

Constructing a Power Station



ADDON.IDESISE&C

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Icons

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Typographic Conventions

Type Style	Description
<i>Example text</i>	Words or characters that appear on the screen. These include field names, screen titles, pushbuttons as well as menu names, paths and options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, titles of graphics and tables
EXAMPLE TEXT	Names of elements in the system. These include report names, program names, transaction codes, table names, and individual key words of a programming language, when surrounded by body text, for example, SELECT and INCLUDE.
Example text	Screen output. This includes file and directory names and their paths, messages, names of variables and parameters, source code as well as names of installation, upgrade and database tools.
Example text	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Pointed brackets indicate that you replace these words and characters with appropriate entries.
EXAMPLE TEXT	Keys on the keyboard, for example, function keys (such as F2) or the ENTER key

Contents

Constructing a Power Station	6
Data Used in This IDES Process.....	9
Organizational Structures FI/CO.....	10
Master Data FI/CO	11
Logistics Organizational Structures	12
Logistics Master Data	13
Concept and Product Development	16
Displaying a Standard WBS	18
Displaying a Standard Network	20
Displaying a Material.....	22
Processing RFQs and Quotations	24
Creating an SD Inquiry.....	26
Creating an Operational Project	28
Assigning a Project Inquiry to an Account.....	30
Scheduling the Project	31
Requests for Quotation	33
Determining a Delivery Date	34
Creating an MM Request for Quotation	35
Creating an MM Quotation	37
Comparing Prices.....	38
Assigning Materials in a Project.....	39
Costing	41
Make or Buy Decision	42
Creating a Simulation.....	44
Changing the Network for the Generator	45
Planning Material Costs	48
Comparing the Operative Project With the Simulation	50
Sales Pricing / Creating an SD Quotation	51
Rejecting a Quotation / Renegotiating	54
Creating a New Quotation on the Basis of the Simulation Version	55
Order Entry Processing	57
Copying the Simulation to an Operational Project	59
Setting the Simulation to Inactive	60
Creating an Order and Assigning it to the Project	61
Creating the Billing Plan	63
Displaying Revenues	67
Creating an Invoicing Plan	68
Releasing a Project Using a Basic Engineering Confirmation	70
Order Processing	72
Component Processing	74
Checking the BOM.....	76
Maintaining a Reference Point for the Network Activity	77
Checking the Stock/Requirements List.....	79

Executing a BOM Transfer	80
Executing a Material Requirements Planning Run	82
Creating a Purchase Order	84
Posting the Goods Receipt for the Purchase Order	86
Entering an Invoice Receipt	88
Assigning BOM Material in a Project	90
Entering Unplanned Costs	92
Confirmation from the Construction Site Using CATS	94
Generating Pools of Confirmations	95
Entering a Confirmation Using the Time Sheet.....	97
Displaying Confirmed Data	99
Approving Confirmed Data.....	100
Displaying a Reason for Rejection.....	103
Transferring Data to the Project System.....	104
Cash Management Project	105
Creating Down Payment Requests.....	108
Calling Up The Customer Payment Report.....	110
Posting Incoming Down Payments	111
Confirming an Activity	113
Creating Partial Invoices	114
Posting Incoming Payments.....	115
Displaying the Document Flow for the Sales Order.....	116
Transferring Payment.....	117
Periodic Processing.....	118
Entering the Settlement Rule for the WBS Element	120
Determining the Results Analysis Date	121
Executing Results Analysis in the Plan Version.....	122
Displaying the Project-Specific Result	125
Transferring Sales and Profit Planning Data to CO-PA.....	126
Displaying the Cross-Project Results	127
Confirming the Detail Engineering	128
Calculating Overhead Rates	131
Executing Progress Analysis.....	132
Displaying the Progress Report	135
Executing Results Analysis	137
Determining the Project Incoming Orders.....	138
Displaying the Incoming Orders and Order Stock.....	140

Constructing a Power Station

Purpose

In this process, you carry out project processing for the construction of a power station.

A typical production method for the construction of a power station is **Make-to-Order Production**, which involves considerable risks with regard to technical solutions, costs and dates.

This process is characterized by the following:

- When the order is placed, there is a **comprehensive quotation phase**.
- The power station is characterized by its **complexity** and **one-off** nature. This leads to a large portion of order-specific project and engineering activities. To depict the functional and spatial product structure, we require various methods from Engineering Data Management during the entire life cycle.
- The order lead time (from the quotation to the processing of the warranty) lasts several years. **Long lead times** require corresponding control mechanisms for individual activities and results. The success of the project is to be ensured through integrated planning, monitoring and controlling of the capacities, materials, costs and dates. You also need to plan and monitor the down payments and payments.
- The expenses required to convert the customer requests into the final product are very high. The task is made even more difficult by constant **changes**. The flexibility and speed with which an enterprise can react to these changes during the project are fundamental competitive factors. Engineering Change Management can be used as a crucial component, for example, with respect to product liability.

Process Flow

During the project, you need to integrate the various business processes and approaches into the different phases of the value creation process. We detail the project management functions at the corresponding points in the process. However, we have summarized central functions, such as PS Cash Management.

Responsibility for the overall processing of the project is taken by IDES Canada. This consists of planning, engineering, procurement and construction of the power station.

1. [Concept and Product Development \[Page 16\]](#)

IDES Canada has the know-how required to build the power station. This know-how is managed in the SAP System using PDM functions. This means that knowledge and experience are stored in master data, such as the standard WBS, standard networks and technical locations.

2. [Creating RFQs and Quotations \[Page 24\]](#)

IDES Canada receives a request for quotation (RFQ) from North Energy Ltd / Calgary regarding the construction of a power station.

This is followed by an extensive quotation phase before the order is placed. The activities, resources and costs available for internal project planning, as well as the assessment of vendor quotations, ensures that you can select a quotation that is attractive from both a technical and economic perspective. There is a comprehensive basic engineering phase. Project-specific documents (specifications) are created, which describe the functional requirements of the power

station. When the order is placed, these documents provide the basis for a more detailed description in the technical departments.

3. [Processing the Incoming Order \[Page 57\]](#)

The project-specific data determined during quotations processing are checked against the incoming order, and then revised and refined as required. When the results of the technical inspection are ready, you report back to Basic Engineering, thereby releasing the project for additional processing in the specialist departments. You also create a project-specific cash budget planning.

4. [Order Processing \[Page 72\]](#)

Based on the specifications of Basic Engineering, we describe in detail the individual components of the power station, split by specialist area. On the basis of these specifications, you produce or procure the components.

The location at which the power station is to be constructed, corresponds to the construction site to which the power station parts and the tools are to be delivered. Assembly and commissioning take place at the construction site.

All of the cost centers involved in the project confirm their work. These confirmations are made using time sheets (CATS).

The detailed recording of components, the issuing of orders, and the control of deliveries and activities allows you to retain a clear cost overview so that the planned values from the cost estimate are not exceeded.

[PS Cash Management \[Page 105\]](#) evaluates the planned cash flow for the project and monitors the cash flows on the credit and debit sides.

[Periodic Processing \[Page 118\]](#) in Project Controlling involves the creation of reports, which promote transparency of the value flows for the project.

You calculate the overhead costs for the cost estimate of the project costs.

The comparison of costs and revenues is important for determining the profitability of the project (results analysis, calculating the incoming orders).

Progress analysis lets you determine the progress of the project and its current status.

Data Used in This IDES Process

If you want to be able to perform this business process, please ensure that the following data has been maintained in the R/3 system:

- Organizational Structures

See also:

[Organizational Structures FI/CO \[Page 10\]](#)

[Logistics Organizational Structures \[Page 12\]](#)

- Master Data

See also:

[Organizational Structures FI/CO \[Page 11\]](#)

[Logistics Master Data \[Page 13\]](#)

- Customizing Settings

You can find further information in the prerequisites section for each of the individual processes or procedures.

Organizational Structures FI/CO

Organizational Structures FI/CO

Field	Data	Usage
Company code	4000	
FM area	4000	
Operating concern	IDEA	
Controlling area	2000	CO North America
Cost center group	H4500	Plant engineering and construction
Cost center group	H4510	Project management
Cost center group	H4520	Engineering
Cost center group	H4530	Procurement
Cost center group	H4540	Site processing/assembly
Cost center	4-5100	Project management
Cost center	4-5200	Engineering
Cost center	4-5300	Procurement
Cost center	4-5400	Assembly

Master Data FI/CO

Cost Centers

Cost center	Activity type	Price	Allocation cost element
4-5100 (Project management)	1463 (Manager hours)	300	626300 (DIAA Managers)
4-5200 (Engineering)	1429 (Basic engineering)	200	622000 (DIAA Engineering)
4-5200 (Engineering)	1430 (Detail engineering)	150	622000 (DIAA Engineering)
4-5300 (Procurement)	5400 (Procurement - power plant)	150	618100 (DIAA management)
4-5400 (Assembly)	4821 (Site supervisor hour)	200	626300 (DIAA Managers)
4-5400 (Assembly)	4822 (Foreman hour)	150	622100 (DIAA Foremen)
4-5400 (Assembly)	4823 (Construction worker hour)	100	622200 (DIAA Auxiliary workers)
4-5400 (Assembly)	1421 (Labor hour)	100	619000 (DIAA Production)

Activity Types

Activity type	1421	Labor hours
Activity type	1429	Basic engineering
Activity type	1430	Detail engineering
Activity type	1463	Project manager hours
Activity type	5400	Employee hours
Activity type	4821	Site supervisor hours
Activity type	4822	Foreman hours
Activity type	4823	Construction worker hours

Logistics Organizational Structures

Logistics Organizational Structures

Field	Data	Usage
Plant	4000	Toronto
Work center	4100	Project management
Work center	4200	Assembly
Work center	4300	Procurement
Work center	4000	Engineering
Sales organization	4000	Toronto, Canada
Distribution channel	40	New business
Purchasing organization	4000	IDES Canada
Warehouse	4000	Warehouse, construction site

Logistics Master Data

Project System

Field	Data	Usage
Standard WBS	A-20000	Power plant
Standard network	A-20201	Basic engineering
Standard network	A-20301	Power plant - control station technology
Standard network	A-20302	Power plant - fuel supply
Standard network	A-20303	Power plant - vessel
Standard network	A-20304	Power plant - gas turbine
Standard network	A-20305	Power plant - cooling system
Standard network	A-20306	Power plant - steam turbine
Standard network	A-20307	Power plant - generator
Standard network	A-20308	Power plant - transformer
Standard network	A-20309	Power plant - administration/social building
Standard network	A-20401	Power plant - site equipment
Standard network	A-20402	Power plant - earthwork
Standard network	A-20403	Power plant - carcass
Standard network	A-20404	Power plant - assembly
Standard network	A-20405	Power plant - interior work
Standard network	A-20406	Power plant - putting into operation
Standard network	A-20407	Power plant - site clearance

Functional Location

Field	Data	Usage
Material	IECPP	Power plant
Material	IECPP-01	Control station technology
Material	IECPP-02	Energy area
Functional Location	IECPP-02-01	Vessel
Functional Location	IECPP-02-02	Gas turbine
Functional Location	IECPP-02-03	Steam turbine
Functional Location	IECPP-02-04	Generator
Functional Location	IECPP-02-05	Transformer

Logistics Master Data

Functional Location	IECPP-03	Cooling system
Functional Location	IECPP-04	Fuel supply
Functional Location	IECPP-04-01	Port of shipping
Functional location	IECPP-02-01	Mechanical handling/producing practice
Functional location	IECPP-05	Administration/social building

Material for Sales View

Field	Data	Usage
Material	IECPP-1-PP01	Power plant
Material	IECPP-1-EN01	Engineering
Material	IECPP-1-PR01	Procurement
Material	IECPP-1-IN01	Assembly
Material	IECPP-1-CP01	Components
Material	IECPP-1-PC01	Control station technology
Material	IECPP-1-FS01	Fuel supply
Material	IECPP-1-VE01	Vessel
Material	IECPP-1-TU01	Gas turbine
Material	IECPP-1-CS01	Cooling system
Material	IECPP-1-TU02	Steam turbine
Material	IECPP-1-GE01	Generator
Material	IECPP-1-TR01	Transformer
Material	IECPP-1-BU/01	Administration/social building
Material	IECPP-1-SP-01	Construction site

Material for Internal View

Field	Data	Usage
Material	IECPP-2-VE01	Vessel
Material	IECPP-2-VE02	Vessel pipe
Material	ICEPP-2-GE01	Generator
Material	IECPP-2-GE11	Rotor
Material for advance procurement	IECPP-2-GE12	Bolts
Material for advance procurement	IECPP-2-GE13	Sound protection
Material	IECPP-2-GE14	Posts and beams
Material	IECPP-2-GE15	Casing

Concept and Product Development

Concept and Product Development

Purpose

IDES Canada, the Canadian subsidiary of the North American IDES corporate group, has comprehensive knowledge of power plant construction.

