram X–Axis and Y–Axis

The X–axis of the chart (the horizontal dimension) represents the value of the selected collection plan element. The Y–axis of the chart (the vertical dimension) represents the count or sum of occurrences of the primary collection element on the X–axis. Usually, this axis represents

a quantity or count of occurrences. For example, if you select the collection plan element Quantity Defective, the Y-axis is used to show the frequency of occurrences.

Prerequisites

- Optionally, define specifications and specification elements with specification limits. See: Defining Specifications: page 4 – 7 and Defining Specification Elements: page 4 – 10.

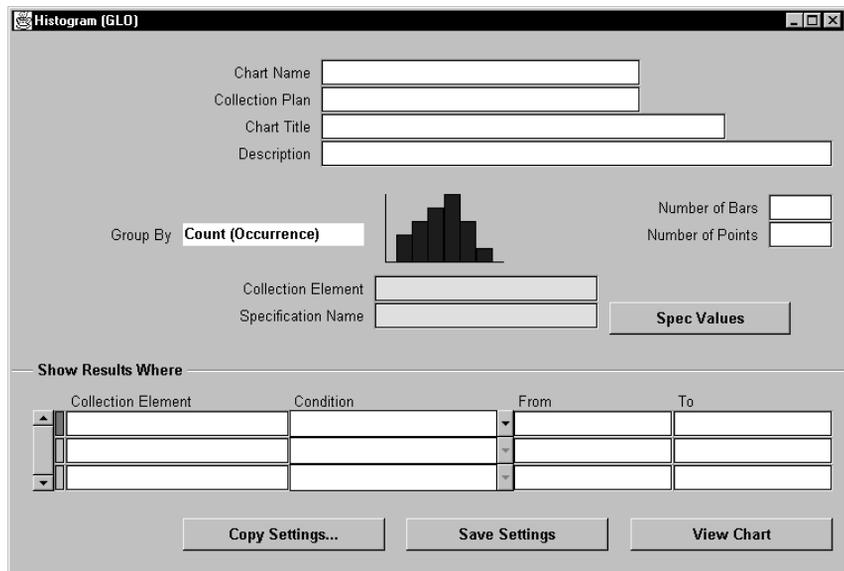
► To create histograms using copied settings:

1. Navigate to the Histograms window.
2. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.
3. Enter missing information or change the copied information as required (See below).

You can change all copied settings except the collection plan.

► To create histograms:

1. Navigate to the Histograms window.



The screenshot shows the 'Histogram (GLO)' window with the following fields and controls:

- Chart Name:
- Collection Plan:
- Chart Title:
- Description:
- Group By:
- Number of Bars:
- Number of Points:
- Collection Element:
- Specification Name:
- Spec Values:
- Preview: A small histogram showing a distribution of bars.

Show Results Where

Collection Element	Condition	From	To
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Buttons at the bottom:

2. Enter the Chart Name.

To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan.

If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Enter the Chart Title.

The text you enter here is displayed at the top of the chart.

5. Enter the chart Description.

The text you enter here is displayed at the top of the chart, under the chart title.

6. Select the Collection Element.

You can select any collection element on the collection plan. However, you must select a collection plan element with a numeric data type.

7. Optionally, select or find the specification.

You can only select specifications that have specification elements in common with the selected collection plan element defined. See: Defining Specification Element: page 4 – 10

You can find and select any specification, even specifications that do not have the selected collection element as a specification element. If this is the case, Upper and Lower Specification Limits and the Target Value are defaulted from the collection element. See: Defining Collection Element Specification Limits: page 3 – 18.

8. Optionally, enter the Number of Bars for the graph.

If you do not enter a number, the number of bars is calculated as the square root of the number of points.

9. Optionally, enter the Number of Points.

The Number of Points represents the total number of data points to be included. If you do not enter a specific number of points, all points are used. If you do enter a specific number, the most recently collected results are used.

► **To find and select quality results:**

- Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results: page C – 2.

If you do not select which quality results to chart, all results associated with the collection plan are used.

► **To view charts:**

- If you are using the Oracle Quality statistics engine, choose the View Chart button. If you are using the Statit statistics engine, choose the Statit button. See: QA:Statistics Engine: page 2 – 12.

The following is an example of a histogram:

► **To save chart settings:**

- Choose the Save Settings button if you want to save the inquiry settings.

► **To export chart results:**

- If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Histograms: page 10 – 15

Trend Charts

You can use trend charts to analysis data collected over a period of time. By observing trends, you can determine the appropriate time to take corrective action. For example, you can create a Glazing Process collection plan to collect process quality variables such as oven temperature and voltage from a glazing process. You can use this collection plan to record five readings at random times during each shift. Once the results are collected, you can create a trend chart to graphically display the results of temperature or voltage. See: Creating and Viewing Trend Charts: page 10 – 19.

Creating and Viewing Trend Charts

You can chart quality results using Trend Charts. Trend charts show values collected for a particular collection element over a period of time.

You can select results based on any combination of collection elements in the collection plan. For example, you can chart oven temperatures for a burn-in chamber for a particular production line this week.

You can create Trend charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

You can save your chart settings. You can re-create charts using these saved settings, and you can change these settings to create new charts.

After creating and viewing your chart, you can optionally export the raw data that the chart was based upon. Exported data can be further analyzed using a spreadsheet or statistical analysis software package.

► **To create trend charts using copied settings:**

1. Navigate to the Trend Chart window.
2. Enter missing information or change the copied information as required (See below).
3. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.

You can change all copied settings except the collection plan.

► **To create trend charts:**

1. Navigate to the Trend Chart window.

The screenshot shows the 'Trend Chart (GLO)' window. It contains several input fields: 'Chart Name', 'Collection Plan', 'Chart Title', and 'Description'. Below these are 'Collection Element' and 'Grouping Function' (set to 'Count'). A 'Group By' field is also present. A small line graph is visible to the right of the 'Collection Element' field. At the bottom, there is a 'Show Results Where' section with a table and three buttons: 'Copy Settings...', 'Save Settings', and 'View Chart'.

Collection Element	Condition	From	To

2. Optionally, enter the Chart Name.

To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

The text you enter here is displayed at the top of the chart.

5. Select the X-Axis Element.

The X-axis of the chart (the horizontal dimension) can be any collection plan element but is usually a collection element that represents time or groups of quality results collected consecutively over time. For example, you can view results by:

Occurrence: individual quality results or readings presented consecutively over time, from the oldest occurrence to the most recent occurrence

Collection number: a group of individual quality results or readings, grouped into a collection and identified by a collection number

Entry date: individual quality results or readings, grouped by the date in which they were entered

6. Select the Y-axis Element.

The Y-axis of the chart (the vertical dimension) represents the primary collection element that you want to analyze. Usually, this axis of the chart represents a variable collection element; for example, temperature or voltage.

7. Select the Y-axis Function if you want to group the collection element values. See: Functional Grouping and Processing: page 10 – 8.

If the X-axis represents a grouping (for example, Collection Number or Entry Date), you must select a grouping function for the Y-axis. For example, if the X-axis is Entry Date, you can select a function like Average to display average values for the collection element for each day. If you choose Occurrence for the X-axis, you cannot select a grouping function. See: Functional Grouping and Processing: page 10 – 8.

8. Optionally, enter the chart Description.

The text you enter here is displayed at the top of the chart, under the chart title.

► **To find and select quality results:**

- Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results: page C – 2.

If you do not select which quality results to chart, all results associated with the collection plan are used.

► **To view charts:**

- If you are using the Oracle Quality statistics engine, choose the View Chart button. If you are using the Statit statistics engine, choose the Statit button. See: QA:Statistics Engine: page 2 – 12.

The following is an example of a trend chart:

► **To save chart settings:**

- Choose the Save Settings button if you want to save the inquiry settings.

- ▶ **To export chart results:**
 - If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

Statistical Process Control (SPC)

Traditionally enterprises have depended on their production departments to make products and on their quality control departments to inspect and screen out items that do not meet specifications. Often this approach results in reiterative inspections in an effort to detect instead of prevent problems. Obviously this approach is wasteful because it allows time and materials to be invested in products or services that are not always usable. After the fact inspection is both uneconomical and unreliable.

Statistical process control, on the other hand, is a preventative system. Because it provides immediate feedback, it can minimize or eliminate waste. There are essentially four elements involved in SPC:

- *The process:* The combination of people, equipment, materials, methods, and environment that work together to produce output.
- *Information about Performance:* Process output provides qualitative and quantitative information about process performance. In a broad sense, process output includes not only the products that are produced, but also any intermediate 'outputs' that describe the operating state of the process, such as temperatures or cycle times. Collected and interpreted correctly, this data can provide the information you need to determine whether the product or process or both require corrective action.
- *Action on the process:* Action on the process is future oriented because it prevents the production of out-of-specification products. Corrective actions can include changes in operations (e.g. operator training), raw materials, and even in the process itself. Process changes might include equipment repair and maintenance or the addition of temperature and humidity controls.
- *Action on the output:* Action on the output is past-oriented, because it involves detecting out of specification output already produced. Unfortunately, if current output does not consistently meet customer requirements, it may be necessary to sort all products and to scrap or rework any nonconforming items.

Process control focuses on gathering process information and analyzing it so that actions can be taken to correct the process itself.

Process Variation

To use process control, it is important to understand the concept of variation. Some sources of variation in the process cause short term or

piece to piece differences, such as backlash and clearances within a machine and its fixturing. Other sources of variation cause changes in the output over the long term. Consequently, the time period and conditions under which measurements are made have a direct affect on the amount of total variation.

They are two types of variations: common cause and special cause variations. Common cause variations occur when processes are in statistical control. They are inherent to the system and are therefore difficult to reduce or eradicate. The variability that exists within the control limits of a typical control chart is usually due to common causes. Special cause (often called assignable cause) variations can be attributed to factors or sets of factors that are external to the system. Examples of special cause variations include operator errors, poor machine maintenance, and missed process steps. Special cause variations can be detected by simple statistical techniques one of which is the control chart.

See Also

Control Charts: page 10 – 25

Control Charts

Control charts are used to determine whether process stability has been upset by special or assignable causes. Oracle Quality provides the following types of control charts and pairs of control charts.

- **Xbar and R charts (*XBar R*):** A pair of line graph charts which plot subgroups of data collected over a continuous period of time. The Xbar chart plots the average value for each subgroup. The R chart, or range chart, plots the range of values within each subgroup.
- **Individual X and Moving Range charts (*XmR*):** A pair of charts based on individual data points instead of subgroups. The individual X chart simply plots individual data points. The moving range chart plots a specified range of the data points up to and including the current data point. For example, if a subgroup size of 5 is specified then the 10th point on the Moving Range chart is plotted using the range between points 6 and 10. These charts are commonly used when the process results do not fall into subgroups, for instance when the process is slow and data does not form clusters over a period of time.
- **Xbar and S charts (*XBar S*):** A pair of line charts similar to the Xbar and R charts except that the standard deviation is used instead of the range when the S chart is plotted. This pair of charts is commonly used instead of the Xbar and R chart when the subgroup size is large (>10) because it mitigates the effects of outlying data points. For example, if you had a subset size of 20 that contained one outlying data point, the range plotted on an R chart would be large even though the remainder of the data is fairly evenly distributed.

Subgroups

Selection of a subgroup is extremely important when defining a control chart. Improper subgroup selection can lead to misleading results and false corrective actions.

Creating and Viewing Control Charts

Control charts allow you to view trends in processes. After viewing data samples, out-of-tolerance processes can be adjusted accordingly. See: Statistical Process Control: page 10 – 23 and Control Charts: page 10 – 25.



Attention: Oracle Quality uses historical data to construct control charts. The user must exercise judgement in the reliance placed on this data when evaluating real-time processes.

You can chart all or only specific quality results associated with a collection plan. You can create Control charts from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

You can save your chart settings. You can re-create charts using these saved settings, and you can change these settings to create new charts.

You must define control limits before you can view a control chart. Control limits can be defined in any of the following three ways:

- *Based on Collection Results:* You can compute new control limits by entering the subgroup size and number of subgroups to use. Pressing the Compute New button then computes control limits based on the data most recently collected for the specified Collection Plan.
- *Based on Saved Limits:* You can use the control limits that were last used to generate the chart. You can also select saved limits from another chart, however, the selection of charts is limited by the chart type and the collection element.

Note: You can only save one set of control limits for a chart.

- *Based on Manual Entries:* Enter the subgroup size, number of subgroups to use, and all control limits computed via some other mechanism.

► **To create control charts using copied settings:**

1. Navigate to the Control Charts window.

Control Charts. (GLO)

Chart Name

Collection Plan

Chart Title

Description

Chart Type

Collection Element

Group By

Show Results Where

Collection Element	Condition	From	To
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

2. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.
3. Enter missing information or change the copied information as required (See below).

You can change all copied settings except the collection plan.

► **To create control charts:**

1. Navigate to the Control Charts window.
2. Enter the Chart Name.

To save your chart parameters, you must enter a chart name.

3. Select the Collection Plan to chart.

If you are creating a chart, you can select any collection plan, even those that are no longer effective. If you are changing a chart, you cannot change the collection plan.

4. Optionally, enter the Chart Title.

The text you enter here is displayed at the top of the chart.

5. Optionally, enter the Chart Description

The text you enter here is displayed at the top of the chart, under the chart title.

6. Select the Chart Type. See: Control Charts: page 10 – 25

Recommendations for the use of each set of charts are as follows:

XBar R: Use when the subgroup size is less than 10.

X mR: Use when monitoring a process that produces quality results that do not naturally fall into subgroups.

XBar S: Use when the subgroup size is greater than 10.

7. Select the Collection Element.

This is the primary collection element that you want to analyze. It must have a numerical data type.



Attention: Quality results are always grouped by occurrence or by the order in which the results were collected.

► **To find and select quality results:**

- Navigate to the Show Results Where region of the Control Chart window. See: Finding Quality Results: page C – 2.

If you do not select which quality results to chart, all results associated with the collection plan are used.

► **To define control limits based on collection results:**

1. From the Control Charts window, select the Control Limits button.
2. Select or enter the Control Limit Name.
3. Enter the Description.

You can use descriptions to identify the set of data you are charting.

4. Enter the Subgroup Size. You must enter a subgroup size and it must be between 2 and 25.



Attention: You must recalculate control limits after changing the subgroup size.

5. Optionally, enter the Number of Subgroups to use in the calculation of control limits. If you do not enter the number of subgroups to use for the calculation, you can manually specify the control limits.
6. Choose the Compute New button.

► **To choose saved control limits:**

1. From the Control Charts window, select the Control Limits button.
2. Select the Control Limit Name of the saved set of control limits.

You can also select saved limits from other charts, however, the selection of charts is limited by the chart type and the collection element.

3. Choose OK to save your work.

► **To manually specify control limits:**

1. Specify control limits by manually entering new limits — Upper X and R Control Limits, X and R Average values, and Lower X and R Control Limit values.
2. Choose OK to save your work.

► **To view charts:**

- If you are using the Oracle Quality statistics engine, choose the View Chart button. If you are using the Statit statistics engine, choose the Statit button. See: QA:Statistics Engine: page 2 – 12.

The following is an example of an X-bar R chart.

► **To save chart settings:**

- Choose the Save Settings button if you want to save the inquiry settings.

► **To export chart results:**

- If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Control Charts: page 10 – 25

Cp and Cpk

Cp and Cpk, commonly referred to as process capability indices, are used to define the ability of a process to produce a product that meets requirements. These indices, which are a fairly recent addition to the field of statistical process management, greatly simplify the management of statistically controlled processes.

To understand Cp and Cpk you must have an understanding of the following terms:

Specification Specifications define product requirements. In other words, they define what is expected from an item for it to be usable. Specifications are normally defined in terms of nominal (+/-) tolerances or ranges (low to high). A specification for a piston ring, for example, might specify that the diameter be 74mm +/- 0.05mm. The upper specification limit (USL) is the upper limit of the specified range. Similarly the lower specification limit (LSL) is the lower limit of the specified range. See: Specifications: page 4 - 4.

Standard Deviation The standard deviation is a measure of variability in a process. Defined as the root mean square (RMS) deviation from average it indicates how much a process can be expected to vary from the average. The standard deviation is normally fixed for a process that is under statistical control and can only be affected by a process change that affects the variability in a process.

Mean The arithmetic average of a group of values.

Cp

The Cp index is calculated using specification limits and the standard deviation only. This index indicates, in general, whether the process is capable of producing products to specifications. No information on the ability of the process to adhere to the target value is included in this index.

The formula for Cp is as follows:

$$Cp = (\text{upper spec} - \text{lower spec}) / 6 * \sigma$$

CpK

This Cpk index is calculated using specification limits, the standard deviation, and the mean. The index indicates whether the process is capable of producing within specification and is also an indicator of the ability of the process to adhere to the target specification.

The formula for Cpk is as follows:

$$\text{Cpk} = \min \{ (\mu - \text{Lower Spec}) / 3\sigma, (\text{Upper Spec} - \mu) / 3\sigma \}$$

Application of Cp and CpK

The following conditions must be met before Cp and CpK can be successfully used to evaluate the ability of a process:

- the sample size must be adequate (large enough)
- the data should be tested for normality
- the process being analyzed should be under statistical control

Caution: Only after a process is under statistical control, can one safely assume that the mean and standard deviation to have a stable values over time.

Cpk is more widely used than Cp, since it takes into account the mean and the standard deviation in its calculation. Please note that the difference between Cp and Cpk is an indicator of how far the average of the process is from the target specification. When the average of the process approaches the target value, the gap between Cpk and Cp closes. When the average of the specification is equal to the target value, then Cpk is equal to Cp. Cpk can never exceed Cp.

Both Cp and Cpk can be calculated with the generation of descriptive statistic views and histograms.

See Also

Histograms: page 10 – 15

Viewing Descriptive Statistics: page 10 – 32

Viewing Descriptive Statistics

You can compute basic statistics for quality results associated with any collection plan element using the Descriptive Statistics window. You can enter selection criteria to find only specific quality results for the collection plan element.

You can create descriptive statistic views from "scratch" or you can create them by copying settings from another chart, descriptive statistic view, or custom report. Copying settings allows you to view the same subset of data in different ways. See: Copy Settings: page 10 – 4.

You can save your descriptive statistic view settings. You can recreate descriptive statistic view using these saved settings, and you can change these settings to create new views.

The statistics calculated include the sum, mean, variance, standard deviation, total number of occurrences (the count), number of null occurrences (that is, occurrences where a value was not entered for the collection element), maximum, minimum, and range.

If you select specification limits, you can also calculate Cp and Cpk values as you view descriptive statistics. Cp and Cpk are measures of process capability, which is defined as the measured, inherent reproducibility of the product turned out by the process. See: Cp and Cpk: page 10 – 30.

After viewing descriptive statistics, you can optionally export the raw data that was used to create the view. Exported data can be further analyzed using a spreadsheet or statistical analysis software package.

► **To create a descriptive statistic view using copy settings:**

1. Navigate to the Descriptive Statistics window.
2. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.
3. Enter missing information or change the copied information as required (See below).

You can change all copied settings except the collection plan.

► **To create a descriptive statistic view:**

1. Navigate to the Descriptive Statistics window.
2. Optionally, enter the Statistic Name.

To save your settings, you must enter a statistic name.

3. Select the Collection Plan.

If you are updating a descriptive statistics view, you cannot change the collection plan.

4. Select the Statistical Element for which to view descriptive statistics. You can select any collection element on the collection plan.

5. Optionally, select the Specification Limits for the Cp and Cpk calculation using one of the following methods. If you do not select specification limits, Cp and Cpk are not calculated when statistical results are calculated and displayed.

Select Specification Element Specification Limits: To select specification element specification limits, select a Specification Name from the Specifications list of values and choose OK. When the Specification Limits window appears, the specification element specification limits (if any) are displayed. See: Defining Specification Elements: page 4 – 10.



Attention: The Specification list of values that appears displays only those Specifications that have the selected Statistical Element as a specification element.

Find Specification Element Specification Limits by Finding a Specification: If you do not know which specification has the required specification element specification limits, you can choose the Find Spec Limits button from the Specification Limits window. The Find Specifications window appears.

In the Find Specifications window, you can narrow your search criteria by choosing the specification type (Item Spec, Supplier Spec, or Customer Spec) and an Item or Item Category and Revision. If you select a Supplier Spec or Customer Spec specification type, you must also select the Customer or Supplier.

If you try to find an "item" specification, but a specification for that item cannot be found, Oracle Quality searches for a specification based on the category of the item entered. To determine the item category, the default category set you defined using the *QA:Quality Category Set* profile option is used. See: *QA:Quality Category Set*: page 2 – 11.

► **To select which quality results to include in the calculation:**

1. In the Show Results Where region, select the Collection Element to use for your query.

2. Select the query Condition (operator). See: Query Operators: page C – 4.
3. If the condition selected requires a range, enter both the From and To value. If the condition requires a single value, enter only the From value. If the condition (not equals) requires a null character, do not enter anything. To create an In or Not in List, see Creating In and Not In Lists: page C – 6.
4. Repeat steps 1 through 3 until all selection conditions are entered.

► **To calculate and display statistical results:**

- If you are using the Oracle Quality statistics engine, choose the Statistics button. The Statistical Results window appears displaying the calculated statistics. If specification limits were selected, Cp and Cpk are automatically calculated.

If you are using the Statit statistics engine, choose the Statit button.
See: QA:Statistics Engine: page 2 – 12.

► **To save your descriptive statistic settings:**

- Choose the Save Settings button to save the inquiry settings.

► **To export chart results:**

- If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

Viewing Quality Results

You can find and view all quality results associated with a collection plan. You can also find and view specific quality results associated with a collection plan using Query Find and Query-by-Example. You can also view detailed information — the target value and specification limits, if any — for specific quality results values.

You can view collection plan attachments, which are illustrative or explanatory files, as you view quality results.

You can optionally export results after viewing them.

► **To select all quality results for a collection plan:**

1. Navigate to the View Quality Results folder window. See: *Customizing the Presentation of Data in a Folder, Oracle Applications User's Guide*

Item	Quantity	UOM	Inspection Rest	PO Quality Cod	Inspection Reason	Ir

2. Select a Collection Plan.

If a default collection plan has been specified, it is automatically selected. See: QA:Default Collection Plan: page 2 – 10.

You can choose the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another

valid collection plan. See: Using a List of Values, *Oracle Applications User's Guide*.

Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

- ▶ **To find specific quality results:**
 - Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: Finding Quality Results: page C – 2.
- ▶ **To find specific quality results using query-by-example:**
 - Position the cursor in any field in the Results region and choose Enter from the Query menu. See: Performing Query-by-Example, *Oracle Applications User's Guide*
- ▶ **To view quality result details:**
 - See: Viewing Quality Results Details: page 10 – 36.
- ▶ **To export quality results:**
 - See: Exporting Quality Results: page 10 – 47.
- ▶ **To view collection plan attachments while viewing quality results:**
 - See: Viewing Attachments Associated with Quality Results: page 6 – 14.

See Also

Profile Options: page 2 – 9

Viewing Quality Results Details

You can view detailed information about a specific quality results value. Details include the target value and the specification limits.

Prerequisites

- ❑ Query quality results. See: Viewing Quality Results: page 10 – 35, Updating and Deleting Quality Results: page 6 – 17, Viewing Quality Results by Lot Number: page 10 – 38, and Viewing Quality Results by Serial Number: page 10 – 40.