This knowledge is included in templates and documents such as work breakdown structures, networks, BOMs, technical drawings and instructions. This know-how is managed in the SAP System using PDM functions. In other words, the knowledge and experiences are stored in master data and, for example, standard WBS, standard networks and functional locations.

Project-independent definition of the templates ensures that when the quotation is processed, complete and correct information is available to estimate and limit technical and economical risks and to keep costing and planning efforts to a minimum.

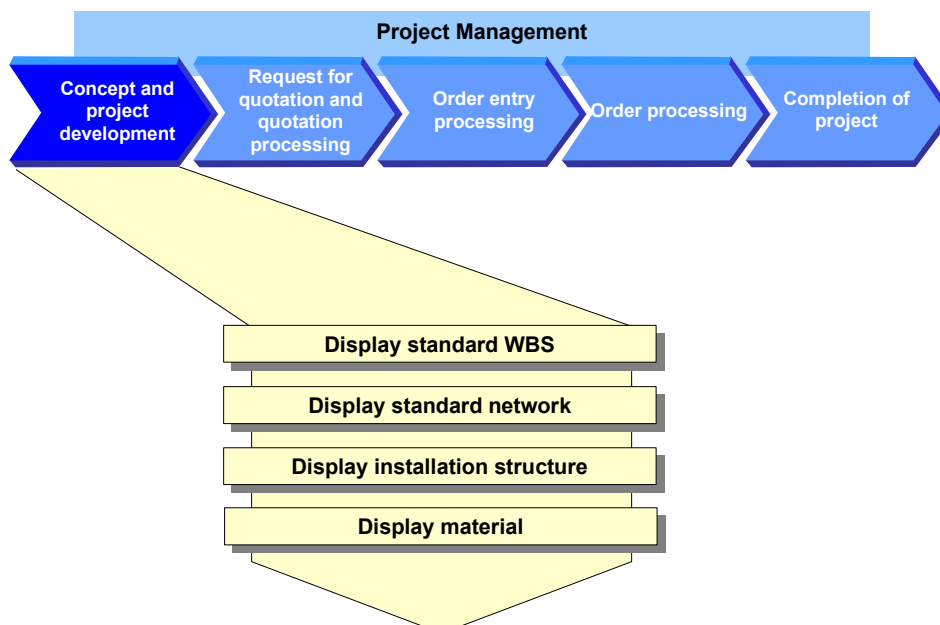
The templates are amended regularly to reflect changes and improvements in technology and certain areas of business and experiences from operational business.

Process Flow



You do not have to perform these steps as they have no influence on the further process. However, it helps your understanding if you make yourself familiar with the basic structures.

The following graphic clarifies the process:



1. [Display Standard WBS \[Page 18\]](#)

Concept and Product Development

A standard work breakdown structure (WBS) serves as template for creating or enhancing an operative project structure. You can use this standard WBS to automatically generate a project with all the objects and hierarchical relationships required for processing a customer inquiry.

2. [Displaying a Standard Network \[Page 20\]](#)

The planned process flow (for the construction of a power plant) is displayed in networks. Appropriate activities with their time-based dependencies are created for the individual tasks. These milestones are used within a project to control when certain phases in the process have been achieved. You can adapt predefined networks when you process a customer inquiry, a quotation or a sales order.

3. Functional Locations

You can use functional locations to help you structure the operational systems. A project-independent structure for the power plant serves as template for processing quotations. It has to be adapted to suit the customer's needs for an operational project.

4. [Displaying a Material \[Page 22\]](#)

Materials that are used in the construction of a power plant are stored in a material master record.

Displaying a Standard WBS

Displaying a Standard WBS

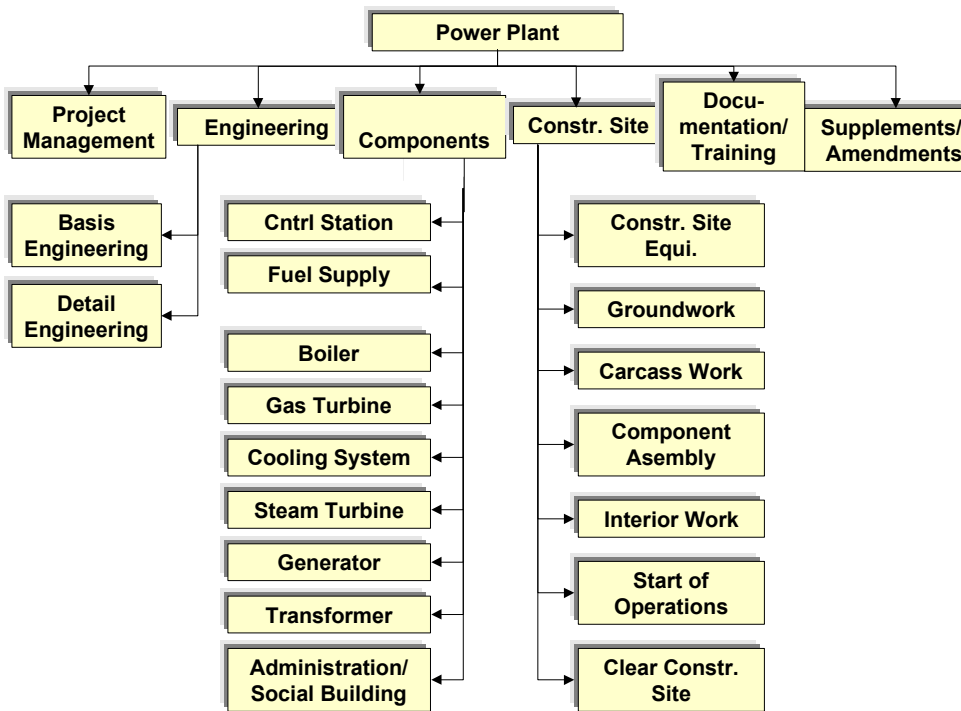
Use

You have reflected your experience in standard structures so that large projects can be processed quickly and in a standard way. Project activities to be performed are displayed in the form of a hierarchy in the work breakdown structure.

You can find further information in the SAP Library under

Logistics → PS Project System → Structures → Standard Structures → Standard Work Breakdown Structure (Standard WBS).

The standard WBS A-20000 for the construction of a power plant has the following structure:



Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Basic data → Templates → Standard WBS → Display</i>
Transaction Code	CJ93

2. Enter the following data:

Field	Data
Standard project definition	A-20000

3. Choose .


Displaying a Standard WBS


4. Choose the *Basic data* tab page.

Here you can see information on the default organizational data and status profiles.

5. Choose the *Control data* tab page.

Here you can see information on the default profiles for the project, accounting and scheduling.

6. Choose .

7. Choose .

The *Hierarchy Graphic* screen appears.

Displaying a Standard Network

Displaying a Standard Network

Use

The standard networks provide you with templates for internal and external activity or services and for operating resources that you require for activities. These networks form the base for planning, control and monitoring of dates, costs and resources in project execution.

You can find further information in the SAP Library under

Logistics → PS Project System → Structures → Standard Structures → Standard Network.

The planned process flow for the construction of a power plant is displayed in 15 standard networks. These networks form the template for the operative networks created with the project.

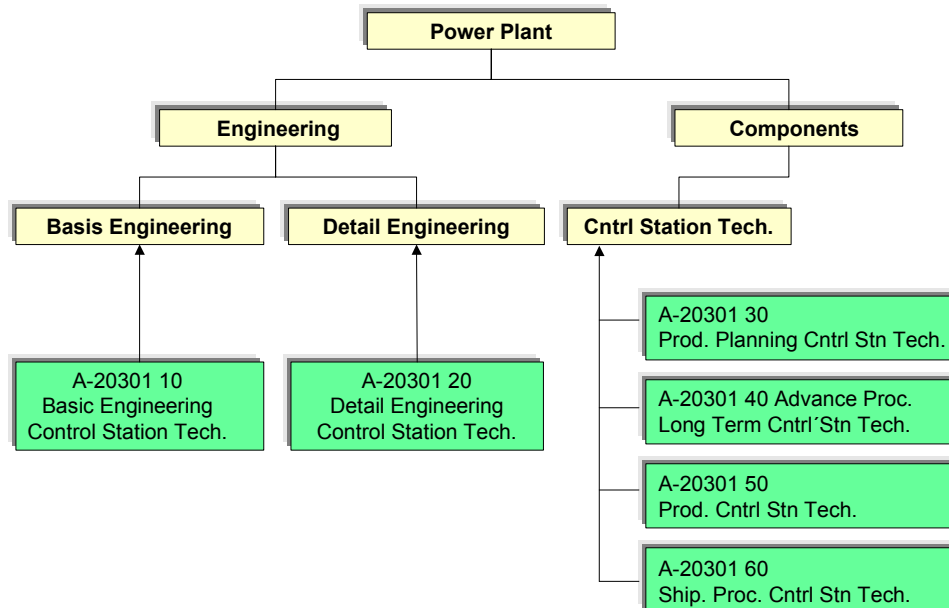
See also:

[Logistics Master Data \[Page 13\]](#)

The activities in the standard networks are linked to the standard WBS elements.

Planning using activities and assignments to WBS elements has important advantages:

For example, the network activities for control station technology are assigned to the following standard WBS elements:



Procedure

1. Call up the transaction as follows:

Menu Path	Choose <i>Standard network → Display</i>
------------------	--

Transaction Code	CN03
-------------------------	------

2. Enter the following data:

Field	Data
Standard Network	A-20301 (internal processing) A-20307 (external processing)

3. Choose  *Activities*.


You see an overview of the activities.


4. Choose the *Total* tab page.

You can see the assignment of activities to standard WBS elements on the *Total* tab page.

5. Select an activity, then choose .

The *Relationship Overview* screen appears.

6. Choose .

7. If you want to display the individual activities and their relationship to one another, choose .

An overview screen displaying the network structure appears.

8. Choose .

9. Select an activity, then choose .

The detail screen for this activity appears.

Displaying a Material

Displaying a Material

Use

Materials are stored in the material master record. These materials can be used in SD documents when a power plant is constructed or in project processing.

- Materials that are relevant to SD in this process are indicated by IECPP-1-####.
- Materials that are used in project processing are indicated by IECPP-2-####.

These two different types of material differ with regard to which data is maintained and the selection of the view. For example, 2 is set for MRP in the material master record whether the material is procured internally or externally.

See also:

[Logistics Master Data \[Page 13\]](#)




Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Materials Management → Material Master → Material → Display → Display Current</i>
Transaction Code	MM03

2. Enter the following data:

Field	Data
Material	IECPP-1-PP01 (SD material) IECPP-2-VE01 (external procurement) IECPP-2-GE01 (in-house production)

3. Choose .
4. To select all views, in the dialog box, choose .
5. Choose .

Depending on which views have been maintained for the material, further entries are required by the system.

6. Make the following entries, depending on the material:

Field	Data
Plant	4000
Purchasing org.	4000
Sales org.	4000
Distr.Channel	40

7. Choose .

Processing RFQs and Quotations

Processing RFQs and Quotations

Purpose

The customer describes the most important requirements of the power plant in the RFQ. Since the probability of receiving an order is great, you decide to create a quotation.

The quotation contains the technical specifications in accordance with the customer’s wishes and details on prices and dates. For this, you must carry out internal planning for the activities, resources and costs known of at this time.