► **To view details for results value:**

1. From the Results region, select a results value.
2. Choose the View Details button. The Details window appears displaying the description, target value, and specification limits for the selected result.

Viewing Quality Results by Lot Number

You can view quality results for specific lots and lot controlled items by collection plan. You can also view detailed information about the target value and specification limits, if any, that are associated with a quality results value. See: *Tracking Lot Controlled Items: page 1 – 11.*

You can optionally export results after viewing them.

► **To find quality results for specific lots and/or lot controlled items:**

1. Navigate to the Lot Quality folder window. See: *Customizing the Presentation of Data in a Folder, Oracle Applications User's Guide.* The Find Lot window appears.
2. In the Find Lot window, select a Lot number or select an Item and Lot Number then choose the Find button. The Lot Quality window appears.
3. Select a collection plan.

Your collection plan choices are restricted to those than collection plans that contain the selected lot number, including those that are no longer effective. If there is only one valid collection plan, it is automatically selected. If the default collection plan is one of the valid choices, it is automatically selected. See: *QA:Default Collection Plan: page 2 – 10.*

You can choose the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan. See: *Using a List of Values, Oracle Applications User's Guide.*

Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

► **To find specific quality results:**

- Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: *Finding Quality Results: page C – 2.*

- ▶ **To view quality result details:**
 - See: Viewing Quality Results Details: page 10 – 36.

- ▶ **To export chart results:**
 - If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Profile Options: page 2 – 9

Viewing Quality Results by Serial Number

You can view quality results for serial number controlled items by collection plan. You can also view detailed information about the target value and specification limits, if any, that are associated with a quality results value. See: *Tracking Serial Controlled Items: page 1 – 11.*

You can optionally export results after viewing them.

► **To find quality results for specific serial numbers items:**

1. Navigate to the Serial Number Quality folder window. See: *Customizing the Presentation of Data in a Folder, Oracle Applications User's Guide.* The Find Serial Number window appears.
2. In the Find Serial Number window, select a Serial number or select an Item and Serial Number then choose the Find button.
3. Select a collection plan.

Your collection plan choices are restricted to those than collection plans that contain the selected serial number, including those that are no longer effective. If there is only one valid collection plan, it is automatically selected. If the default collection plan is one of the valid choices, it is automatically selected. See: *QA:Default Collection Plan: page 2 – 10.*

You can use the Find Plan button or the standard list of values to find and select a collection plan. After selecting a collection plan, you can use the previous plan/next plan arrow buttons, located to the right of the collection plan name, to scroll to another valid collection plan. See: *Using a List of Values, Oracle Applications User's Guide.*

Once a collection plan is selected, the results associated with that collection plan are automatically displayed in date order. The Prompts entered when defining the collection elements are displayed as the column headings.

► **To find specific quality results:**

- Position the cursor in any field in the Results region and choose Find from the Query menu. The Find Results window appears. See: *Finding Quality Results: page C – 2.*

- ▶ **To view quality result details:**
 - See: Viewing Quality Results Details: page 10 – 36.

- ▶ **To export chart results:**
 - If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Profile Options: page 2 – 9

Using the Quality Results ReportWriter

You can create custom quality results reports using the Quality Results ReportWriter. You can include quality results for some or all collection plan elements. Results can be sequenced in any order that you choose.

You can use functions — sum, count, average, min, or max — to specify how to group and process the quality results you include in your reports. The data type — numeric, character, or date — of the chosen collection plan element determines what function or functions can be applied.

Report output can be saved to a file or sent to a printer. You can also export the raw results data that your reports are based upon. You can save the settings of a report so that users throughout your organization can use it.

You can optionally create custom reports using settings copied from another chart, descriptive statistic view, or custom report. Copying saved settings allows you to view the same subset of data in different ways.

Item Category Reporting

You can choose to report quality results by item category when an Item collection element appears on a collection plan. Oracle Quality determines an item's category based on the default category set from *QA:Quality Category Set* profile option. See: Profile Options: page 2 – 9.

► **To create a customer report using copied settings:**

1. Navigate to the Quality Results ReportWriter window.
2. Choose the Copy Settings button. See: Copying Settings: page 10 – 7.
3. Enter missing information or change the copied information as required (See below).

You can change all copied settings except the collection plan.

► **To create a quality results report:**

1. Navigate to the Quality Results ReportWriter window.

Quality Results ReportWriter (GLO)

Report Name

Collection Plan

Report Title

Description

Reported Columns

Seq	Reported Column	Function	Total
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Show Results Where

Collection Element	Condition	From	To
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Copy Settings... Save Settings Submit Report

2. Optionally, enter a Report Name.

To save your report and its parameters, you must enter a report name.

3. Select the Collection Plan.
4. Optionally, enter the Report Title.

The text you enter here is displayed on the report.

5. Optionally, enter the Report Description.

► **To specify and format results:**

1. In the Reported Columns region, enter the column Sequence number.

The sequence number determines the columnar order of the collection plan elements that appear on your report.

2. Select the collection plan element for the Reported Column.
3. Optionally, select a Function to use to process and group the results in the reported column. See: Functional Grouping and Processing: page 10 – 8.
4. Optionally, check the Totals check box to create a column total at the bottom of the report.

You can only total a reported column if it contains a numeric collection plan element.

5. Repeat Steps 2–4 for each collection element you wish to include on your report.

▶ **To find and select quality result:**

- Navigate to the Show Results Where region of the Pareto Chart window. See: Finding Quality Results: page C – 2.

If you do not select which quality results to report, all results associated with the collection plan are used.

▶ **To process the report:**

- Choose the Submit Report button to launch a concurrent request to process the report. All quality results that meet the specified selection conditions are reported.

▶ **To save report settings:**

- Choose the Save Settings button to save the report settings.

▶ **To export chart results:**

- If you are using the Oracle Quality statistics engine, choose Export Results from the Special Menu. If you are using the Statit Statistics Engine, choose Export to Statit from the Special Menu. See: Exporting Quality Results: page 10 – 47.

See Also

Submitting a Request, *Oracle Applications User's Guide*

Viewing and Deleting Action Log Entries

Entries are made in the Quality Action Log when *Post an entry to the Quality Action Log* message actions are invoked. See: Posting Action Log Entries: page 6 – 20 and Message Actions: page 3 – 20.

For each numbered log entry in the quality action log, the following information is displayed in each of the three alternative regions:

- *Message alternative region:* action Message
- *Action Rule alternative region:* Collection Element, Condition, Low, High, Result
- *Collection alternative region:* Collection Plan, Collection Number, Log (data entry) Date

After viewing action log entries you can delete them if you have function security set to allow you to do so. See: Security Functions: page 2 – 7.

► **To find and view specific action log entries:**

1. Navigate to the Action Log window. The Find Log Entries window appears

If a default collection plan has been assigned using the *Default Collection Plan* profile option, that collection plan name appears as the default in this window.

2. Enter query criteria in the Find Log Entries window.

You can search for a particular message, or for action log entries for a particular collection plan or collection element. You can also search by action log number, collection number, or by date or date range.

3. Choose the Find button. The Action Log window appears with the results of your query.

► **To delete action log entries:**

1. Select and deselect queried records as required. See: Selecting Multiple Records, *Oracle Applications User's Guide*.
2. Choose Delete from the Edit Menu.

See Also

Searching for Information, *Oracle Applications User's Guide*

Exporting Quality Results

The statistics engine you choose, using the *QA:Statistics Engine* profile option, determines what data is exported. See: *QA:Statistics Engine: page 2 – 12*.

If you are using the Statit statistics engine, you can export information to a file which can be read by the Statit statistical package. Doing so allows you to continue analyzing your data using the Statit tool set.

If you are using the Oracle Quality statistics engine, you can export to a comma-delimited ASCII file. You can then import this information into a spreadsheet, statistical analysis, or graphical presentation software package for further analysis.

Results Exported: Statit Statistics Engine

If you are using the Statit statistics engine, all the information that Statit requires for continued analysis is exported. This includes all the results values for the records that meet your selection criteria and the values for the following common collection plan elements — Created By, Collection Number, and Entry Date — that are associated with each of these records. See: *Common Collection Plan Elements: page 5 – 7*.

For example, if you have added 20 collection elements to your collection plan, when you export to Statit, 23 values (the 20 you added plus the 3 common collection plan elements listed above) are included with each export record.

All export files are placed in the directory specified by the *QA:Statistics Engine Path* profile option. These files can also be read by 3rd party packages. See: *QA:Statistics Engine Path: page 2 – 12*.

Results Exported: Oracle Quality Statistics Engine

If you are using the Oracle Quality statistics engine, the information that is exported is limited and varies based on which window you are exporting from.

Information is always exported to a comma-delimited ASCII file and can then be imported into spreadsheet, statistical analysis, or graphical presentation software packages.

By window, the information and the order that it is exported in is as follows:

Control Charts	For each record that satisfies the selection criteria entered, the Subgroup Number entered (X-axis collection element), and the calculated X-bar average, X-bar range, X-bar Upper Control Limit
-----------------------	--

(UCL), X-bar target value, X-bar Lower Control Limit (LCL), and the calculated R-bar UCL, R-bar target value, and R-bar LCL values are exported in this order. See: *Creating and Viewing Control Charts*: page 10 – 25.

Note: If you have manually specified Upper X and R Control Limits, X and R Average values, and Lower X and R Control Limit values, these values are exported instead.

- | | |
|-------------------------------|--|
| Histogram | For each selected record, the calculated values for the range and number of occurrences within that range are exported. See: <i>Creating and Viewing Histograms</i> : page 10 – 15. |
| Pareto Chart | For each selected record, the X and Y collection element values are exported. For example, if you are charting the defect codes and the number of items classified with those codes, only the selected and charted values for defect codes (X) and quantities (Y) and are exported. See: <i>Creating and Viewing Pareto Charts</i> : page 10 – 11. |
| Trend Chart | For each selected record, the X and Y collection element values are exported. For example, if you are charting annealing temperatures recorded over a period of several weeks, only the selected and charted values for X (temperatures) and Y (dates) are exported. See: <i>Creating and Viewing Trend Charts</i> : page 10 – 19. |
| Descriptive Statistics | Only the values for the statistical element specified for each selected record. For example, if your statistical element is item number and your selection criteria indicates all items inspected in a given date range, a list of items — which may or may not include duplicates entries — is exported. See: <i>Viewing Descriptive Statistics</i> : page 10 – 32. |
| Lot Quality | Only result records that meet the lot selection criteria and the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements — Created By, Collection Number, and Entry Date — are included for each record. See: <i>Viewing Quality Results by Lot Number</i> : page 10 – 38. |

— Created By, Collection Number, and Entry Date —

Serial Number Quality	Only result records that meet the serial number selection criteria and the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements — Created By, Collection Number, and Entry Date — are included for each record. See: Viewing Quality Results by Serial Number: page 10 – 40.
View Quality Results	Only result records that meet the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements — Created By, Collection Number, and Entry Date — are included for each record. See: Viewing Quality Results: page 10 – 35
Quality Results ReportWriter	Only the results values that are included on the report are exported. They are exported in columnar order. See: Using the Quality Results ReportWriter: page 10 – 42.
Update Quality Results	Only result records that meet the record selection criteria entered in the Find Results window are exported. Values for all collection plan elements as well as the common collection plan elements — Created By, Collection Number, and Entry Date — are included for each record. See: Updating and Deleting Quality Results: page 6 – 17.

Prerequisites

- Specify which statistics engine is to be used. See: QA: Statistics Engine: page 2 – 12.
- Collect quality results. See: Data Collection Options: page 1 – 8.

► **To export results if you are using the Oracle Quality Statistics Engine:**

1. Query results in the View Quality Results, Update Quality Results, View Quality Results by Lot Number, View Quality Results, Pareto Charts, Trend Charts, Control Charts, Histograms, or Quality Results Report Writer window.
2. Choose Export Results from the Special menu. The Save As dialog box appears.

The default directory is the Application's base path *bin* directory on the client.

► **To export results if you are using the Statit Statistics Engine:**

1. Query results in the View Quality Results, Update Quality Results, View Quality Results by Lot Number, View Quality Results, Pareto Charts, Trend Charts, Control Charts, Histograms, or Quality Results Report Writer window.
2. Choose Export Results to Statit from the Special menu.
Results are exported to a file in the Statit directory. See: QA:Statistics Engine Path: page 2 – 12.

See Also

Special Menu: page D – 2

Viewing Quality Results: page 10 – 35

Updating Quality Results: page 6 – 17

Viewing Descriptive Statistics: page 10 – 32

Viewing Quality Results by Lot Number: page 10 – 38

Viewing Quality Results by Serial Number: page 10 – 40

Using the Quality Results ReportWriter: page 10 – 42

Creating and Viewing Pareto Charts: page 10 – 11

Creating and Viewing Trend Charts: page 10 – 19

Creating and Viewing Control Charts: page 10 – 25

Creating and Viewing Histograms: page 10 – 15

CHAPTER

11

ISO 9000

This chapter discusses how Oracle Quality can help you meet ISO 9000 reporting standard requirements.

ISO 9000 Compliance

ISO 9000 standards are a series of quality management standards proposed by the International Organization for Standards (ISO) in 1987. These standards require manufacturers to implement a quality management system to track products through the manufacturing process, inspect and test products, and document test procedures and results.

ISO 9000 is an evaluation of the consistency in execution and maintenance of internal operation procedures that directly affect a company's ability to produce high quality products and services.

ISO 9000 states that you must:

- have a 'quality system' of some kind
- document the processes that you use to guarantee that you create quality products or services (for example: your inspection operations, your production operations, how you determine and segregate defective products)
- be able to prove that you have done what you've documented, typically through an ISO 9000 audit performed by an auditing organization

There are several PC-based products on the market that can help a company format and create a "Quality Manual" according to ISO 9000 guidelines. Many of these include templates which help you get started, suggest a format, suggest general topics to include and give you checklists to follow. Oracle Quality is not a Quality Manual creation product—but, if you already have such documentation in electronic form, you can attach these documents to Oracle Quality collection plans and specifications.

Oracle Quality can assist your ISO 9000 effort by providing an effective tool to collect details about product and process defects and to track dispositions and corrective actions. A large part of ISO 9000 is record-keeping — records of your inspections, defects found, corrective actions taken, quality specifications, quality results you've collected, etc. Oracle Quality is essentially a quality record-keeping system to help you in this endeavor.

Oracle Quality can help manufacturers achieve and maintain ISO 9000 certification by documenting the quality standards associated with products and processes and by facilitating collection of results related to these standards. You can use the quality collection plan to define the critical quality data to collect and track, and to document the test and inspection instructions for each step. The collection plan helps ensure

that the correct quality data is collected at the correct step and by the correct operator. You can use the quality specification to define critical collection elements and specification limits for specific items. In addition, you can use collection plan attachments and specification attachments to display your standard operating procedures and other relevant ISO 9000 documentation during quality data collection.

CHAPTER

12

Reports and Processes

This chapter explains how to submit report requests and briefly describes each Oracle Quality report.

Overview of Reports

Oracle Quality provides you with a wide variety of reports, intended for different users of the product. This chapter tells you everything you need to know about submitting and analyzing the following Oracle Quality reports:

- Collection Element Action Rules Report: page 12 – 3
- Collection Element Usages Report: page 12 – 4
- Collection Elements Report: page 12 – 6
- Collection Plan Action Rules Report: page 12 – 8
- Collection Plan Details Report: page 12 – 10
- Collection Plan Summary Report: page 12 – 11
- Quality Results Report: page 12 – 13
- Quality Specifications Report: page 12 – 14

Collection Element Action Rules Report

Use the Collection Element Action Rules Report to list your collection elements and the action rules associated with them. You can choose to list information for one or all collection elements. You can also choose to list information for only enabled collection elements. Collection elements, their associated action rules, and the actions related to those action rules are listed in alphanumeric order by collection element.

Report Submission

In the Submit Requests window, enter Collection Element Action Rules Report in the Name field.

Report Parameters

Collection Element Name

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Collection Element Enabled

Choose one of the following options:

- | | |
|------------|---|
| <i>Yes</i> | Print information for enabled collection elements only. This is the default option. |
| <i>No</i> | Print information for all collection elements. |

See Also

Defining Collection Elements: page 3 – 12

Defining Collection Element Actions: page 3 – 27

Submitting a Request, *Oracle Applications User's Guide*

Collection Element Usages Report

Use the Collection Element Usages Report to list your collection elements and the collection plans they have been copied to. You can choose to report information for one or all collection elements. You can also choose to list only enabled collection elements and enabled collection plans associated those collection elements. Collection elements and the collection plans they are associated with are grouped by collection element type and listed in alphanumeric order by collection element name.

Report Submission

In the Submit Requests window, enter Collection Element Usages Report in the Name field.

Report Parameters

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Enabled Collection Elements Only

Choose one of the following options:

- | | |
|------------|---|
| <i>Yes</i> | Print only enabled collection elements. This is the default option. |
| <i>No</i> | Print all collection elements. |

Enabled Plan Elements Only

Choose one of the following options:

- | | |
|------------|--|
| <i>Yes</i> | Print only collection elements that are enabled on the collection plan they are associated with. This is the default option. |
| <i>No</i> | Print all collection elements that are on the collection plan they are associated with. |

See Also

Defining Collection Elements: page 3 – 12

Creating Collection Plans: page 5 – 13

Defining Collection Plan Elements: page 5 – 17

Submitting a Request, *Oracle Applications User's Guide*

Collection Elements Report

Use the Collection Elements Report to list information about your collection elements. You can choose to list all collection elements for a particular collection element type. You can also choose to list information for one or all collection elements. Lastly, you can also choose to list information for enabled collection elements only. Collection element information includes the datatype, reporting length, decimal precision (if applicable), default value (if any) and whether they are enabled, predefined, or mandatory. Information is listed in alphanumeric order by collection element name.

Report Submission

In the Submit Requests window, enter Collection Elements Report in the Name field.

Report Parameters

Collection Element Type

Choose a collection element type. See: Collection Element Types: page 3 – 4.

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, information for all collection elements is printed.

Enabled Collection Elements Only

Choose one of the following options:

- | | |
|------------|---|
| <i>Yes</i> | Print information for enabled collection elements only. This is the default option. |
| <i>No</i> | Print information for all collection elements. |

See Also

Defining Collection Element Types: page 3 – 5

Defining Collection Elements: page 3 – 12

Submitting a Request, *Oracle Applications User's Guide*

Collection Plan Action Rules Report

Use the Collection Plan Action Rules Report to list your collection plans and collection elements and action rules assigned to them. You can choose to list collection elements and action rules for one or all collection plans. You can also choose to report information for only enabled collection plans. Collection plans, their effectivity dates, associated collection elements and the action rules and related actions associated with those collection elements are listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Action Rules Report in the Name field.

Report Parameters

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan. If you do not enter a collection plan name, information for all collection plans is printed.

Enabled Collection Plans Only

Choose one of the following options:

Yes Print information for enabled collection plans only.
This is the default option.

No Print information for all collection plans.

Collection Element

Enter a collection element name. Oracle Quality prints information for only this collection element. If you do not enter a collection element name, Oracle Quality reports information for all collection elements.

Enabled Collection Elements Only

Choose one of the following options:

<i>Yes</i>	Print information for enabled collection elements only. This is the default option.
<i>No</i>	Print information for all collection elements.

See Also

Defining Collection Plan Element Actions: page 5 – 25
Submitting a Request, *Oracle Applications User's Guide*

Collection Plan Details Report

Use the Collection Plan Details Report to list detailed information about your collection plans. You can choose to list details for a particular collection plan type. You can choose to list information for one or all collection plans. Collection plan details include information on the collection elements assigned to the collection plan, such as their sequence number on the plan, element type, prompt, default value (if any) and whether they are mandatory, enabled, or displayed. Information is listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Details Report in the Name field.

Report Parameter

Collection Plan Type

Choose a collection plan type. See: Collection Plan Types: page 5 – 4.

Collection Plan Name

Enter a collection plan name. Oracle Quality prints information for only this collection plan. If you do not enter a collection plan name, information for all collection plans is printed.

Enabled Collection Plans Only

Choose one of the following options:

- | | |
|------------|--|
| <i>Yes</i> | Print information for enabled collection plans only. This is the default option. |
| <i>No</i> | Print information for all collection plans. |

See Also

Creating Collection Plans: page 5 – 13

Submitting a Request, *Oracle Applications User's Guide*

Collection Plan Summary Report

Use the Collection Plan Summary Report to list summary information about your collection plans. You can choose to list summary information for a particular collection plan type. You can choose to list information for one or all collection plans. Collection plan summary information includes the specification type (if any) and the view name. Information is listed in alphanumeric order by collection plan name.

Report Submission

In the Submit Requests window, enter Collection Plan Summary Report in the Name field.

Report Parameters

Collection Plan Type

Choose a collection plan type. See: Collection Plan Types: page 5 – 4.

See Also

Creating Collection Plans: page 5 – 13

Submitting a Request, *Oracle Applications User's Guide*

Importing Quality Results Data

You can use the Collection Import Manager program to add quality results to the quality data repository and to update quality results already in the quality data repository.



Attention: You can only update one row at a time when you run the Collection Import Manager program.

When the Collection Import Manager program is submitted, the system searches the Collection Import Interface Table (QA_RESULTS_INTERFACE) and creates or updates quality results records in the quality results database table (QA_RESULTS) for each row that passes validation. Records in the Collection Import Interface Table that have their update flag set to 2, update current records in QA_RESULTS while those with an update flag other than 2, create new quality results records. If a row fails validation, an error message is entered in the errors table (QA_INTERFACE_ERRORS) and the invalid rows remain in the Collection Import Interface Table. You can update these failed rows and resubmit them.

Prerequisites

Insert rows into the collection import table. See: Collection Import, *Oracle Manufacturing Open Interfaces Manual, Release 11*.

► **To specify the number of import workers to use and launch the import manager:**

1. Navigate to the Launch Collection Import Manager window. The Parameters window appears.
2. Enter the number of Worker Rows. This is the number of rows each Collection Import Worker processes.
3. Choose OK.

The Collection Import Manager polls the Collection Import Interface Table, validates each row of data and either creates or updates quality results records for that row or enters an error messages in the Errors table. Invalid rows remain in the Collection Import Interface Table.

4. Choose Submit.

► **To specify print options, define run options, and submit the request:**

- See: Submitting a Request, *Oracle Applications User's Guide*.

Quality Results Report

Use the Quality Results Report to print custom reports created using the Quality Results ReportWriter.

Report Submission

In the Submit Requests window, enter Quality Results Report in the Name field.

Report Parameters

Report Name

Enter the name of a previously saved report. See: Using the Quality Results ReportWriter: page 10 – 42.

See Also

Submitting a Request, *Oracle Applications User's Guide*

Quality Specifications Report

Use the Quality Specifications Report to list information about your quality specifications. You can choose to list all specifications for a particular specification type. You can also choose to list information for one or all specifications. Lastly, you can choose to list specifications by their category sets and categories. Specification information includes the specification type, effectivity date, characteristic name, unit of measure, target value, and upper and lower specification limits, reasonable limits, and user-defined limits. Information is listed in alphanumeric order by specification name.

Report Submission

In the Submit Requests window, enter Quality Specification Report in the Name field.