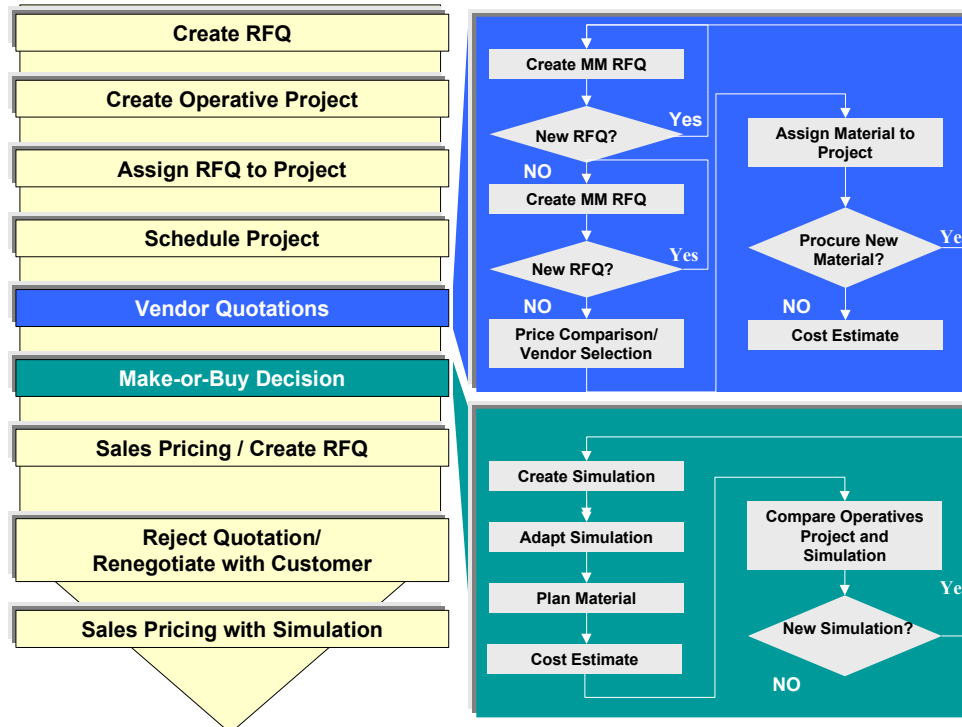
Quotations are collected from vendors for parts that have to be procured externally such as materials, accessories, tools or equipment. Furthermore, project-specific RFQs can be made to subcontractors in order to collect and compare dates and prices for services. This must be done so that the quotation price can be created in detail.

In practice, there are often negotiations with customers and vendors until a satisfactory compromise has been found for all parties.

In the planning phase particularly, knowledge about a specific project changes constantly. Quotation processing represents an iterative process: the individual steps can be carried out several times. However, management of project simulation and several quotations is necessary to keep the process clear and comprehensive and so that different scenarios can be compared to one another.

Process Flow

The following graphic clarifies the process:



1. [Creating an SD Inquiry \[Page 26\]](#)

Processing RFQs and Quotations

The process starts when a customer inquiry is entered. The customer is, for example, the Canadian corporate group North Energy Ltd / Calgary.

2. [Creating an Operational Project \[Page 28\]](#)

You decide to create a project structure for the power plant and assign the RFQ to the project account for the purposes of quotation creation (planning, scheduling and costing).

4. Preliminary Project Planning (Structures, Work, Dates)

In order to be able to make a quotation, preliminary project planning must have taken place. For this reason, project structures (WBS, networks) are adapted to suit the current RFQ. WBS elements are deleted or created. Duration, work, sequence, components etc. are adapted in the networks.

The ideal case that standard structures can implemented unchanged is used in the example process, so the scenario mentioned above cannot be used.

In the next step, you schedule the project for the first time ([Scheduling a Project \[Page 31\]](#)) to determine whether the delivery date can be kept.

5. [Requests for Quotations \[Page 33\]](#)

As well as calculating the cost of in-house services, you also have to collect prices for components to be procured externally in a request for quotation.

Using the *Boiler* component as an example, collect quotations from vendors and adapt your project planning accordingly.

6. [Make or Buy Decision \[Page 42\]](#)

You have to make a make or buy decision for the generator, for example, because it can either be manufactured in-house or procured externally. To do this, create a simulation (in-house production) that will then be compared to the operational project.

Due to cost issues, you decide to procure the generator externally.

7. [Create Sales Price Calculation / SD Quotation \[Page 51\]](#)

You use sales pricing to create a resource-related quotation on the basis of detailed project planning. The quotation contains the technical specifications in accordance with the customer's wishes and details on prices and dates.

8. [Rejecting a Quotation / Renegotiating \[Page 54\]](#)

The customer has special requests and requirements so the generator is manufactured in-house after all.

9. [Sales Pricing Using Simulation/Creating a Quotation \[Page 55\]](#)

Using sales pricing, you create a new quotation based on the results of negotiations.

Result

Quotation processing ends when the customer places an order (letter of indent).

Creating an SD Inquiry

Creating an SD Inquiry

Prerequisites

The following settings have been made in Customizing for *Sales and Distribution*:

- Sales document type ZEC1 (IECPP inquiry)
- Item category ZEC1


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Sales → Inquiry → Create</i>
Transaction Code	VA11


2. Enter the following data:

Field	Data
Inquiry type	ZEC1 (IECPP inquiry)
Sales organization	4000
Distribution channel	40
Division	00


3. Choose .

4. Enter the following data:

Field	Data
Sold-to party	4000
Purch. order no.	A-20### (# stands for any number)
PO date	Today's date
Valid from	Today's date
Valid to	Today's date +6 months
Req. deliv.date	Today's date +4 years
Material	IECPP-1-PP01
Order quantity	1

5. Choose .

6. In the dialog box, choose .

7. To confirm possible warning messages, choose .

8. Make a note of the inquiry number.

Creating an Operational Project

Creating an Operational Project

Use

You create a project structure for the power plant for planning and costing a quotation.

Since your company usually manages the construction of power plants by using projects, a standard project structure already exists in the system. All you have to do is to adapt this standard structure to suit the specific requirements of your current project. To do this, copy the standard project into an operational project.

Use the *Project Builder* to create the project. You can find further information in the SAP Library under *Logistics → Project System → Structures → Project Builder*.

Prerequisites

Standard project A-20000 is available.




The following settings have been made in Customizing for *Project System*:

- Project profile ZECPP01
- Network profile ZECPP01



Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Project Builder</i>
Transaction Code	CJ20N

2. Click on  *Templates* in the lower part of the screen containing the worklist and the templates.
3. Expand the  *Standard templates* node.
4. Call up the *Include in Templates* dialog box by double-clicking on  *Standard project definitions*.
5. Enter the following data:

Field	Data
Standard project definition	A-20000

6. Choose .
7. In the *Templates* area of the screen, select the standard project definition  *Power Plant A-20000* and drag it into the structure tree part (upper part) of the screen by keeping the left-hand mouse button pressed.

The *Create Project* dialog box appears.

8. Enter the following data:

Field	Data
Project def.	A-20###

Description	Power Plant A-20###
Finish date	Today's date + 4 yaers
Project profile	Empty



The finish date corresponds to the desired delivery date from the inquiry/RFQ.

9. Choose .

The first release milestone is triggered when you create the project.

10. Choose .

You can now see various objects in the structure display that have been copied from the standard project.

- Project definition
- WBS elements
- Activities
- Milestones

11. Choose .

Result

When a project is created, the release milestone *Release activities* (in activity *Plant engineering* of WBS element *Basic Engineering*) releases all activities up to the next release milestone *Down payment* (in activity *Acceptance* of WBS element *Basic Engineering*).

Assigning a Project Inquiry to an Account

Assigning a Project Inquiry to an Account

Use

After you have created your project, assign your project inquiry to an account. Since you want to create a quotation for your inquiry on the basis of the project data, check whether the settings in the quotation are correct.

Prerequisites

You must have entered a customer inquiry in the system and you must have created a project.

Procedure


1. Call up the transaction as follows:

Menu Path	From the <i>Inquiry</i> node, choose <i>Change</i>
Transaction Code	VA12

2. Enter the following data:

Field	Data
Inquiry	Your noted inquiry number

You can search for the document number of your inquiry using the purchase order number A-20###.

3. Choose .
4. Call the item data by double-clicking on the item with material IECPP-1-PP01.
5. Choose the *Account assignment* tab page.
6. Enter the following data:

Field	Data
WBS element	A-20###

7. Choose the *Sales B* tab page.

DIP (dynamic item processor) profile ZECPP01 has been maintained for creating offers.

8. Choose .

Scheduling the Project

Use

You schedule the project for the first time to determine whether the delivery date can be kept.

The project planning board enables you to plan using the work breakdown structure and the network. Basic dates in the project structure are determined by the dates for each activity and compressed into the structure. Bottom-up planning: networks are always scheduled forwards and backwards in time. Backward scheduling is determined as the starting direction in which scheduling takes place.

There are several options for defining control parameters for scheduling. In this example, you choose a different setting than that which is set in Customizing for *Project System*. You decide that the work breakdown structure should determine the dates since, at the moment, the required delivery date is the only known date for the definition of the project.




Prerequisites

WBS scheduling profile IECPP1 has been maintained and entered in project profile IECPP01 in Customizing for *Project System*.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Project</i> node, choose <i>Project Builder</i> .
Transaction Code	CJ20N

2. In the *Worklist* screen area, choose *Last projects processed*.
3. Open your project by double-clicking on  *Power Plant A-20####*.
4. To expand the project completely, choose .
5. Choose .





The *Project Planning Board* screen appears.

6. Choose *Settings* → *Options*.

A dialog box appears.

7. On the *Scheduling* tab page, enter the following data:

Field	Data
Schedul. method	WBS determines dates

8. Choose .
9. Choose .
10. Choose .
11. Choose .

Scheduling the Project**Result**

You can see red horizontal bars in the overview for the project planning board. These indicate critical paths. In other words, you must adhere to the times planned (no buffer). If you do not, you will cause delays.

The required delivery date can be kept since the start of the project is in the future.

Requests for Quotation

Purpose

To be able to calculate a quotation price, you require, amongst other things, the price of the components that have to be procured externally.

The request for quotation can be illustrated by using a boiler as an example. You collect quotations and choose a vendor.

Process Flow

1. [Determining a Delivery Date \[Page 34\]](#)

You have to make a note in the project of the requirement date calculated by scheduling.

2. [Create MM Request for Quotation \[Page 35\]](#)

Create a request for quotation (RFQ) in purchasing. Assign a collective number to the request for quotation. The collective number helps you when you want to assign requests for quotations to bid invitations. You enter the collective number once and the system then copies it for every request for quotation that you create for a bid invitation.

2. [Create MM Quotation \[Page 37\]](#)

After you have collected the quotations from the different vendors, enter them in the system using the collective number.

3. [Comparing Prices \[Page 38\]](#)

Then you compare the prices and decide on one of the vendors. To do this, you use the price comparison list to compare the prices of all the quotations in your collective request for quotations. The quotations are listed in this price comparison list as items in ascending/descending order.

4. [Assigning Materials in a Project \[Page 39\]](#)

So that complete data is available for costing purposes, the materials for the boiler have to be assigned to the appropriate activity and be assigned the price demanded by your chosen vendor.

5. [Costing \[Page 41\]](#)

You can cost your project using the data that is updated in the project.

Determining a Delivery Date

Determining a Delivery Date







Use

You have to make a note in the project of the requirement date calculated by scheduling.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Project</i> node, choose <i>Project Builder</i> .
Transaction Code	CJ20N

2. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.
3. Expand the following nodes in the project:
 -  Power plant
 -  Components
 -  Vessel
 -  Vessel
4. Select the  *Transportation vessel* activity.
5. Choose the *Dates* tab page.
6. Make a note of the earliest start date.

This date is the desired delivery date.

Creating an MM Request for Quotation

Use

You create a request for quotation with collective number, material and requirement date. In practice, the specifications and plans, for example, would also be sent in addition to the request for quotation.

Prerequisites

The vendor master record has been maintained.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Materials Management → Purchasing → RFQ/Quotation → Request for Quotation → Create</i>
Transaction Code	ME41

2. Enter the following data:

Field	Data
RQF type	AN
Quotation deadline	Today + 2 months
Purch. organization	4000
Purchasing group	010

3. Choose .

4. Enter the following data:

Field	Data
Coll.no	IECPP

5. Choose .

An overview screen displaying the items appears.

6. Enter the following data:

Item	Material	RFQ quantity	Delivery date
010	IECPP-2-VE01	1	Earliest start date from network vessel, activity <i>Transportation Vessel</i>
020	IECPP-2-VE02	10	Earliest start date


7. Choose  to go to the screen displaying a selection of vendors.

8. To confirm possible warning messages, choose .


9. Enter the following data:


Creating an MM Request for Quotation


Field	Data
Number of vendor	4000

10. Choose .

The system copies the address data from the vendor master record.

11. If necessary, in the dialog box, select language EN for the vendor and choose .

12. To confirm possible warning messages, choose .

13. Choose .

14. Make a note of the inquiry number.

The *Create RFQ: Vendor Address* screen appears.

15. Create a request for quotation for the following vendors:

Field name	Value
Number of vendor	4010
Number of vendor	4020

16. Make a note of each RFQ number.

17. Choose .

Result

You have assigned the vendor RFQs using the collective number of a collective request for quotation.

Creating an MM Quotation

Use

After a while, the quotations arrive from the vendors. You enter the quotations in the system and use the collective number to help you do this.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>RFQ/Quotation</i> node, choose <i>Quotation</i> → <i>Maintain</i>
Transaction Code	ME47

2. Enter the number of the request for quotation for vendor 4000.

You can use the collective number IECPP to help you search. Choose the possible entries button and then the *Requests for Quotation per Collective Number* tab page.