Report Parameters

Specification Type

Choose a specification type. See: Specification Types: page 4 – 4.

Specification Subtype

Choose a specification subtype. See: Specification Subtypes: page 4 – 5

Characteristic Group

Choose a characteristic group.

Category Set

Choose a category set.

Category

Choose a category depending on the category set chosen.

Item/Customer/Supplier

Choose an item, customer, or supplier depending on the specification type chosen.

See Also

Defining Specifications: page 4 – 7

Submitting a Request, *Oracle Applications User's Guide*

APPENDIX

A

Windows and Navigator Paths

This appendix shows you the default navigator path for each Oracle Quality window. Refer to this appendix when you do not already know the navigator path for a window you want to use.

Quality Windows and Navigator Paths

Although your system administrator may have customized your navigator, typical navigational paths include the following:

Note: Text in brackets ([]) indicates a button.

Window Name	Navigation Path
Action Log 10 – 45	Results > Inquiries > Action Log
Actions:Concurrent Program 3 – 29	Setup > Collection Elements > Actions [Button] > Action Details [Button]
Actions:Concurrent Program 5 – 28	Setup > Collection Plans > Actions [Button] > Action Details [Button]
Actions:Operating System Script 3 – 29	Setup > Collection Elements > Actions [Button] > Action Details [Button]
Actions:Operating System Script 5 – 28	Setup > Collection Plans > Actions [Button] > Action Details [Button]
Actions:Send Electronic Mail 3 – 29	Setup > Collection Elements > Actions [Button] > Action Details [Button]
Actions:Send Electronic Mail 5 – 28	Setup > Collection Plans > Actions [Button] > Action Details [Button]
Actions:SQL Script 3 – 29	Setup > Collection Elements > Actions [Button] > Action Details [Button]
Actions:SQL Script 5 – 28	Setup > Collection Plans > Actions [Button] > Action Details [Button]
Chart 10 – 25	Results > Charts > Control Chart > View Chart [Button]
Chart 10 – 15	Results > Charts > Histogram > View Chart [Button]
Chart 10 – 11	Results > Charts > Pareto Chart > View Chart [Button]
Chart 10 – 19	Results > Charts > Trend Chart > View Chart [Button]
Collection Element Types 3 – 5	Setup > Collection Element Types
Collection Elements 3 – 12	Setup > Collection Elements
Collection Plans 5 – 13	Setup > Collection Plans
Collection Plan Types 5 – 4	Setup > Collection Plan Types
Control Chart 10 – 25	Results > Charts > Control Charts
Control Limits 10 – 25	Results > Charts > Control Charts > Control Limits [Button]
Copy Values 5 – 20	Setup > Collection Plans > Values [Button] > Defaults [Button]
Database Views 5 – 46	Setup > Collection Plans > Views [Button]
Descriptive Statistics 10 – 32	Results > Inquiries > Descriptive Statistics
Details 10 – 36	Results > Inquiries > View Quality Results > [View Details]
	Results > Entry > Update Quality Results > [View Details]

Window Name	Navigation Path
	Results > Inquiries > Lot Quality > [View Details]
	Results > Inquiries > Serial Number Quality > [View Details]
Enter Quality Results 6 – 10	Results > Entry > Enter Quality Results
Histogram 10 – 15	Results > Charts > Histogram
Launch Manager 12 – 12	Import > Launch Collection Import Manager
Lot Quality 10 – 38	Results > Inquiries > Lot Quality
Output Variables 3 – 35	Setup > Collection Plans > Actions [Button] > Action Details [Button] > Variables [Button]
	Collection Elements > Actions [Button] > Action Details [Button] > Variables [Button]
Pareto Chart 10 – 11	Results > Charts > Pareto Chart
Quality Actions 3 – 27	Setup > Collection Elements > Actions [Button]
Quality Actions 5 – 25	Setup > Collection Plans > Actions [Button]
Quality Results ReportWriter 10 – 42	Reports > Quality Results ReportWriter
Serial Number Quality 10 – 40	Results > Inquiries > Serial Number Quality
Specification Elements 4 – 7	Setup > Specifications > Spec Elements [Button]
Specification Types 5 – 22	Setup > Collection Plans > Specifications [Button]
Specifications 4 – 7	Setup > Specifications
Statistical Results 10 – 32	Results > Inquiries > Descriptive Statistics > Statistics [Button]
Trend Chart 10 – 19	Results > Charts > Trend Chart
Update Collection Import 6 – 25	Import > Update Collection Import
Update Quality Results 6 – 17	Results > Entry > Update Quality Results
Values 3 – 16	Setup > Collection Elements > Values [Button]
	Setup > Collection Plans > Values [Button]
	Setup > Specification Types > Values [Button]
View Collection Elements 3 – 37	Inquiries > Collection Elements
View Collection Plans 5 – 48	Inquiries > Collection Plans
View Quality Results 10 – 35	Results > Inquiries > View Quality Results

For forms described in other manuals:

See...	Refer to this manual for a complete form description
Flex	Oracle Applications Flexfields Manual
MRP	Oracle Master Scheduling/MRP and Supply Chain Planning User's Guide
User	Oracle Application User's Guide

All Reports: page 12 – 2

Reports > All

Assign a Value: page 5 – 34

Change Organization (see **MRP**)

Other > Change Organization

Concurrent Requests (see **User**)

Other > Requests

Personal Profile Values (see **User**)

Other > Profiles

APPENDIX

B

Attachments

This appendix explains how to attach documents to collection plans, specifications, and results lines.

Attachments for Collection Plans, Specifications and Result Lines

You can attach illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video, graphics, OLE objects, and so on — to collection plans and specifications. You can also attach files to individual quality results line records.

Collection Plan Attachments

For example, if you create Microsoft Word documents containing standard operating procedures, ISO 9000 quality procedures, inspection instructions, or disposition procedures, you can attach these documents to related collection plans. You can also attach video clips that illustrate how to perform an inspection, take a reading, or calibrate a machine to collection plans for training purposes. You can view collection plan attachments as you *enter*, *view*, and *update* quality results.

Specification Attachments

For example, if you have electronic documents such as an engineering specification document, a scanned image of a product or process specification, a CAD drawing, or a supplier contract, you can attach these documents to specifications. You can view specification attachments only as you *enter* quality results.

Result Line Attachments

For example, an inspector that rejects an item because of a visible flaw can attach a picture or detailed description of the flaw to the results line record. Result line attachments can then be viewed and analyzed prior to taking corrective actions.

See Also

Attaching Files to Collection Plans, Specifications, and Result Lines:
page B - 3

Working with Attachments, *Oracle Applications User's Guide*

Attaching Files to Collection Plans, Specifications, and Results Lines

You can attach illustrative or explanatory files — in the form of text, images, word processing documents, spreadsheets, video, graphics, OLE objects, and so on — to collection plans and specifications as they are created or updated. You can also attach files to quality results as you enter them.

You can view collection plan attachments as you enter, view, and update quality results. You can only view specification attachments as you enter quality results. You can view quality results line attachments as you update and view quality results. See: *Viewing Attachments Associated with Quality Results*: page 6 – 14.



Attention: Deleting an attachment to an image or OLE object deletes the link to the file not the file itself.

► To add collection plan or specification attachments:

1. Navigate to the Collection Plans or Specifications window. See: *Creating Collection Plans*: page 5 – 13 and *Defining Specifications*: page 4 – 7.



Attention: You must save the collection plan or specification before you can add an attachment to it.

2. Choose the Attachments icon or choose attachments from the Edit menu. The Attachments window appears.

► To add attachments to quality results lines:

1. Navigate to the Enter Quality Results window. See: *Entering Quality Results Directly*: page 6 – 10.
2. Select a quality results line.
3. Choose the Attachments icon or choose attachments from the Edit menu. The Attachments window appears.

See Also

Attachments for Collection Plans, Specifications, and Results Lines: page B – 2

Working with Attachments, Oracle Applications User's Guide

APPENDIX

C

Results Queries

This appendix explains how to query quality results.

Finding Quality Results

You can query to find specific quality results using the Find Results window or by using the Show Results Where region.

The Find Results window can be invoked as you are:

- Updating and Deleting Quality Results: page 6 – 17
- Viewing Quality Results: page 10 – 35
- Viewing Quality Results by Lot Number: page 10 – 38
- Viewing Quality Results by Serial Number: page 10 – 40

The Show Results Where region automatically appears as you are:

- Viewing Descriptive Statistics: page 10 – 32
- Using the Quality Results ReportWriter: page 10 – 42
- Creating and Viewing Pareto Charts: page 10 – 11
- Creating and Viewing Trend Charts: page 10 – 19
- Creating and Viewing Control Charts: page 10 – 25
- Creating and Viewing Histograms: page 10 – 15

Quality results can be found using any combination of selection criteria. For instance, you can select quality results that were entered on a specific date, by a specific user, and were assigned the same collection number.

► **To enter search criteria:**

1. In the Find Results window or the Show Results Where region, select the Collection Element to use for your query.
2. Select the query Condition (operator). See: Query Operators: page C – 4.
3. If the condition selected requires a range, enter both the From and To value. If the condition requires a single value, enter only the From value. If the condition (e.g., is entered) requires a null character, do not enter anything. To create an In or Not in List, see Creating In and Not In Lists: page C – 6.
4. Repeat steps 1 through 3 until all selection conditions are entered.
5. If you are using the Find Results window, choose the Find button to display all quality results that meet the specified selection criteria. If you are using the Show Results Where region, the quality results

that meet the specified selection criteria are used to create your descriptive statistic view, chart, or report.

► **To clear search criteria from the Find Results window:**

- From the Find Results window, choose Clear to clear the current search criteria so you can enter new search criteria.



Attention: Clearing the Find Results window does not clear the results records retrieved, only the conditions of your query. If you want to clear the results records, you must choose Clear Block from the Edit Menu.

► **To close the Find Results window:**

- The Find Results window remains open after you perform a search. Choose Close from the Control menu of the Find Results window to cancel Query Find.

See Also

Entering Quality Results Directly: page 6 – 10

Query Operators

You can use query operators in your search criteria to restrict your search to the information you need. The query operators you can use in most fields include:

Query Operator	Meaning	Example Expression
equals (=)	Select only those records that are equal to the <i>From</i> value	Defect Code = 3
is not (<>)	Select only those records that are not equal to the <i>From</i> value	To Department = Assembly
less than (<)	Select only those records that are less than the <i>From</i> value	Quantity < 500
at most (<=)	Select only those records that are less than or equal to the <i>From</i> value	Quantity Rejected <= 5
at least (>=)	Select only those records that are greater than or equal to the <i>From</i> value	Quantity Passed >= 10
greater than (>)	Select only those records that are greater than the <i>From</i> value	Job > 14526
between	Select only those records that are between the <i>From</i> and <i>To</i> values	Revision A02 and Revision A04
outside of	Select only those records that are less than the <i>From</i> and greater than the <i>To</i> values	Cause Code 10 and Cause Code 20
is empty	Select only those results that have no value	Not Applicable
is entered	Select only those records that have a value	Not Applicable



Attention: When you use the between query operator, the search criterion "between value 1 and value 2" retrieves all records containing values between and including value 1 and value 2. The same applies to dates. For example, the search criteria "between '01-JAN-96' and '01-MAR-96'" retrieves all records with dates between and including 01-JAN-96 and 01-MAR-96.

Query operator expressions retrieve results according to the ordering rules for character fields and number fields. For example suppose you have the following fields values: 002, 003, 004, 005, 078, 123, 253, 441, 576, 775, 1274, 3298, 4451, 5600, 9578, 10500, 58437, and 70845.

These values are shown in the order you expect for numeric values, where 005 is between 004 and 078. If the field is defined as character, the search criteria "between 4 and 7" retrieves the values 441, 576, 4451, 5600, and 58437, which all start with characters between 4 and 7. The values 775 and 005 would not appear because 775 is lexically greater than 7, and 0 is lexically less than 4.



Attention: When using Query Find, it may not be possible to determine whether a field is defined as character or numeric and you may have to experiment with different search criteria expressions to see what results are returned.

You can also choose and define "in" and "not in" list operators when:

- Creating and Viewing Pareto Charts: page 10 – 11
- Creating and Viewing Trend Charts: page 10 – 19
- Updating and Deleting Quality Results: page 6 – 17
- Viewing Quality Results: page 10 – 35
- Viewing Quality Results by Lot Number: page 10 – 38
- Viewing Quality Results by Serial Number: page 10 – 40
- Viewing Descriptive Statistics: page 10 – 32
- Using the Quality Results ReportWriter: page 10 – 42

and when defining collection triggers as you are Associating Transactions with Collection Plans: page 5 – 43.

See Also

See: Creating In and Not In Lists: page C – 6.

Creating In and Not In Lists

In addition to the standard query operators (conditions) that can be used to select quality results, you can define custom "in" and "not in" list operators. See: Finding Quality Results: page C – 2.

The "in" record selection condition allows you to create a user-defined list of values. Only quality results values that match the values in this list are selected. The "not in" record selection condition also allows you to create a user-defined list of values. However in this instance, only quality results values that do *not* match the values in this list are selected.

► **To define "in" and "not in" lists of values for conditional results selection:**

1. From the query operators list, select the *in* or *not in* Condition. (Multiple) appears in the From field.
2. Position the cursor in the From field.
3. From the Edit Menu choose List of Values. The In List Value window appears.
4. Enter the Values in List.

The data type of the selected collection element restricts the data type of the values you can enter.

APPENDIX

D



Special Menu Options

Special Menu

In Oracle Applications, the active window and conditions applying to that window, determine whether options are available from the Special Menu. In Oracle Quality, there is currently only one Special Menu option and it is used to export data. The exact name of the option varies depending on how you have the QA:Statistics Engine profile option set. If it is set to Stat, the Special Menu option reads 'Export to Statit.' If it is set to Quality, it reads 'Export Results.' See: QA:Statistics Engine: page 2 – 12 and Exporting Quality Results: page 10 – 47.

Results Inquiry and Update Windows

- Update Quality Results
 - See: Updating Quality Results: page 6 – 17
- View Quality Results window
 - See: Viewing Quality Results: page 10 – 35
- Lot Quality
 - See: Viewing Quality Results by Lot Number: page 10 – 38
- Serial Number Quality
 - See: Viewing Quality Results by Serial Number: page 10 – 40
- Descriptive Statistics
 - See: Viewing Descriptive Statistics: page 10 – 32

Report Window

- Quality Results Report Writer
 - See: Using the Quality Results ReportWriter: page 10 – 42

Charts

- Pareto Charts
 - See: Creating and Viewing Pareto Charts: page 10 – 11
- Trend Charts
 - See: Creating and Viewing Trend Charts: page 10 – 19
- Control Charts
 - See: Creating and Viewing Control Charts: page 10 – 25
- Histograms

- See: Creating and Viewing Histograms: page 10 – 15

Glossary

action rule A conditional statement is evaluated during quality data collection. Action rules must be evaluated and found to be true before their associated quality actions are invoked.

activity A business action or task which uses a resource or incurs a cost.

assemble-to-order (ATO) An environment where you open a final assembly order to assemble items that customers order. Assemble-to-order is also an item attribute that you can apply to standard, model, and option class items.

assembly An item that has a bill of material. You can purchase or manufacture an assembly item. *See also assemble-to-order, bill of material.*

assembly completion pull transaction A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed. *See operation completion pull transaction.*

assembly completion transaction A material transaction where you receive assemblies into inventory from a job or schedule upon completion of the manufacture of the assembly.

assembly move completion transaction A move transaction that completes assemblies into inventory.

assembly scrap transaction A move transaction where you charge a scrap account as you move assemblies into a Scrap intraoperation step. This reduces the value of your discrete job.

attribute collection element A collection element that represents the outcome of a process. *See collection element types.*

backflush operation A routing operation where you backflush component items.

backflush transaction A material transaction that automatically issues component items into work in process from inventory when you move or complete the assembly. Also known as post-deduct or pull. *See pull transaction*

category Code used to group items with similar characteristics, such as plastics, metals, or glass items.

category set A feature in Inventory where users may define their own group of categories. Typical category sets include purchasing, materials, costing, and planning.

collection element Represents a quality results value. An unlimited number of collection elements can be defined. Collection elements are used to create collection plan elements and specification elements.

collection number An identifier for a group of quality results.

collection plan A collection plan determines what data to collect, where to collect it, when to collect it, and what action to take based on this data. A collection plan is similar to a test or inspection plan.

collection plan element A collection element that has been added to a collection plan.

collection trigger A set of conditions that invoke quality data collection when satisfied. Collection triggers are evaluated as parent transaction are entered.

component item An item associated with a parent item on a bill of material.

concurrent manager Components of your applications concurrent processing facility that monitor and run time-consuming tasks for you without tying up your terminal. Whenever you submit a request, such as running a report, a concurrent manager does the work for you, letting you perform many tasks simultaneously.

concurrent process A task in the process of completing. Each time you submit a task, you create a new concurrent process. A concurrent process runs simultaneously with other concurrent processes (and other activities on your computer) to help you complete multiple tasks at once with no interruptions to your terminal.

concurrent queue A list of concurrent requests awaiting completion by a concurrent manager. Each concurrent manager has a queue of requests waiting in line. If your system administrator sets up simultaneous queuing, your request can wait to run in more than one queue.

concurrent request A request to complete a task for you. You issue a request whenever you submit a task, such as running a report. Once you submit a task, the concurrent manager automatically takes over for you, completing your request without further involvement from you, or interruption to your work. Concurrent managers process your request according to when you submit the request and the priority you assign to your request. If you do not assign a priority to your request, your application prioritizes the request for you.

context element A collection element associated with a quality collection transaction. Values for context elements are automatically transferred to Oracle Quality as their parent collection transaction are entered.

customer specification See **specification type**

database diagram A graphic representation of application tables and the relationships among them.

database view Provides access to an underlying database table. You do not need to know how the data is stored to use a database view. There are two types associated with Oracle Quality: the collection plan results and the collection import results database views.

deliver-to location A location where you deliver goods previously received from a supplier to individual requestors.

delivery Internal delivery of items to requestors within your organization.

department An area within your organization that consists of one or more people, machines, or suppliers. You can also assign and update resources to a department.

department class A group of departments.

discrete job A production order for the manufacture of a specific (discrete) quantity of an assembly, using specific materials and resources, in a limited time. A discrete job collects the costs of production and allows you to report those costs—including variances—by job. Also known as **work order** or **assembly order**.

discrete manufacturing A manufacturing environment where you build assemblies in discrete jobs or batches. Different from a repetitive production environment where you build assemblies on production or assembly lines at a daily rate.

distribution list A predefined list of electronic mail IDs that you can use rather than entering individual mail IDs (To, Cc, and Bcc) when defining mail message alert actions in Oracle Quality.

dynamically defined serial number Creating and assigning serial numbers as you need them, instead of creating serial numbers before their assignment.

effective date Date when an Oracle Manufacturing function is available for use. For example, this could be the date a bill of material component or routing operation becomes effective, or the date you anticipate revised item changes become part of a bill of material and can no longer be controlled by an ECO.

entity A data object that holds information for an application.

flexfield segment One of the parts of your key flexfield, separated from the other parts by a symbol you choose (such as -, /, or \). Each segment typically represents a cost center, company, item family, or color code.

flow charging A repetitive transaction method where you charge material, move, resource, and overhead transactions to a specific assembly on a line rather than a specific repetitive schedule. *See* **repetitive allocation**

folder A flexible entry and display window in which you can choose the fields you want to see and where each appears in the window.

hazard class A category of hazardous materials. Most hazardous materials belong to only one hazard class. Some materials belong to more than one hazard class and some materials do not belong to any. If a material belongs to more than one hazard class, you should list these classes in a specific order.

hidden collection plan A collection plan that consists entirely of context elements. Data collection for these collection plans occurs in the background and requires no user intervention.

inspection A procedure you perform to ensure that items received conform to your quality standards. You can use inspections to prevent payment for goods and services that fail to meet your quality standards.

intraoperation steps The particular phases within an operation. There are five intraoperation steps in Work in Process: Queue, Run, To Move, Reject, and Scrap.

inventory organization An organization that tracks inventory transactions and balances, and/or that manufactures or distributes products.

inventory transaction A record of material movement. The basic information for a transaction includes the item number, the quantity moved, the transaction amount, the accounting flexfields, and the date. *See* **material transaction**

issue transaction A material transaction to issue component items from inventory to work in process.

item Anything you make, purchase, or sell, including components, subassemblies, finished products, or supplies. Oracle Manufacturing also uses items to represent planning items that you can forecast, standard lines that you can include on invoices, and option classes you can use to group options in model and option class bills.

item category *See category.*

item specification *See specification type.*

job A category of personnel in your organization. Examples of a typical job include Vice President, Buyer, and Manager. *See also position.*

job status An Oracle Manufacturing function that lets you describe various stages in the life cycle of a discrete job and control activities that you can perform on the job.

locator Physical area within a subinventory where you store material, such as a row, aisle, bin, or shelf.

locator control An Oracle Manufacturing technique for enforcing use of locators during a material transaction.

lot A specific batch of an item identified by a number.

lot control An Oracle Manufacturing technique for enforcing use of lot numbers during material transactions thus enabling the tracking of batches of items throughout their movement in and out of inventory.

mail message action An electronic mail message distributed when an electronic mail alert is invoked by action rule processing in Oracle Quality.

mandatory collection plan A collection plan for which quality results must be entered before the parent transaction can be saved.

manual resource A resource manually charged to a discrete job or repetitive schedule.

material requirement An inventory item and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule material requirements are created based on the component items defined on the assembly's bill of materials. Issue transactions fulfill material requirements.

material transaction Transfer between, issue from, receipt to, or adjustment to an inventory organization, subinventory, or locator. Receipt of completed assemblies into inventory from a job or repetitive schedule. Issue of component items from inventory to work in process.

message action An action that displays or logs a message for the user. In Oracle Quality, message actions differ from mail message actions.

move transaction A transaction to move assemblies from operation to operation or within an operation on a discrete job or repetitive schedule.

on hold job/schedule A job or repetitive schedule not accepting further activity and is therefore untransactable.

open interface A Manufacturing function that lets you import or export data from other systems through an open interface. An example is a bar code reader device accumulating data you later import into your manufacturing system for further processing.

operating script action An operating system script invoked by action rule processing in Oracle Quality.

operation A step in a manufacturing process where you perform work on, add value to, and consume department resources for an assembly.

operation code A label that identifies a standard operation.

operation completion pull transaction A material transaction where you backflush components from inventory to work in process as you complete the operation where the component is consumed. *See also backflush transaction*

operation completion transaction A move transaction from one operation to the next where you have completed building the assembly at that operation. In this process, you can also charge resources and overheads and backflush component items.

operation sequence A number that orders operations in a routing relative to each other.

organization A business unit such as a plant, warehouse, division, department, and so on. Order Entry refers to organizations as warehouses on all Order Entry windows and reports.

output variable A variable whose output changes based upon the outcome of action rule processing. You can use output variables in alert actions to define mail IDs, display exception data, and pass parameters to concurrent program request, SQL script, and operating system script alert actions in Oracle Quality.

outside processing Performing work on a discrete job or repetitive schedule using resources provided by a supplier.

parent transaction A transaction entered in an Oracle Manufacturing product that invokes quality data collection.