3. Choose .

4. Enter the following data:


Material	Field	Data
IECPP-2-VE01	Net price	10,000,000
IECPP-2-VE02	Net price	700,000

5. Choose .

The quotation for the RFQ for vendor 4000 has been maintained.

6. Repeat this procedure for the remaining RFQs and enter the following data:

Vendor	Material	Net price
4010	IECPP-2-VE01	11,000,000
	IECPP-2-VE02	650,000
4020	IECPP-2-VE01	11,500,000
	IECPP-2-VE02	630,000

7. Choose  until the overview tree appears.

Comparing Prices

Comparing Prices

Use

After the quotations have arrived from the vendors and been entered in the system, you can run a price comparison in order to determine which is the cheapest quotation.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Quotation</i> node, choose <i>Price Comparison</i> .
Transaction Code	ME49

2. Enter the following data:

Field	Data
Purchasing organization	4000
Collective request for quotations	IECPP

By entering the collective number IECPP, you can select all the quotations in the current collective request for quotations.

3. Choose .

Result

The system compares the prices. The following data is displayed:

- the variance of each quotation in the comparison, expressed as a percentage
- the price and value per item
- the total value

Vendor 4000 offered the cheapest quotation.

Assigning Materials in a Project

Use

You assign the boiler materials to the appropriate activity and assign the cheapest quotation price from the request for quotations from the vendors to them.





Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Project Builder</i>
Transaction Code	CJ20N

2. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.

3. Expand the following nodes in the project:

-  Power plant
 -  Components
 -  Vessel
 -  Vessel

4. Select the  *Transportation vessel* activity.

The detail screen for the activity appears in the area of the screen containing the worklist.

5. In the *Identification and View Selection* area of the screen, choose .


The component overview appears in the worklist.

6. Enter the following data:

Field	Data
Material	IECPP-2-VE01
Rqmts qty	1
Item category (I)	L
Material (item 020)	IECPP-2-VE02
Rqmts qty	10
Item category (I)	L

7. Choose .




The *Reservation* dialog box appears twice.

8. Select *Purchase requisition + Res. WBS element* and choose .



Assigning Materials in a Project

By making this choice, you activate the material to be accounted for in project stock and determine that a purchase requisition is generated directly (without an MRP run). The purchase requisition is created when the activity is released.


The system includes the components  *Boiler (IECPP-2-VE01)* and  *Boiler pipe (IECPP-2- VE02)* in the structure overview underneath the activity  *Transportation vessel*.

9. Select the  *Boiler* component in the structure overview.

The detail screen for the component appears in the area of the screen containing the worklist.


10. On the *Purchasing data* tab page, change the price as follows:

Field name	Value
Price/currency	10,000,000

11. Select the  *Boiler pipe* material in the structure overview.

12. On the *Purchasing data* tab page, change the price as follows:

Field name	Value
Price/currency	700,000

13. Choose .

14. Do not exit the *Project Builder*.

Costing

Use

You have scheduled internal and external services for the activities in the network.

Taking the dates into account, the system calculates the planned costs using the valuation records or the prices for internal and external services and the required operating resources.

The time-based distribution of the planned costs is the result of the time-based distribution of the planned services and the operating resources for the individual activities.

The costs of the activities are assigned to the WBS elements by assigning the activities.







You can find further information in the SAP Library under *Logistics* → *Project System* → *Structures* → *Project Planning Board and Logistics* → *Project System* → *Costs*.

Prerequisites

The controlling area must have been set to 2000. In a North American corporate group, cost accounting that takes place across different company codes is performed using the currency USD (U.S. dollars).

You are still in the Project Builder.

Procedure

1. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.
2. If the project is not completely expanded, choose .
3. Choose .
The *Project Planning Board* screen appears.
4. Choose .
5. Choose .
6. Draw the dividing line between the hierarchy display and the graphical display further to the right until the *Project Costs* column appears.
7. Choose .

Result

The system has determined the planned project costs.

Make or Buy Decision

Make or Buy Decision

Purpose

The standard structure presumes that you want to procure your generator externally since a standard version of this component is being dealt with here.

IDES Canada also produces generators in-house. If you want to be able to compare both these options, create a simulation for this alternative.

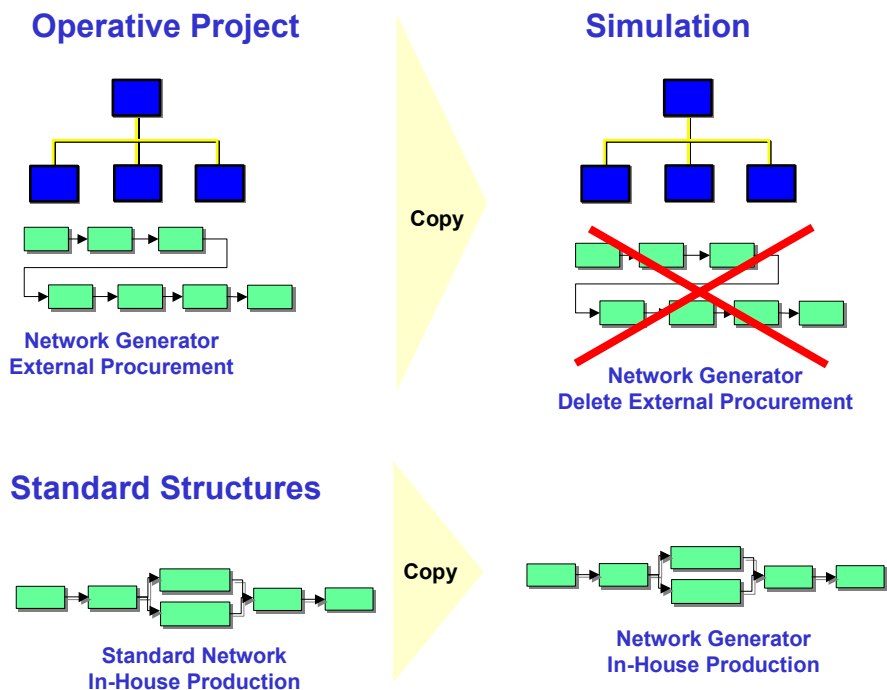
Process Flow

1. [Creating the Simulation \[Page 44\]](#)

Check whether in-house production of the generator is cheaper than external procurement. Create a simulation to do this.

2. [Changing the Network Generator \[Page 45\]](#)

The simulation is a copy of the operative project. The network for the generator has to be changed so that activities for in-house production have to be planned instead of activities for external procurement.



3. [Planning Material Costs \[Page 48\]](#)

You have to plan costs for in-house production of the generator.

4. [Comparing the Operative Project With the Simulation \[Page 50\]](#)

You compare the costs of your operative project with those of the simulation to decide which project you want to use as a base for the creation of a quotation.

Result

On the grounds of the cost situation, you choose the operative project – and therefore also external procurement of the generator.

Creating a Simulation


Creating a Simulation

1. Call up the transaction as follows:

Menu Path	From the <i>Project</i> node, choose <i>Simulation</i> → <i>Transfer Project</i>
Transaction Code	CJV4

2. Enter the following data:

Field	Data
Project definition	A-20###
Operative data -> Version	Select
Target version	SIM20###

3. Choose .

A dialog box appears.

4. To create the simulation, choose Yes.

5. Choose .

Result

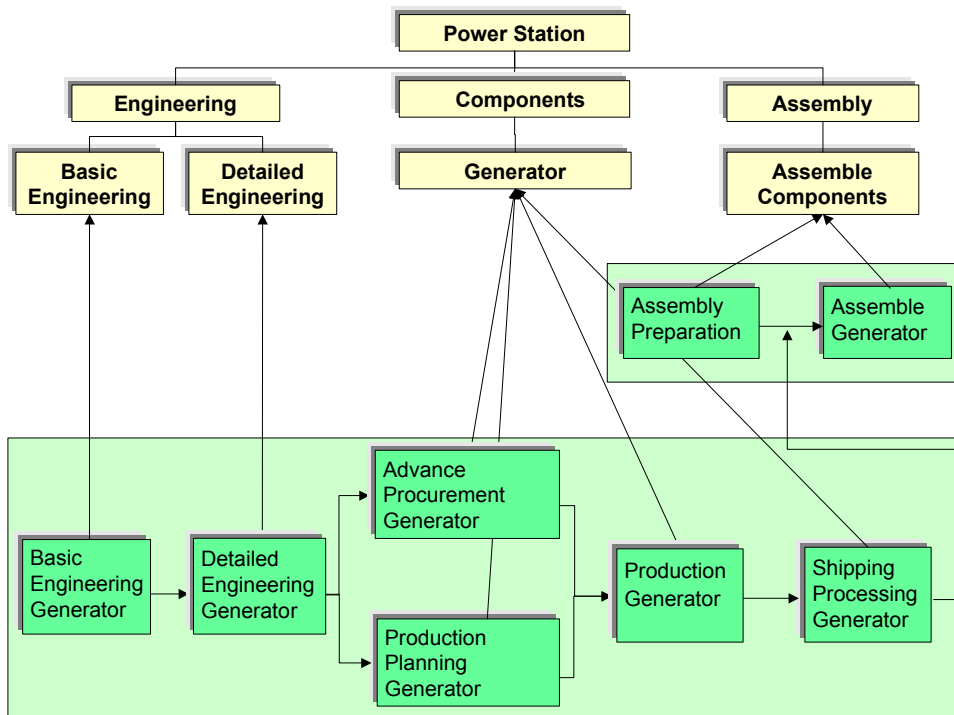
The system has created a copy of your project as a simulation version. You receive a log.

Changing the Network for the Generator

Use

The network for the generator has to be changed so that activities for in-house production have to be planned instead of activities for external procurement.

First of all, delete all the activities that belong to the *Generator* network. You can find these under the WBS elements *Basic Engineering*, *Detail Engineering* and *Generator*. Then you can copy a standard network for in-house production and assign the *Basic Engineering*, *Generator* and *Detail Engineering* *Generator* activities to the appropriate WBS elements. Furthermore, change the relationship of the *Sales Processing Generator* activity. Assembly is to become part of this activity. Therefore, a successive, or follow-up relationship ensues for the *Assembly Generator* activity (please see graphic below).



Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Simulation</i> node, choose <i>Change</i> .
Transaction Code	CJV2

2. Enter the following data:

Field	Data
Vers. key	SIM20###
Project def.	A-20###

Changing the Network for the Generator

3. Choose  *Open project*.

Deleting an Activity

1. Select the following activities:

Activity	Assigned to WBS element
Basic Engineering Generator	Basic Engineering
Detail Engineering Generator	Detail Engineering
Activity 030 RFQ/Inquiry Generator to 070 Shipping Processing Generator	Generator (below WBS element component)




You can select more than one activity by keeping the Cntrl key pressed.

2. Choose *Edit* → *Delete* → *Deletion flag*.
3. In the dialog box, choose *Yes*.

The systems flags the activities for deletion.


Creating a New Activity

1. Select WBS element *Generator*.
2. Choose .

A structure overview with templates appears on the left-hand side of the screen.

3. Call the dialog box for copying to templates by double-clicking on *Standard networks*.
4. Enter the following data:


Field	Data
Standard network	A-20301

5. Choose .


The network is copied to the structure overview as a template.

6. Copy the activities and relationships to the simulation below the WBS element *Generator* by double-clicking on the standard network A-20301.

Processing an Activity

1. Select all the activities that have just been added.
2. Choose .


The detail screen for the first activity appears.

3. For each activity, replace the short text *Control station technology* with *Generator*.
4. To scroll back to the activity *Basic Engineering Generator*, choose .
5. On the *Assignments* tab page, change the WBS element that has been assigned for the *Basic Engineering Generator* and *Detail Engineering Generator* as follows:

Activity	WBS element
----------	-------------

Changing the Network for the Generator

Basic Engineering Generator	A-20###-02-01
Detail Engineering Generator	A-20###-02-02


6. Choose .

Changing the Relationship

1. Select the activity *Transportation generator*.



By copying the relationships from the control station technology standard network, this activity follows up activity 20 for the assembly of the control station in the network *Assembly Components*.


2. Choose .

3. To change the relationships, choose the *Successors* tab page.

4. Enter the following data in the upper area of the table:

Field	Data
Activity	80

You have set this activity in a follow-up relationship to the activity for the assembly of the generator.

5. Choose .

6. Choose .

Planning Material Costs

Planning Material Costs

Use

If you copy the *Control station technology* standard network, the *Control station technology* component that has been assigned to it is also copied. The components are not assigned to the activities until later for the generator. For this reason, you plan the costs using material planning and delete the component *Control station technology*.

This planning is important for the quotation costing which has to be created at this point in time using the project.