Pareto's law Vilfredo Pareto's theory that a small percentage of a group accounts for the largest fraction of the impact for the group. For example, 90% of your inventory value may be attributed to 5% of your inventory items.

processing status The processing state of a row (record) in an open interface table. Common statuses include, but are not restricted to, Pending, Running, and Error. *See repetitive processing days.*

production line The physical location where you manufacture a repetitive assembly, usually associated with a routing. You can build many different assemblies on the same line at the same time. Also known as assembly line.

pull transaction A material transaction that automatically issues component items into work in process from inventory when you move or complete the assembly. Also known as post-deduct or backflush. *See backflush transaction*

purchase order A type of purchase order you issue when you request delivery of goods or services for specific dates and locations. You can order multiple items for each planned or standard purchase order. Each purchase order line can have multiple shipments and you can distribute each shipment across multiple accounts. *See standard purchase order and planned purchase order*

purchase order receipt *See receipt*

push transaction A material transaction to issue component items from inventory to work in process before you manufacture the assembly.

quality action An action, such as sending electronic mail or putting a job on hold, triggered when an action rule is evaluated and found to be true. For example, if quality results values indicate that a critical measurement for a discrete job assembly is out-of-tolerance, the job is put on hold

quality data repository The database table which stores quality data.

quality results Actual results recorded during quality data collection. These results might include test or inspection outcomes, measurements taken, details of defects, lot attributes, start and stop times for machines and resources.

quantity accepted The number of items you accept after inspection.

quantity completed For an operation on a discrete job or repetitive schedule, the quantity of the assembly that you transacted beyond the Run intraoperation step. For a discrete job or repetitive schedule, the quantity of the assembly that you received into inventory.

quantity issued The quantity of a component item issued from inventory to a discrete job or repetitive schedule to fulfill a WIP material requirement.

quantity rejected The number of items you reject after inspection.

queue An intraoperation step in an operation where assemblies are waiting to be worked on. The default intraoperation step for every operation in a routing.

receipt A shipment from one supplier that can include many items ordered on many purchase orders.

recipient Anyone that receives a mail message as a result of mail message action rule processing.

reference designator An optional identifier you can assign to a component on a bill. For example, when the bill requires four of a component, you can assign four reference designators to that component, one for each usage.

reference information collection element A collection element that represents an Oracle Application object such as an item, lot number, serial number, routing, supplier, and customer. *See collection element types*

reject An option you use to indicate that you do not want to approve a document. Purchasing returns the document to its owner for modification and resubmission if appropriate.

repetitive manufacturing A manufacturing environment where you build assemblies repetitively, on production lines, rather than in discrete jobs or batches.

repetitive schedule A production order for the manufacture of an assembly on a continuous basis as defined by a daily rate, using specific materials and resources, over a period of time. A repetitive schedule collects the costs of production, but you report those costs by period rather than by schedule. Also known as flow order or scheduled rate.

- repetitive schedule status** An Oracle Manufacturing function that lets you describe various stages in the life cycle of a repetitive schedule and control activities that you can perform on the schedule.
- resource** Anything of value, except material and cash, required to manufacture, cost, and schedule products. Resources include people, tools, machines, labor purchased from a supplier, and physical space.
- resource charge** *See resource transaction.*
- resource requirement** A resource and quantity needed to build an assembly on a job or repetitive schedule. Discrete job and repetitive schedule resource requirements are created based on the resource requirements specified on the assembly's routing. Resource transactions fulfill resource requirements.
- resource transaction** A transaction where you automatically or manually charge resource costs to a discrete job or repetitive schedule.
- return material authorization (RMA)**
Permission for a customer to return items. Receivables allows you to authorize the return of your sales orders as well as sales made by other dealers or suppliers, as long as the items are part of your item master and price list.
- reversing transaction** A transaction that reverses a previously processed material, move, resource, or overhead transaction.
- revision** A particular version of an item, bill of material, or routing.
- revision control** An inventory control option that tracks inventory by item revision and forces you to specify a revision for each material transaction.
- route sheet** A report that provides full routing, operation, resource, and material requirement details for jobs and repetitive schedules. Typically used to know how, when, where, and who builds an assembly. Also known as traveler.
- routing** A sequence of manufacturing operations that you perform to manufacture an assembly. A routing consists of an item, a series of operations, an operation sequence, and operation effective dates.
- run** An intraoperation step where you move assemblies that you are working on at an operation.
- scrap** An intraoperation step where you move assemblies that cannot be reworked or completed.
- scrap account** An account that you may use to charge scrap transactions.
- serial number** A number assigned to each unit of an item and used to track the item.
- serial number control** A manufacturing technique for enforcing use of serial numbers during a material transaction.
- serialized unit** The unique combination of a serial number and an inventory item.
- shelf life** The amount of time an item may be held in inventory before it becomes unusable.
- shop floor status** An Oracle Manufacturing function that lets you restrict movement of assemblies at an operation and intraoperation step within a discrete job or repetitive schedule.
- short code** An abbreviated notation of a collection element value.

specification Describes the requirements of a product in Oracle Quality. You can define specifications for the key characteristics of the products you produce.

specification element A collection element copied or assigned to a specification.

specification limits Numeric values used to specify an acceptable range of values for a quality element. Consists of a target value, and upper and lower control limit, and an upper and lower reasonableness limit.

specification subtype A user-defined subclassification of the standard specification types: customer, vendor, or an item/item category. For example a customer specification can be assigned a specification subtype that indicates the customer's plant location.

specification type A classification for specifications. Specifications can be specific to a customer, vendor, or an item/item category.

SQL validation statement A statement written in SQL to customize action details.

SQL script action An SQL script invoked by action rule processing in Oracle Quality.

subassembly An assembly used as a component in a higher level assembly.

subinventory Subdivision of an organization, representing either a physical area or a logical grouping of items, such as a storeroom or receiving dock.

supplier Provider of goods or services.

supplier purchasing hold A hold condition you place on a supplier to prevent new purchasing activity on the supplier. You cannot approve purchase orders for suppliers you placed on hold.

target value A number which indicates the desired result of a given quality characteristic. Can also be used to denote the expected average of values for a quality characteristic.

to move An intraoperation step where assemblies can either be completed to a subinventory or wait to be moved to another operation.

transaction date The date you enter and Oracle Manufacturing maintains for any manufacturing transaction. The date must fall within an open accounting period and be greater than the release date for transactions on a discrete job or repetitive schedule.

transaction interface An open interface table through which you can import transactions. *See open interface.*

transaction manager A concurrent program that controls your manufacturing transactions.

transaction worker An independent concurrent process launched by a transaction manager to validate and process your manufacturing transactions.

upper and lower specification limits Defines a valid range of acceptable values.

variable collection element A collection element that represents numeric measurements. *See collection element types.*

vendor *See supplier.*

WIP move resource A resource automatically charged to a discrete job or repetitive schedule by a move transaction. Resources are automatically charged when a forward move occurs, or uncharged when a backward move occurs.

work in process An item in various phases of production in a manufacturing plant. This includes raw material awaiting processing up to final assemblies ready to be received into inventory.

worker An independent concurrent process that executes specific tasks. Programs using workers to break large tasks into smaller ones must coordinate the actions of the workers.

Index

A

- Action details, 3 – 24
- Action log entries
 - deleting, 10 – 45
 - finding, 10 – 45
 - posting, 6 – 20
 - viewing, 10 – 45
- Action Log window, Viewing and Deleting
 - Action Log Entries, 10 – 45
- Action rules
 - collection element, 3 – 23
 - sequencing, 3 – 25
- Actions
 - alert, 3 – 21
 - application specific, 3 – 21
 - associate with collection plan element action rules, 3 – 28, 5 – 26
 - message, 3 – 20
 - processing, 6 – 16
 - types of, 3 – 20
 - user-defined, 3 – 21
- Actions:Concurrent Program window
 - defining concurrent request alerts for collection elements, 3 – 31
 - defining concurrent request alerts for collection plan elements, 5 – 30
- Actions:Operating System Script window
 - defining operating system script alerts for collection elements, 3 – 31
 - defining operating system script alerts for collection plan elements, 5 – 31
- Actions:Send Electronic Mail window
 - defining electronic mail alerts for collection elements, 3 – 30
 - defining electronic mail alerts for collection plan elements, 5 – 29
- Actions:SQL Script window
 - defining SQL script alerts for collection elements, 3 – 32
 - defining SQL script alerts for collection plan elements, 5 – 32
- Alert actions, 3 – 21
- Analysis, quality results, 10 – 2
- Application specific actions, 3 – 21
- Assign a Value window, Defining Actions that Assign a Value, 5 – 35
- Assign value actions, user-defined, 3 – 21
- Assignment
 - default values, 6 – 5
 - target values and specification limits, 6 – 4
- Attachments
 - collection plan, B – 2
 - result line, B – 2
 - specification, B – 2
 - viewing while entering quality results, 6 – 14
 - viewing while updating quality results, 6 – 14

- Attachments window
 - Attaching Files to Collection Plans, B – 3
 - Attaching Files to Specifications, B – 3

B

- Background, data collection, 6 – 8

C

- Calculating

- Cp, 7 – 31, 10 – 31
 - Cpk, 7 – 31, 10 – 30

- Chart description, control chart, 10 – 27

- Chart name

- control chart, 10 – 27
 - Histogram, 10 – 16
 - Pareto chart, 10 – 12
 - trend chart, 10 – 20

- Chart title

- control chart, 10 – 27
 - histogram, 10 – 17
 - Pareto chart, 10 – 12
 - trend chart, 10 – 20

- Code

- collection element type, 3 – 5
 - collection plan type, 5 – 5

- Collection element

- collection plan, 5 – 7
 - histogram, 10 – 17
 - name, 3 – 12

- Collection Element Action Rules Report, 12 – 3

- Collection element types, 3 – 4

- attribute, 3 – 4
 - defining, 3 – 5
 - enabling, 3 – 5
 - reference information, 3 – 5
 - variable, 3 – 4

- Collection Element Types window, Defining

- Collection Element Types, 3 – 5

- Collection Element Usages Report, 12 – 4

- Collection elements, 3 – 2

- character, 3 – 13
 - date, 3 – 13
 - enabling, 3 – 13

- non–displayed, 6 – 8
 - numeric, 3 – 13
 - predefined, 3 – 7
 - viewing, 3 – 37

- Collection Elements Report, 12 – 6

- Collection Elements window

- Defining Collection Elements, 3 – 12
 - deleting collection elements, 3 – 15

- Collection Import, 6 – 24

- Collection plan, attachments, B – 3

- Collection Plan Action Rules Report, 12 – 8

- Collection Plan Details Report, 12 – 10

- Collection plan element, 5 – 7

- Collection plan elements

- defining, 5 – 17
 - maximum number of, 5 – 17
 - minimum number of, 5 – 17

- Collection Plan Summary Report, 12 – 11

- Collection plan type

- FGI inspection, 5 – 4
 - field returns, 5 – 4
 - receiving inspection, 5 – 4
 - service requests, 5 – 4
 - WIP inspections, 5 – 4

- Collection plan types, 5 – 4

- defining, 5 – 4
 - enabling, 5 – 5

- Collection Plan Types window, Defining

- Collection Plan Types, 5 – 4

- Collection plans, 5 – 2

- viewing, 5 – 48

- Collection Plans window

- copying all collection elements from an existing plan, 5 – 16
 - copying collection elements, 5 – 13
 - Creating Collection Plans, 5 – 12, 5 – 15
 - creating database views for collection import, 5 – 14, 5 – 47
 - deleting collection plans, 5 – 47
 - updating collection plans, 5 – 46
 - updating database views, 5 – 46

- Collection transactions, 5 – 39

- Collection Transactions window, Associating Transactions with Collection Plans, 5 – 43

- Column sequence number, ReportWriter report, 10 – 43
- Common collection plan elements, 5 – 7
- Conditions
 - collection trigger, 5 – 44
 - for collection element actions, 3 – 27
 - for collection plan element actions, 5 – 26
 - view descriptive statistic, 10 – 34
 - view quality results, C – 2
- Context element, dependencies, 5 – 7
- Control Chart window, Creating and Viewing Control Charts, 10 – 26
- Copy Actions window, Copying All Action Rules and Related Actions from Collection Elements, 5 – 25
- Copy settings, 10 – 4
- Copy Specifications window, Copying All Specifications Elements, 4 – 10
- Copy Values window, Copying All Values to Collection Plan Elements, 5 – 20
- Copying settings, 10 – 7
- Cp
 - calculating, 7 – 31, 10 – 30
 - process potential index, 10 – 30
- Cp and Cpk, 10 – 30
- Cpk
 - calculating, 7 – 31, 10 – 31
 - process performance index, 10 – 31

D

- Data collection
 - background example, 6 – 8
 - finding specifications example, 6 – 21
 - mandatory example, 6 – 7
 - options, 1 – 8
- Data type, collection element, 3 – 13
- Data types, functions, 10 – 9
- Database views
 - collection import results, 5 – 6
 - collection plan results, 5 – 6
- Decimal precision, collection element, 3 – 14

- Default value
 - assignment, 6 – 5
 - collection element, 3 – 14
 - collection plan elements, 5 – 18
- Deleting, action log entries, 10 – 45
- Dependencies
 - between context elements, 5 – 7
 - between elements and actions, 5 – 24
- Description
 - collection element type, 3 – 5
 - collection plan type, 5 – 5
 - collection transaction, 5 – 43
 - histogram, 10 – 17
 - Pareto chart, 10 – 13
 - short code, 3 – 16, 5 – 21
 - trend chart, 10 – 21
- Descriptive Statistics window, Viewing Descriptive Statistics, 10 – 32
- Details window, Viewing Quality Results Details, 10 – 37
- Diagram
 - Quality business flow, 1 – 15
 - Quality process flow, 1 – 16
- Disabling, collection elements, 3 – 13
- Displayed, collection plan elements, 5 – 18
- Duplicating, quality results records, 6 – 11, 7 – 12, 9 – 11

E

- Effective dates
 - collection element type, 3 – 5
 - collection plan, 5 – 12, 5 – 15
 - collection plan type, 5 – 5
 - specification, 4 – 8
- Element type, collection, 3 – 13
- Enabling
 - collection element types, 3 – 5
 - collection elements, 3 – 13
 - collection plan elements, 5 – 18
 - collection plan types, 5 – 5

Enter Quality Results window, Entering Quality Results Directly, 6 – 10
Errors window, viewing failed collection import details, 6 – 26
Examples, user-defined formula, 5 – 36

F

Failed collection import record details, viewing, 6 – 26
Failed collection import records, updating, 6 – 26
failed collection import records, resubmitting, 6 – 26
Find Collection Elements window, Viewing Collection Elements, 3 – 37
Find Specifications window
 Finding Specifications While Entering Quality Results, 6 – 12, 6 – 22
 selecting specifications while entering quality results, 6 – 12, 6 – 22
Finding, action log entries, 10 – 45
Folders
 Lot Quality, 10 – 38
 Serial Number Quality, 10 – 40
 Update Collection Import, 6 – 25
 Viewing Quality Results, 10 – 35
Formula, user-defined, 5 – 34
From and to values, collection triggers, 5 – 44
Function, ReportWriter report, 10 – 43
Function security, 2 – 7
Functions, data types, 10 – 9

H

Hint, collection element, 3 – 13
Histogram window, Creating and Viewing Histograms, 10 – 16

I

In List Value window, Creating an In List, C – 6
ISO 9000, 11 – 2

Item
 specification, 4 – 8
 specification basis, 4 – 8
Item category
 specification, 4 – 8
 specification basis, 4 – 8
Item revision, specification, 4 – 8
Item specification, 4 – 8

L

Launch Collection Import Manager window, Importing Quality Results Data, 12 – 12
Lot Quality folder window, Viewing Quality Results by Lot Number, 10 – 38

M

Mandatory
 collection element, 3 – 13
 collection plan element, 5 – 18
 data collection, 6 – 7
Mandatory transactions, defining, 5 – 43
Mean, used in cp/cpk calculation, 10 – 30
Meaning
 collection element type, 3 – 5
 collection plan type, 5 – 5
Message actions, 3 – 20

N

Name
 collection element, 5 – 17
 collection plan, 5 – 12, 5 – 15
 specification, 4 – 8
Navigator paths, A – 2

O

Oracle Quality, overview, 1 – 6
Output Variables window, Specifying Output Variables for Action Details, 3 – 35

P

- Parameters window, Importing Quality Results Data, 12 – 12
- Pareto Chart window, Creating and Viewing Pareto Charts, 10 – 11
- Plan type, collection, 5 – 13, 5 – 16
- Pre-defined collection elements, WIP collection elements, 3 – 7
- Predefined collection elements, 3 – 7
 - attribute collection elements, 3 – 11
 - common collection plan elements, 5 – 7
 - Inventory collection elements, 3 – 10
 - Order Entry collection elements, 3 – 11
 - Purchasing collection elements, 3 – 8
 - reference information, 3 – 7
 - Service collection elements, 3 – 9
- Primary element
 - Pareto x-axis, 10 – 12
 - Trend chart y-axis, 10 – 21
- Processing, actions, 6 – 16
- Profile options, 2 – 9
- Prompt
 - collection element, 3 – 13
 - collection plan element, 5 – 18

Q

- Quality actions, defining for collection elements, 3 – 27
- Quality Actions window
 - Defining Collection Element Actions, 3 – 27
 - Defining Collection Plan Element Actions, 5 – 25
- Quality data collection, 1 – 8
- Quality inquiry, responsibilities, 2 – 7
- Quality management, introduction, 1 – 2
- Quality process flow diagram, 1 – 16
- Quality results
 - analysis, 10 – 2
 - importing, 12 – 12
- Quality results lines, attachments, B – 3
- Quality Results Report, 12 – 13

- Quality Results ReportWriter window, Using the Quality Results ReportWriter, 10 – 42
- Quality Specifications Report, 12 – 14
- Query operators, C – 4
- QuickCodes
 - collection element type description, 3 – 5
 - collection element type effective dates, 3 – 5
 - collection element type meaning, 3 – 5
 - collection plan type description, 5 – 5
 - collection plan type effective dates, 5 – 5
 - collection plan type meaning, 5 – 5

R

- Reasonable limits, specification element, 4 – 12
- Reasonable range, collection element, 3 – 19
- Reference information collection elements, application specific, 3 – 7
- Related actions, collection element, 3 – 23
- Report description, ReportWriter report, 10 – 43
- Report name, ReportWriter report, 10 – 43
- Report title, ReportWriter report, 10 – 43
- Reported column, ReportWriter report, 10 – 43
- Reporting
 - functions, 10 – 8
 - groups, 10 – 8
- Reporting length, collection element, 3 – 13
- Reports, 10 – 42
 - Collection Element Action Rules, 12 – 3
 - Collection Element Usages, 12 – 4
 - Collection Elements, 12 – 6
 - Collection Plan Action Rules, 12 – 8
 - Collection Plan Details, 12 – 10
 - Collection Plan Summary, 12 – 11
 - Quality Results, 12 – 13
 - Quality Specifications, 12 – 14
- Responsibilities, quality inquiry, 2 – 7
- Results
 - collecting quality results as you transact, 7 – 11
 - creating custom reports, 10 – 42
 - deleting, 6 – 17

- entering, 6 – 10
- entering quality data for receiving transactions, 8 – 8
- exporting, 10 – 47
- updating, 6 – 17

S

- Security functions, 2 – 7
- Sequence number, 5 – 18
 - collection element action rules, 3 – 27
- Sequencing
 - action rules, 3 – 25
 - collection plan element action rules, 5 – 25
- Serial Number Quality folder window,
 - Viewing Quality Results by Serial Number, 10 – 40
- Setting up, 2 – 2
- Settings, copying, 10 – 7
- Short code
 - collection element values, 3 – 16
 - collection plan element values, 5 – 20, 5 – 21
- Special menu, options, D – 2
- Specification elements
 - defining for specification elements, 4 – 10
 - enabling, 4 – 11
- Specification limits, 4 – 4
 - defining for collection elements, 3 – 18
- Specification range
 - collection element, 3 – 18
 - specification element, 4 – 11
- Specification type
 - customer, 5 – 22
 - item, 5 – 22
 - none, 5 – 22
 - supplier, 5 – 22
- Specification Types window, Designating Specification Types for Collection Plans, 5 – 22
- Specifications, 4 – 2
 - attachments, B – 3
- Specifications for, data collection, 6 – 21
- Specifications Limits window, Defining Collection Element Specification Limits, 3 – 18

- Specifications window
 - copying individual collection elements, 4 – 11
 - Defining Specifications, 4 – 7
- SQL validation statement, collection element, 3 – 14
- Standard deviation, used in cp/cpk calculation, 10 – 30
- Statistic name, 10 – 32
- Statistical element, 10 – 33
- Statistical Results window
 - calculating statistical results, 10 – 34
 - viewing statistical results, 10 – 34

T

- Target value
 - collection element specification, 3 – 18
 - specification element, 4 – 11
- Templates, Creating collection plans from, 5 – 10
- Token name, output variable, 3 – 35
- Totaling columns, ReportWriter report, 10 – 43
- Transaction description, 5 – 43
- Transactions, collection, 5 – 39
- Trend chart window, Creating and Viewing Trend Charts, 10 – 19
- Trigger name, collection transaction, 5 – 44

U

- Unit of measure, collection element, 3 – 14
- UOM, collection element, 3 – 14
- Update Collection Import window, Updating Collection Import, 6 – 25
- Update Quality Results window, Updating and Deleting Quality Results, 6 – 17
- User-defined
 - formula, 5 – 34
 - formula examples, 5 – 36
- User-defined limits
 - collection elements, 3 – 18
 - specification element, 4 – 11

Using Oracle Quality
tracking and monitoring quality results,
1 - 11
tracking first article inspection defects, 1 - 11
tracking lot controlled items, 1 - 12
tracking serial controlled items, 1 - 11

V

Values window
Copying Values to Collection Plan Elements,
5 - 20, 5 - 21
Defining Collection Element Values, 3 - 16
deleting collection element values, 3 - 16
deleting collection plan element values,
5 - 21
View Collection Elements Summary window,
Viewing Collection Elements, 3 - 37
View Collection Elements window, Viewing
Collection Elements, 3 - 37
View Collection Plans Summary window,
Viewing Collection Plans, 5 - 48
View Collection Plans window, Viewing
Collection Plans, 5 - 48

View Quality Results folder window, Viewing
Quality Results, 10 - 35
Viewing, action log entries, 10 - 45

W

Windows, navigator paths, A - 2

X

X-axis element
Pareto chart, 10 - 12
trend chart, 10 - 20

Y

Y-axis element
Pareto chart, 10 - 13
trend chart, 10 - 21
Y-axis function
Pareto chart, 10 - 13
trend chart, 10 - 21

Reader's Comment Form

Oracle Quality User's Guide A57767-01

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information we use for revision.

- Did you find any errors?
- Is the information clearly presented?
- Do you need more information? If so, where?
- Are the examples correct? Do you need more examples?
- What features did you like most about this manual? What did you like least about it?

If you find any errors or have any other suggestions for improvement, please indicate the topic, chapter, and page number below:

Please send your comments to:

Oracle Applications Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065 USA
Phone: (415) 506-7000 Fax: (650) 506-7200

If you would like a reply, please give your name, address, and telephone number below:

Thank you for helping us improve our documentation.