The planned values are reduced when components are assigned later on. This avoids planning material costs twice.

Prerequisites

If you want to be able to use material planning, you must have entered a material cost element in Customizing for *Project System* on the tab page *Activities*.



Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Simulation</i> node, choose <i>Change</i> .
Transaction Code	CJV2

2. Enter the following data:

Field	Data
Vers. key	SIM20###
Project def.	A-20###

3. Choose  *Open project*.
4. Select the operation for the production of the generator within the WBS element for the generator.
5. Choose .

The detail screen for the activity appears.

6. Choose the *Assignments* tab page.
7. Enter the following data:

Field	Data
Material planning	8.000.000

8. Choose .




Deleting Assigned Components

1. Choose *Goto* → *Component overview*.

The system opens the component overview in the lower part of the screen.

2. Select the component IECPP-2-PC01 (Power control center).
3. If you want to delete the component, click the right-hand mouse button and choose *Delete*.
4. In the dialog box, choose *Yes*.
5. If you want to close the component overview, choose icon X.



Rescheduling and Recosting a Project

1. Choose .
2. To reschedule the dates, choose .
3. To calculate the costs for the simulation, choose .

The system calculates the costs.

It's not allowed to calculate costs of activities flagged for deletion.

An identical warning message appears.

4. To confirm the warning message, choose .
5. Choose .

Comparing the Operative Project With the Simulation

Comparing the Operative Project With the Simulation

Prerequisites

The PS information profile ZECPP0000001 and the status selection profile ZECPP01 (IECPP without deletion flag) have been defined in Customizing for *Project System*.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Structures → Structure Overview</i>
Transaction Code	CN41


2. In the dialog box, enter the following data:

Field	Data
PS Info Profile	ZECPP0000001 (IECPP: dates and costs/versions)

3. Choose .

4. Enter the following data on the initial screen:

Field	Data
WBS element	A-20###-03-07
Additional selection criteria	Delete
Current data	Select
Version data	Select
Structure-related	Select
Project version	SIM20###

5. Choose .

Result

You can see the comparison of costs for project A-20### and simulation SIM20###.

On the grounds of the cost situation, you choose the operative project – and therefore also external procurement of the generator.

Sales Pricing / Creating an SD Quotation

Use

As a rule, you usually perform a one-off, customer-specific service in a customer project. Due to the uniqueness of the project, you can rarely use standard prices to determine the sales price. You can determine a sales price on the basis of the planning data in the project and SD pricing.

The system compresses the planned costs in the sales price calculation to dynamic items according to cost types and uses material determination for the dynamic item processor profile to change these in key form to SD items.

This view of the sales price basis uses the dynamic item processor to display compressed planned costs from the billing structure, the so-called sales price basis items. You can process the sales price basis items (dynamic items) in this view and accept the sales price determination completely, partly or not at all.

SD pricing is used to calculate the sales price. You can use SD conditions to help you process the individual or header items in the sales price calculation. You enter a risk and gain surcharge to determine the sales price.

You can find further information in the SAP Library under *Logistics* → *Project System* → *Revenues and Earnings* → *Sales Pricing and Quotation Creation* → *Sales Pricing in the Project System*.

Prerequisites

The sales document type ZEC2 (IECPP: quotation) must have been maintained in Customizing for *Sales and Distribution*.

A dynamic item processor profile (DIP profile) must have been maintained in the customer inquiry. Dynamic item processor profile (DIP profile) ZECPP01 (IECPP: quotation for power plant) has been entered for this purpose in Customizing for *Project System*.

For the purpose of controlling quotation creation, this DIP profile must have been entered on the *Sales B* tab page of the item detail view in the SD order.

The following settings have been made in Customizing for *Sales and Distribution*:

- Pricing procedure ZECPP2 (IECPP: quotation)
- Condition type ZEC3 (risk)
- Condition type ZEC4 (profit/gain)

The following materials have been entered in the material master record:

- IECPP-1-EN01 (engineering)
- IECPP-1-PR01 (procurement)
- IECPP-1-IN01 (assembly)
- IECPP-1-CP01 (components)

A customer inquiry with at least one item that has been maintained and assigned to a billing element must exist. The system determines the SD data for sales pricing from this inquiry item.

Cost element group EC_SALARY must have been maintained in Customizing for *Project System*.

Sales Pricing / Creating an SD Quotation

You have planned costs (in concordance with cost elements) for your project.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Project System</i> node, choose <i>Financials</i> → <i>Planning</i> → <i>Sales Pricing</i>
Transaction Code	DP81


2. Enter the following data:

Field	Data
Project definition	A-20###
Additional selection criteria	Delete
Version	Delete entry SIM20###

3. Choose  *Sales pricing*.

4. Choose .

The cost structure for the project is displayed in the upper part of the sales pricing screen. Settings to determine how the cost structure is displayed (3 levels in the project structure with cost element groups below) are made in the DIP profile.


5. To copy the object descriptions to the item overview, choose *Extras* → *Settings*.
6. Choose the *Description* tab page and then the *Object* tab page, select the option *Description* and choose .
7. Double-click on the object description *Power plant*.

The planned costs are distributed to the sales materials in the lower part of the screen.

Processing the Sales Price View

1. Choose  *Sales price*.

The sales price basis is converted to the order items. This takes place in accordance with the settings in the DIP profile.


2. To display the order items, choose .
3. If you double-click on *PS: Quotation*, the pricing procedure that you can process appears in the lower part of the screen.
4. Enter the following data for the risk and profit surcharge:

CnTy	Rate
ZEC3 (IECPP: risk)	5
ZEC4 (IECPP: profit)	3


5. Choose .

Creating a Quotation

1. Choose  *Quotation*.

2. Choose  Yes in the *Create Quotation* dialog box.
3. Enter the following data:


Field	Data
SPc short text	Quotation IECPP

4. Choose .

The *Change Quotation: Overview* screen appears.

5. Enter the following data for the quotation deadline:

Field	Data
Valid to	Today's date +6 months
Purch. order no.	A-20###

6. Choose .
7. Note the number of the quotation.

Result

You have created a quotation based on the planning data in the project. You can send this quotation to your customer.

Rejecting a Quotation / Renegotiating

Rejecting a Quotation / Renegotiating

Use

In the course of contractual negotiations, agreements are reached that require a new quotation to be made. The old quotation is cancelled.

Prerequisites

The reason for rejection ZEC (negotiations, new quotation) must have been maintained in Customizing for *Sales and Distribution*.

Procedure


1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Sales → Quotation → Change</i>
Transaction Code	VA22


2. Enter the following data:

Field	Data
Quotation	Document number already noted

You can search for the document number of your inquiry using the purchase order number A-20###.

3. Choose .
4. Choose the *Reason for rejection* tab page.
5. Enter the following data for each item:

Field	Data
Reason for rejection	Subsequent negotiation, new quotation (ZEC)

6. Choose .

Creating a New Quotation on the Basis of the Simulation Version

Use

In this example, the customer decides that the technical statistics and performance of the generator should be changed. Efficiency and performance are to be increased and it therefore becomes necessary to manufacture this generator in-house.

A similar scenario has already been costed in simulation SIM20###, so it only remains to recalculate a new sales price. This time, however, on the basis of the simulation.

Prerequisites

See also:

[Sales Pricing / Creating a Sales Quotation \[Page 51\]](#)

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Financials → Planning → Sales Pricing</i>
Transaction Code	DP81

2. Enter the following data:

Field	Data
Project definition	A-20###
Pricing date	Today's date
Version	SIM20###

3. Choose  *Sales price*.


The sales price basis is converted to the order items. This takes place in accordance with the settings in the DIP profile.

4. If you double-click on *IECPP: Quotation*, a pricing procedure that you can process appears in the lower part of the screen.

5. Enter the following data for the risk and profit surcharge:

CnTy	Rate
ZEC3 (IECPP: risk)	5
ZEC4 (IECPP: profit)	3

6. To create a quotation, choose  *Quotation*.


7. Choose  Yes in the dialog box.

8. Enter the following data:

Field	Data
-------	------

Creating a New Quotation on the Basis of the Simulation Version


VPK short text	Quotation 20### simulation
----------------	----------------------------


9. Choose .

The *Change Quotation: Overview* screen appears.

10. Enter the following data for the submission deadline for the quotation on the *Item overview* tab page:

Field	Data
Valid to	Today's date + 6 months
Purch. order no.	A-20###

11. Choose .

12. To confirm possible warning messages, choose .

13. Note the number of the quotation.

Result

You have created a new quotation on the basis of the planning data for the simulation. You can send the new quotation to your customer.

Order Entry Processing

Purpose

Order entry processing begins when the customer makes a binding confirmation (letter of indent).

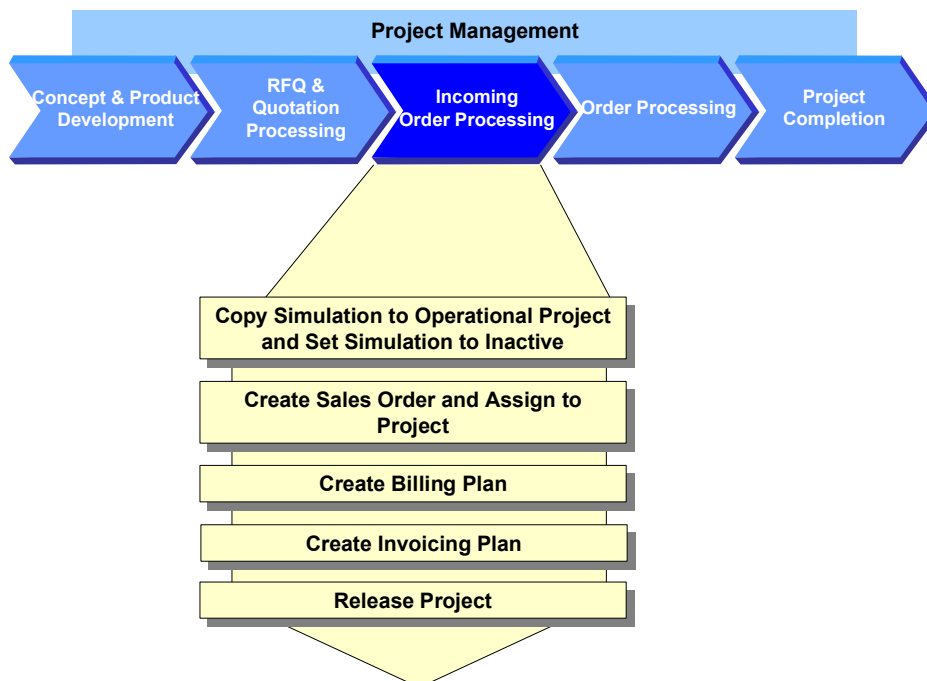
The quotation leads to the generation of an order. The project-specific data determined during the processing of the RFQ and the quotation are checked, edited, and detailed with respect to the incoming order. At the same time, the incoming order triggers a series of activities within the enterprise that differ from the fictitious case of quotation creation with respect to liability.

You create a project-based payment planning. It could be that a considerable cash amount is due when the incoming order arrives.

The incoming order phase ends externally with the confirmation of the order to the customer. Internally, the sales department transfers the operational tasks to the relevant departments.

Process Flow

The following graphic clarifies the process:



1. [Copying the Simulation to an Operational Project \[Page 59\]](#)

As the customer has placed the order for the quotation on the basis of the simulation, you copy the simulation to the operational project.

2. [Setting the Simulation to Inactive \[Page 60\]](#)
3. [Creating a Sales Order and Assigning it to the Project \[Page 61\]](#)

You create the order with reference to the quotation so that you can adopt the already maintained data and depict a complete document flow within the system.

Order Entry Processing

You maintain the order items and assign these to your project.

4. [Creating the Billing Plan \[Page 63\]](#)

During a business inspection, you plan the revenues via the sales order by saving a billing plan. On the basis of the payment milestones that exist in the project, the system lists the dates for which the down payment requests and sales-relevant invoices are to be sent to the customer.

5. [Creating the Invoicing Plan \[Page 68\]](#)

The expenditure side is especially important to the planning of project-based liquidity and financial resources. For expenditure blocks that have not yet been defined in detail, you create invoicing plans to ensure that you have the first rough planned data for the expenditures.

6. [Releasing the Project via the Basic Engineering Confirmation \[Page 70\]](#)

You perform the technical inspection of the set of agreements underlying the sales order in the same way as for the business inspection. The basic engineering phase ends with the confirmation of the basic engineering acceptance. You release the entire project to production and procurement for additional processing. When you confirm this activity, the system automatically triggers the down payment for the customer. For more information, see [PS Cash Management \[Page 105\]](#).

Copying the Simulation to an Operational Project

Use

The customer has accepted a second offer (on the basis of the simulation). You therefore copy the simulation to the operational project.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Simulation → Transfer Project</i>
Transaction Code	CJV4


2. Enter the following data:

Field	Data
Project definition	A-20###
Version -> Operative data in the screen area <i>Transfer from -> to...</i>	Select
Source version	SIM20###

3. Choose .

A dialog box appears.

4. Choose Yes.

5. Choose .

Result

The system copies the simulation to the existing operational project. In the operational project, the system sets the deletion flag for the activities deleted in the simulation.

Setting the Simulation to Inactive



Setting the Simulation to Inactive

1. Call up the transaction as follows:

Menu Path	From the <i>Simulation</i> node, choose <i>Administrative data</i>
Transaction Code	CJV6

2. Enter the following data:

Field	Data
Vers.key	SIM20###
Project definition	A-20###

3. Choose .
4. If necessary, select *Inactive*.
5. Choose .

Creating an Order and Assigning it to the Project

Use

You create the order with reference to the RFQ and assign it to the top element of your work breakdown structure.

Generally, you would enter multiple document items, for example, to correspond with the components of the power plant. In this example, however, you create only two items:

- *Vessel*

The *Vessel* item is created as a component of the power plant that is to be billed separately.

- *Power plant*

The *Power plant* item is created to summarize all of the other items contained in the order. We do this for simplification reasons.

This type of splitting the order into items, the type of billing, the prices, and so on, were agreed with the customer during the contract negotiations on the basis of the quotation.

Prerequisites

In Customizing for *Sales and Distribution* we have maintained the following data:

- Sales document type *ZEC3 (IECPP: Order)*
- Pricing procedure *ZEC3 (IECPP: Order)*

We have stored the following materials in the material master:

- IECPP-1-VE01 (Vessel)
- IECPP-1-PP01 (Power plant)


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Sales → Order → Create</i>
Transaction Code	VA01

2. Enter the following organizational data:

Field	Data
Order Type	<i>ZEC3 (IECPP: Order)</i>

3. Choose  *Create with reference*.
4. Choose the *Quotation* tab page.
5. Enter the following data:

Field	Data
Quotation	The document number of the quotation you noted for the simulation version

Creating an Order and Assigning it to the Project



You can search for the document number of your quotation using WBS element A-20####.

6. Choose *Copy*.
7. Enter the following data:

Field	Data
PO number	A-20####

8. In the *Item Overview* section, enter the following data:

Material	Quantity
IECPP-1-PP01	1
IECPP-1-VE01	1

9. Choose .

Process document items

1. Select both document items, then choose .
2. On the *Account assignment* tab page, enter the following data:

Field	Data
WBS element	A-20####

3. On the *Conditions* tab page, enter the price (condition type PR00).

Field	Data
Rate (Item 10)	300.000.000

4. To display the next item, choose .
5. On the *Account assignment* tab page, enter the following data:

Field	Data
WBS element	A-20####

6. Choose the *Conditions* tab page.
7. Enter the price (condition type PR00).

Field	Data
Rate (Item 20)	30.000.000

8. Choose .
9. Make a note of the number.

Creating the Billing Plan

Use

You create a billing plan on the basis of milestones that have been defined for specific network activities of your project. The system determines the planned dates using the scheduled milestones.

You use a billing plan to plan for each order item:

- The billing to the customer
 - If a milestone has been reached successfully, the customer is billed for a percentage of the total project costs.
 - When you confirm the billing milestone that exists in the project, this triggers a down payment request to the customer. Additional payment milestones generate partial or final payments.
- The expected sales revenues, that is, each time revenue is to be posted in Financial Accounting
 - The planned revenues are derived automatically from the billing plan and updated to the corresponding WBS elements.
- The time of the expected cash receipt ([PS Cash Management \[Page 105\]](#))

Prerequisites

You have created a project with billing milestones and a sales order.

The sales order has been assigned to project.

You have indicated the WBS element on which you wish to plan the revenues as a billing element.

In Customizing of the *Project System*, we have defined that the system updates the billing data from a project-assigned sales order to the assigned WBS element.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Order</i> node, choose <i>Change</i>
Transaction Code	VA02



2. Enter the following data:

Field	Data
Order	Your sales order number


To search for the document number of your order, you can use the PO number A-20###.

3. Choose .

Creating the Billing Plan

4. Select both document items, then choose .
5. Choose the *Billing plan* tab page, then choose  *Create date*.
6. Enter the following data:

Field	Data
WBS element	Select
Field for WBS element	A-20###

7. Choose .


The *Select Milestones* dialog box appears.

8. Select the following milestones:

- Down payment
- Partial invoice for assembly
- Final acceptance

9. Choose *Copy*.

The system adopts the milestone dates as billing dates. The system issues a block to all of the billing dates. These blocks are only removed when you make the final confirmation for the milestone.

10. To display the next item, choose .


11. In the dialog box, choose .

12. Choose the *Billing plan* tab page, then choose  *Create date*.

13. Enter the following data:

Field	Data
WBS element	Select
Field for WBS element	A-20###

14. Choose .

15. To select all of the milestones, choose .

16. Choose *Copy*.

17. Choose .

18. In the dialog box, choose .

19. Choose .

Result

You used billing plans to plan the expected revenues of the document items of your sales order. These refer to the existing billing milestones contained in the project.

Your billing plan for document item IECPP-1-VE01 contains the following dates:

Creating the Billing Plan

- The first date is the down payment date. This billing date triggers a down payment request of 10% to the customer. This date is unlocked when you confirm the activity *Basic Engineering Acceptance*.
- The additional dates are dates for the partial or final invoicing.
When you have confirmed the activity *Follow-Up Assembly* the customer is invoiced for 50% of the net value after confirmation of final acceptance of the remainder.

Your billing plan for document item IECPP-1-PP01 contains the following dates:

- The first date is the down payment date. This billing date triggers a down payment request of 10% to the customer. This date is unlocked when you confirm the activity *Basic Engineering Acceptance*.
- The additional dates are dates for the partial or final invoicing.
When you have confirmed the activity *Foundations* the customer is invoiced for 35% of the document item.
When you have confirmed the activity *Follow-Up Assembly* the customer is invoiced for 50% of the net value after confirmation of final acceptance of the remainder.

Displaying Revenues

Use

The report *Revenues: Planned Contribution Margin* displays the revenues according to the billing plan. The down payment requests do not affect revenues. The first revenues are recorded only when this first partial invoice is made.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Financials → Revenues and Earnings → Hierarchical → Planned Contribution Margin</i>
Transaction Code	S_ALR_87013565

2. In the dialog box, choose ✓.
3. If required, enter controlling area 2000, then choose ✓.
4. If required, enter database profile ZECPP0000001, then choose ✓.
5. Enter the following data:

Field	Data
Project	A-20###
Additional selection criteria	Delete

6. Choose Ⓡ.
7. Double-click project definition *PRJ A-20###*.

You see an overview of the planned values, displayed by individual years.

Creating an Invoicing Plan

Creating an Invoicing Plan

Use

You create an invoicing plan.

In this process, the invoicing plan contains the planned outgoing payments for the externally procured component *Vessel*.

For more information about invoicing plans, see the SAP Library under *Logistics → Project System → Payments*.

Prerequisites

In Customizing of the *Project System*, network profile IECPP01 has been assigned to invoicing plan type 30.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Special Maintenance Functions → Network → Change</i>
Transaction Code	CN22

2. Enter the following data:

Field	Data
Network	Number of the network <i>Vessel</i>

You can search for the number of the network using the F4 input help. Choose the *Networks by Project Definition* tab page, then enter the number of your project definition A-20### and choose .

3. Choose .


You now see the component overview of the network.

4. Select the line for the material IECPP-2-VE01 (boiler), then choose *Details → Component → Invoicing plan*.


The system uses the material value from the purchasing data as the target value for the invoicing plan.


5. Enter the following data:

Field	Date 1	Date 2	Date 4
Invoice date	Current date +1 year	Today's date + 18 months	Today's date +2 years
Date description	Down payment	Engineering/Design	Operational
%	10	50	
CheckRule	4	1	3

6. Choose .

The system determines the invoice values.

7. Choose .

8. Choose .

Releasing a Project Using a Basic Engineering Confirmation

Releasing a Project Using a Basic Engineering Confirmation

Use

All WBS elements, networks and activities as of the release milestone *Down payment* in the activity *Basic Engineering Acceptance* have the system status *Open (EROF)*.

When you confirm the *Basic Engineering Acceptance* activity for the last time, milestone functions are triggered by the assigned milestone.

This leads to:

- the release of all activities in the project
- the partial release of WBS elements
- the creation of a down payment request in accordance with the order in the billing plan for North Energy Ltd / Calgary

To simplify the process, you then release the entire project. After having released the project, you can then start to execute it. You cannot post actual costs and actual revenue to the individual WBS elements and activities until you have released the project.

You can find further information on confirmations in the Project System in the SAP Library under *Logistics → Project System → Confirmation*.








Prerequisites

A milestone has been maintained for the *Basic Engineering* network. This milestone has been assigned to the *Acceptance Basic Engineering* activity.

Procedure

1. Call up the transaction as follows:

Menu Path	Choose from the <i>Project</i> node in the <i>Project Builder</i> .
Transaction Code	CJ20N

2. If required, expand the  *Last projects processed* node in the area of the screen containing the work list.
3. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.
4. Expand the following nodes in the project:
 -  *Power plant*
 -  *Engineering*
 -  *Basic Engineering*
 -  *Basic Engineering*
5. Select the  *Acceptance Basic Engineering* activity.


Releasing a Project Using a Basic Engineering Confirmation

- Choose *Edit* → *Activity* → *Confirm*.


A dialog box for entering confirmations for the network (actual data) appears.

- Enter the following data:


Field	Data
Final confirmation	Select


- Choose .

A message appears informing you that the project will be released by the next release milestone

- Choose .

All the activities in the project receive the released status. The WBS elements receive a status dictating that they have been partially released.


- Choose .

- Open your project by double-clicking on  *Power Plant A-20###*.

- To release the WBS elements, select the  *Power Plant* project definition in the structure overview.

- Choose *Edit* → *Status* → *Release*.

The system status changes from open to released. You have released the project definition and all its subordinate WBS elements.

- Choose .

Order Processing

Order Processing

Purpose

Procurement, production coordination of construction sites, shipping and assembly are carried out so that the power plant is ready for operation as a result.

Engineering and design becomes more detailed during project processing. Changes are to be analyzed with respect to the possible effects on costs, dates and resources and should be documented and agreed on with the sold-to party. Furthermore, BOMs should be adjusted to fit the results in the detail construction and should be checked with regard to the effects on the whole concept. The process described contains, in praxis, repetitions and changes in many different places.

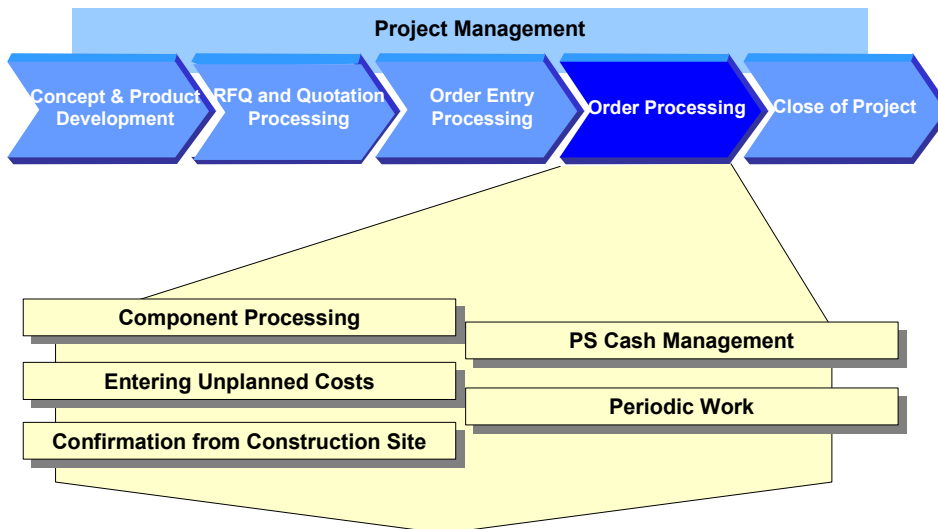
You execute material requirements planning for the project in order to plan procurement measures for the material requirements. Advance procurement and partial deliveries are commonplace since the projects often last a long time.

You can display and value the stock situation at any time using the project-related stock/requirements list. Goods receipt and goods issue can be traced with regard to quantity and value and be accounted to the project appropriately using the valued project stock.

Within the framework of a central planning and control system, confirmations from all areas involved in the project are supported so that there is complete entry of all company-internal and company-external deliveries and services and double entry is avoided.

Process Flow

The following graphic clarifies the process:



1. [Component Processing \[Page 74\]](#)

The engineering/design department has generated a WBS BOM for your power plant project using CAD systems. In order to plan material costs in detail and trigger the procurement of components, you assign individual BOM components to an activity in your project using the BOM/PS interface. Certain equipment, for example two components for the generator, has long procurement times and must be procured in advance.

After detailed planning, you assign the BOM to the project and execute material requirements planning.

2. [Entering Unplanned Costs \[Page 92\]](#)

Unplanned costs arise on the construction site. You post the appropriate invoice.

3. [Confirmation from the Construction Site Using CATS \[Page 94\]](#)

In the power plant project, work done and activities performed on or for the site are confirmed using time sheets and then transferred to the project system. Since an authorization procedure is in force, the confirmation has to be authorized before the transfer.

4. [PS Cash Management \[Page 105\]](#)

From a project point of view, it is important for the project manager to be able to plan and oversee the flow of payments, especially for capital-intensive projects or projects of long duration. The payment flow per activity is then evaluated in reporting.

In praxis, the individual steps are carried out by different employees at different points in time. The individual activities are grouped together in order to clarify the process.

5. [Periodic Work \[Page 118\]](#)

You carry out periodic work regularly during the processing of the project. The following belongs to project controlling:

- Determination of the overhead cost surcharges
- Progress analysis
- Calculation of incoming orders
- Project-related/company-wide result determination

Component Processing

Component Processing

Purpose

The engineering/design department for your power plant project has used CAD systems to create work breakdown structure BOMs and material master records. In order to be able to plan material costs in detail and trigger procurement of the components, you transfer a BOM to one of the activities in your project.



You can either handle materials in the network or you can assign them dynamically using the BOM PS interface. The latter has the advantage that you can process the project and the BOM separately. If, due to order-specific adjustments, for example, the engineering/design department needs to update the BOM, you can copy these changes to your project by using BOM transfer functionality.

You execute material requirements planning if you want to ensure that the materials you require are available.

Prerequisites

A BOM for material IECPP-2-GE01 exists in the system.

Process Flow

1. [Checking a BOM \[Page 76\]](#)

You check the BOM for the generator component for completeness.

2. [Maintaining the Reference Point for the Network Activity \[Page 77\]](#)

You have to maintain the reference point in the network activity in order to create a logical connection between the BOM item and the appropriate network activity (advance procurement for generator).

3. [Checking the Stock/Requirements List \[Page 79\]](#)

The stock/requirements list displays the currently valid requirements and stock situation for a specific material.

You can often make use of this function to check stock when you process components.

4. [Executing a BOM Transfer \[Page 80\]](#)

After a successful design phase, you now want to transfer individual BOM components for the generator to the appropriate network for further processing in order to trigger the procurement process on time.

5. [Executing Material Requirements Planning \[Page 82\]](#)

You execute materials requirements planning for the whole project. The system generates planned orders for materials that are to be produced in-house and purchase requisitions for the purchasing department for components that are to be procured externally. At this moment in time, the materials that first have to be procured are of interest.

6. [Creating a Purchase Order \[Page 84\]](#)

Component Processing

The ordering transaction is triggered for materials that have to be procured externally. You can create purchase orders from the purchase requisitions in the stock/requirements list.

7. [Posting the Goods Receipt for the Purchase Order \[Page 86\]](#)

You enter the goods receipt from external procurement. The vendor has only delivered part of the purchase order. The quantities provided by external procurement are kept in store and managed with inventory management.

8. [Entering an Invoice Receipt \[Page 88\]](#)

The invoice is with respect to the purchase order. Freight costs have been incurred. Moreover, the incoming invoice contains sales/purchase tax. You enter this tax data when you enter the invoice.

The invoice check creates a link between materials management and accounting (financial accounting, asset accounting and cost accounting).

9. [Assigning BOM Material in a Project \[Page 90\]](#)

You assign the BOM (generator) to the activity (production of generator) in your project. Since you have created a new material in the project, calculate your planned costs again.

Checking the BOM

Checking the BOM

Use

You check the BOM for the generator component and the reference point for two components.

Prerequisites

The reference point ZECPP01 (IECPP: advance procurement for power plant) is maintained in Customizing for the Project System.



Procedure

1. Call up the transaction as follows:


Menu Path	<i>Logistics → Central Functions → Engineering → Bill of Material → Bill of Material → Material BOM → Display</i>
Transaction Code	CS03

2. Enter the following data:

Field	Data
Material	IECPP-2-GE01
Plant	4000
BOM Usage	1

3. Choose .
4. Select the materials IECPP-2-GE12 and IECPP-2-GE13.
5. Choose .

The reference point *ZECPP01* has been maintained in the *General data* area on the *Basic data* tab page.

6. To go to the next material, choose .

The reference point *ZECPP01* has been maintained.

Maintaining a Reference Point for the Network Activity

Use

You have to maintain the reference point in the network activity in order to create a logical connection between the BOM item and the appropriate network activity (advance procurement for generator). In contrast to manual assignment of individual components, BOM changes made in the network activity in retrospect can be updated automatically.


Prerequisites

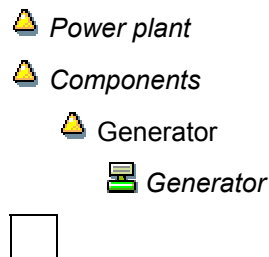
The reference point ZECPP01 (IECPP: advance procurement for power plant) is maintained in Customizing for the Project System.

Procedure


1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Basic Data → Project → Project Builder</i>
Transaction Code	CJ20N

2. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.
3. Expand the following nodes in the project:



The activities flagged for deletion are underlined in blue.

4. Select the  *Prel. procurement generator* activity.
The detail screen for the activity appears in the area of the screen containing the worklist.
5. Choose the *Assignments* tab page.
6. Enter the following data:

Field	Data
Reference point	ZECPP01

7. Choose .

Result

After you have maintained the reference points, you can transfer the BOM. At this point in time, still no requirements for materials IECPP-2-GE12 and IECPP-2-GE13 have been deducted.

Maintaining a Reference Point for the Network Activity

Since you want to check the stock situation every now and then throughout the process, call the stock/requirements list in another session (also referred to as session two in this documentation).

Choose  to do this.


[Checking the Stock/Requirements List \[Page 79\]](#)



Checking the Stock/Requirements List

Use

The stock/requirements list displays the currently valid requirements and stock situation for a specific material. You use this function to check stock at various times during your component processing.

- before and after BOM transfer
- after material requirements planning
- when the purchase order is created
- after goods receipt has been posted

If you have not opened another session, call a second session (also referred to as session two – stock/requirements list) by choosing .

To evaluate the current data, you must update the report after changes have been made to material stock by choosing . If you want to display the stock list for another material, enter the material and then choose .

You can find further information in the SAP Library under *Logistics → PP Production Planning and Control → PP Material Requirements Planning*.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Material → Planning → Stock/Requirements List</i>
Transaction Code	MD04

2. Enter the following data:

Field	Data
Material	IECPP-2-GE12 IECPP-2-GE13 or IECPP-2-GE01
Plant	4000

3. Choose .

Executing a BOM Transfer

Executing a BOM Transfer

Use

Preliminary requirements are created by assigning material components to the advance procurement activity in the generator network during BOM transfer. Preliminary requirements serve as coverage for real requirements that are generated at a later stage. This is useful for material components with a long replenishment lead time.

Planned independent requirements are generated (instead of reservations) for materials that are procured using MRP (item category L).

You can find further information in the SAP library under *Logistics → Project System → Material → Bill of Material Transfer*.

Prerequisites

The following data has been maintained in Customizing for Project System:

- The BOM transfer profile ZEC1 (IECPP: advance procurement power plant)
The preliminary requirements indicator has been set.
- Reference point ZECPP01 (IECPP: advance procurement power plant)

Settings for advance procurement have been made in the material master record.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Material → Planning → Bill of Material Transfer</i>
Transaction Code	CN33


2. Enter the following data:

Field	Data
Project definition	A-20####
Profile	ZEC1 (IECPP: advance procurement power plant)
Material	IECPP-2-GE01
Plant	4000
BOM usage	1
Additional selection criteria	Delete

3. Choose .




In the results overview you can see the components of the multi-level BOM that will be assigned to the appropriate activities of the project due to their common reference points. The components are assigned when you save your data.

4. Choose .

Result

After you have assigned materials IECPP-2-GE12 and IECPP-2-GE13 to the activity and the activity has been released, the system creates planned independent requirements to cover the requirements.

Branch to session two (stock/requirements list), or call up [Stock/Requirements List \[Page 79\]](#) again. Enter the material and choose .

Executing a Material Requirements Planning Run

Executing a Material Requirements Planning Run

Use

You execute material requirements planning (MRP run) for the whole project in order to plan procurement measures for the material requirements. The system generates planned orders for materials that are to be produced in-house and purchase requisitions for the purchasing department for components that are to be procured externally.

You can find further information in the SAP library under *Logistics* → *Project System* → *Material* → *Advance Procurement*.

Execute an MRP run:

- after the [BOM Transfer \[Page 80\]](#)

The BOM for the generator has not been assigned to the project yet and will therefore not be exploded yet. At this moment in time, the materials that first have to be procured are of interest.
- after the [Assignment of the BOM in the Project \[Page 90\]](#)

For materials that are produced in-house, the BOM explosion also determines dependent requirements, in other words the quantity of components that is required to manufacture the finished product or the assembly.

Prerequisites

The appropriate settings have been maintained for the materials in the MRP views 1 to 4 in the material master record.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Material</i> node, choose <i>Planning</i> → <i>MRP Project</i>
Transaction Code	MD51


2. Enter the following data:

Field	Data
Project def.	A-20###
Create purch. req.	1 (basically purchase requisitions)
Planning mode	1
Schedule lines	3
Scheduling	1
Display material list	Select

3. Choose .

The system asks you to check the entry parameters.

Executing a Material Requirements Planning Run

4. Choose .

The system executes materials requirements planning and displays statistics.

5. Choose  *Materials*.

A screen displaying an overview of the results appears. From here you can branch to the current stock/requirements list for a material, for example.

Creating a Purchase Order

Creating a Purchase Order

Use

The ordering transaction is triggered for materials that have to be procured externally. First of all, you want to order sound protection casing and ten bolts. You create the purchase order from the stock/requirements list.



Prerequisites

You are in session two [Stock/Requirements List \[Page 79\]](#).


Procedure

1. Enter the following data:

Field	Data
Material	IECPP-2-GE12

2. Choose .
3. Choose  to refresh the stock/requirements list after the MRP run.
4. Double-click on the purchase requisition (*PurRqs*) to call a dialog box displaying the details for the MRP element.
5. Make a note of the purchase requisition number.
6. Choose *->Purchase order*.

The *Create purchase order* screen appears. In the middle screen area an explaining documentation appears.

7. To close the documentation, choose .

In the left screen area you see the documentation overview. If it's not displayed, choose *Document overview on*. You can adjust the document overview area to your requirements.

On the right side you see the work area of the activity.

8. Enter the following data:


Field	Data
Vendor	4000

9. To open the item header area, choose  *Header*.

10. In the *Org.data* tab page, enter the following data:

Field	Data
Purchasing org.	4000
Purchasing group	010

11. Choose .

12. In the document overview, select your purchase requisition and choose .

The system copies the item of the purchase requisition in the item overview area.

If the item overview area is closed, choose .

13. In the item overview, enter the following data:

Field	Data
Net price	20,000
Currency	CAD
Storage location	4000

14. In the item area, choose the *Invoice* tab page, then enter the following data:

Field	Data
Tax code	I1


15. Choose .

16. Make a note of the purchase order number.

17. To refresh the stock/requirements list after the MRP run, choose .

From the stock/requirements list you can see that the system has created a purchase order for the purchase requisition for material IECPP-2-GE12.

18. Proceed in the same way for material IECPP-2-GE13 and enter 2 000 000 as net price.

19. Choose .

20. To refresh the stock/requirements list after the MRP run, choose .

From the stock/requirements list you can see that the system has created a purchase order for the purchase requisition for material IECPP-2-GE13.

21. Make a note of the second purchase order number.

22. Switch to the other session.

Posting the Goods Receipt for the Purchase Order

Posting the Goods Receipt for the Purchase Order

Use

The ordered materials have been delivered and you enter a goods receipt for them. The vendor has only delivered part of your order: sound protection casing and 8 bolts.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Materials Management → Purchasing → Purchase Order → Follow-On Functions → Goods Receipt</i>
Transaction Code	MIGO

2. Enter the following data:

Field	Data
Purchase order	First purchase order number (Search the purchase order for the material IECPP-2-GE12 if necessary)
Document date	Today's date
Posting date	Today's date

3. Choose .

The system copies all the purchase order items as they are into the goods receipt document.

4. Choose the *Qty* tab page, then enter the following data:

Field	Data
Qty in unit of entry	8

You overwrite the default value of ten with the actual quantity delivered of eight.

5. Choose .

6. In the *purchase order* field enter the number of the second purchase order you noted.

7. Choose .

8. In the item overview area select the indicator *OK* for both items.

If the *OK* indicator in the item overview area is not active, either close the item detail area or select *Item OK* at the bottom of the detail area.


9. Choose *Post*.

Posting the Goods Receipt for the Purchase Order**Result**

The requirement for material IECPP-2-GE12 has not been completely covered. The result is:

- a project stock (P-BEST) of eight bolts
- a purchase order (B-EIN) with an expected receipt/requirement of two bolts and an available quantity of 10 for the requirement date
- planned independent requirements of ten bolts

The requirements have been fully covered for material IECPP-2-GE13. A goods receipt covering the entire quantity ordered for material IECPP-2-GE13 has lead to the system removing this purchase order (BS-EIN) from the list. The result is a project stock (P-BEST) of one.

Branch to session two (stock/requirements list), or call up the [Stock/Requirements List \[Page 79\]](#) again. Enter the material and choose .

Entering an Invoice Receipt

Entering an Invoice Receipt

Use

You receive an invoice with the following items from your vendor:

Item	Value
Protection against sound	2 000 000
Bolts	160 000
Freight costs	5 000
Tax amount	324 750


Freight costs have been incurred. You enter these costs as unplanned costs.

The invoice includes sales/purchase tax. This is entered as the tax amount. You enter this tax data when you enter the invoice and the system makes the appropriate postings automatically.




Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Materials Management → Logistics Invoice Verification → Document Entry → Enter Invoice</i>
Transaction Code	MIRO

2. If required, enter company code 4000 and choose .
3. On the *Basic data* tab page, enter the following data:

Field	Data
Invoice date	Today's date
Amount	2 489 750
Tax amount	324 750
Tax amount (field on the right)	I1 (A/P 7%GST, 8% PST distributed)

4. Next to the *Purchase order/scheduling agreement* field, choose .
5. In the left area of the dialog box, enter your noted PO numbers and choose  *Adopt*.
6. Choose .

The system copies the items and the net amount from the goods receipt.

7. To enter unplanned freight costs, choose the *Detail* tab page.
8. Enter the following data:

Field	Data
Unpl.del. csts	5000

9. Choose .

Entering an Invoice Receipt



The traffic lights for the balance are green which indicates that no deficits have been incurred.


If there is a value in the balance field, you must correct the entries you have made. The posting can only take place if the balance equals zero.

10. Choose  *Simulate*.



The appropriate posting records are displayed.

At the same time as the invoice is entered, the system finds the accounts that have to be posted to for this invoice. In addition, the system automatically generates postings for sales/purchase tax, discount clearing and price variances.

11. Choose  *Post*.

Assigning BOM Material in a Project

Assigning BOM Material in a Project


Use





During quotation processing you have maintained planning material costs for the generator activity. Since the BOM for the generator material has been completely maintained, assign the material to the activity. The planning value is reduced by the value of the material.

Procedure



1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Project Builder</i>
Transaction Code	CJ20N


2. Open your project by double-clicking on  *Power Plant A-20###* in the area of the screen containing the work list.
3. Expand the following nodes in the tree structure:

-  *Power plant*
 -  *Components*
 -  *Generator*
 -  *Generator*


Checking the Planned Costs

1. Select the activity for the production of the generator .
2. Choose *Edit → Costs → Plan/Actual → Activity/element*.
Material planning costs have been planned for the material.
3. Choose .


Assigning Material Components

1. In the *Identifikation and view selection* area, choose .
- The system displays the component overview in the work area.
2. Enter the following data:

Field	Data
Material number	IECPP-2-GE01
Rqmts qty	1
Item category	L

3. Choose .


Recalculating Costs for the Network

1. In the structure tree, select  *Generator*.

Assigning BOM Material in a Project



2. Choose *Edit* → *Costs* → *Calculate costs*.

Checking Costs in the Cost Element Report

1. Select the  *Production generator* activity.
2. Choose *Edit* → *Costs* → *Plan/Actual* → *Activity/element*.


The values of the cost elements have changed.

The planned costs for material planning have been reduced by the price of the material.
The planned costs for the stock change (production) result from the material price from the material master record.

3. Choose .
4. Choose .

Result

By assigning BOM IECPP-2-GE01 to the project, the BOM has received a pegged requirement in the form of an order reservation (AR-RES).

Branch to session two (stock/requirements list), or call up the [Stock/Requirements List \[Page 79\]](#) again. Enter the material and choose .

Entering Unplanned Costs

Entering Unplanned Costs

Use

Additional materials are required on the construction site. These materials are procured by the site supervisor on the telephone. After a while, you enter the invoice for the appropriate WBS element for carcass work.

Prerequisites



The following data has been maintained in Customizing for Financial Accounting:

- G/L account 476900
- Tax code I1

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Accounting → Financial Accounting → Accounts Payable → Document Entry → Invoice</i>
Transaction Code	FB60

2. If required, enter company code 4000 and choose .
3. If the tree structure is not displayed, choose  *Tree on*.
4. Open the structure in the tree area and choose *Screen variants for items → With project*.
5. On the *Basic data* tab page, enter the following data:

Field	Data
Vendor	4000
Invoice date	Today's date
Amount	10,800
Tax amount (field on the right)	I1
Calculate tax	Select



6. Make the following entries in the table:

Field	Data
G/L account	476900
Amount doc. curr.	10,800
Tax code	I1
WBS element	A-20###-04-03 (carcass work)

7. Choose  *Simulate*.



The appropriate posting records are displayed. At the same time as the invoice is entered, the system finds the accounts that have to be posted to for this invoice. In addition, the system automatically generates a posting for the sales/purchase tax (account 175000).

8. Choose .
9. Choose .
10. In the dialog box, choose Yes.

Confirmation from the Construction Site Using CATS

Confirmation from the Construction Site Using CATS

Purpose

Determining how many work hours are required and from which cost center is a task for the personnel planning department for the construction site. Exact confirmations from the site for the required working time are of great importance if you wish to plan and execute the project realistically. The CATS time sheet (Cross Application Time Sheet) allows you to enter working time and is a self-service application for internal employees and external agencies.

The work done is then transferred to the Project System. Since an authorization procedure is in force, the confirmation has to be authorized before the transfer.

You can find further information in the SAP Library under *Logistics → Project System → Confirmation* and under *Cross-Application Components → CA Time Sheet*.

Process Flow

1. [Creating a Pool of Confirmations \[Page 95\]](#)

Create a pool of confirmations for the WBS element for the site facilities.
2. [Entering a Confirmation Using the Time Sheet \[Page 97\]](#)

Employees record their working hours on the time sheet. Two employees release this data for authorization.
3. [Displaying Confirmed Data \[Page 99\]](#)

After a while, you, as supervisor, require an overview of the status of the work that has already been completed. A traffic light function informs you of the processing status.
4. [Approving and Authorizing Confirmed Data \[Page 100\]](#)

Since an authorization procedure is in force, the confirmation has to be authorized before the transfer. As supervisor, you approve the confirmations made by one of your employees. You do not approve the work done by another employee.
5. [Displaying a Reason for Rejection \[Page 102\]](#)
6. [Transferring Data to the Project System \[Page 104\]](#)

You transfer data that is required in the Project System to the Project System.

Generating Pools of Confirmations

Prerequisites

The PS info profile ZECPP0000001 (IECPP: project objects without components) determines which fields are displayed in the BOM overview, for example, the project object, actual dates, actual costs or work.

You can only confirm activities and activity elements if these activities and elements have been assigned the *Released* status.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Structures → Structure Overview</i>
Transaction Code	CN41

2. If required, enter PS info profile **ZECPP0000001**, then choose .
3. Enter the following data:

Field	Data
WBS element	A-20###-04-01
Additional selection criteria	Delete

4. Choose .



The structure overview appears.

5. Select your project and choose .

Setting up the Application Toolbar

1. To include the function  in the application toolbar, choose  *Choose functions*.

The *Choose functions* dialog box appears.


2. In the window area on the left open the *Verify*  node and draw the  *Create confirmations pool* node into the window area on the right by keeping the left-hand mouse button pressed.
3. Choose  *Copy*.

Generating Pools of Confirmations

1. Select all the activities under network  *Site facilities*.





You can select more than one activity at a time by keeping the *Control* key pressed.

2. Choose  *Verify → Create confirmation pool*.
3. In the dialog box enter the following data:

Generating Pools of Confirmations

Field	Data
Confirmation pool	A-20###-04-01
Description	Site facilities confirmation pool

4. Choose .
5. Make a note of the earliest start date for the activity for setting up the site infrastructure.
6. Choose .

Result

You have created a confirmation pool. You can use this confirmation pool at a later date to display the activities assigned to you automatically.

Entering a Confirmation Using the Time Sheet

Use

Employees confirm the time that they have spent working on the construction of the site and its facilities. These confirmations are made by three of the employees in your company. These employees enter the working times on the time sheet on a daily basis.

After a plausibility control, two employees release their data for approval. Since the third employee still has some questions to be answered, this employee does not release his confirmations yet.

Prerequisites

Employee numbers 1100, 1110 and 1120 have been maintained in the personnel master data.

The CATS profile *IECPP001 (IECPP: confirmation of network (release and check))* has been maintained in Customizing for Cross-Application Components.

You have the authorization for entry profile IECPP001 in order to be able to confirm using the time sheet. This authorization can also be maintained in Customizing for Cross-Application Components.


Procedure

1. Call up the transaction as follows:


Menu Path	<i>Logistics → Project System → Progress → Confirmation → Time Sheet → Time Data → Enter</i>
Transaction Code	CAT2

2. Enter the following data:

Field	Data
Data entry profile	IECPP001 (IECPP: network confirmation (release and check))
Key date	Date of first activity in the pool of confirmations
Personnel number	1100


3. Choose .



You can use the entry profile to determine that processing can take place using the pool of confirmations.

4. Enter **A-20###-04-01** as confirmation pool.
5. Choose  and confirm any information dialog boxes that may appear.


The *Time Sheet: Entry Sheet* screen appears. The system displays the activities for which the employees can make confirmations in the upper part of the screen.

Entering a Confirmation Using the Time Sheet


Settings made in entry profile IECPP001 determine that the system displays the confirmation pool for the next two weeks after the entry date. Choose  to check or change these settings. A dialog box appears for editing the settings appears.

6. Select activity 30 *Create site warehouse*.
7. Choose  to copy the data to the confirmation list.
8. Enter 8 working hours a day for all the days in the first week.
9. Choose  *Release view*.

The *Time Sheet: Release View* screen appears. All the values displayed in blue have not been released yet.

10. Select the activity you want to release and choose .

The system confirms the release in the status bar.

11. Choose .
12. Repeat steps 2 to 10 for the employee with personnel number 1110.
13. Repeat steps 2 to 9 and step 11 for the employee with personnel number 1120.



Do not release the confirmation for this employee.

Displaying Confirmed Data

Use

You want to display the data that has been entered using a time sheet for each person. To display this, you choose the relevant employees from the time sheet data.


Procedure

1. Call up the transaction as follows:


Menu Path	<i>Logistics → Project System → Progress → Confirmation → Time Sheet → Information System Time Sheet Data By Personnel Number</i>
Transaction Code	CADO

2. Enter the following data:



Field	Data
Reporting period:	Select all

3. To choose more than one employee, choose *Multiple selection*  next to the *Personnel no.* field.

The *Multiple Selection for Personnel No.* dialog box appears.

4. Make the following entries on the tab page for single values .

Field	Data
	1100
	1110
	1120

5. Choose .
6. Choose .

A screen displaying the time sheet data appears.

Result

The system displays an overview of the confirmations that have been entered for the appropriate employees. Furthermore, you receive information on the processing status:

- The confirmations for employees 1100 and 1110 have been released for authorization.
- The confirmation for employee 1120 is being processed.

This information is clarified by the use of the traffic light function.

Approving Confirmed Data

Approving Confirmed Data

Use

As supervisor it is your job to check the confirmations made by your employees. You want to authorize the confirmation for the employee with personnel number 1100 and reject the confirmation for employee 1110 on the grounds of incorrect account assignment.

Prerequisites

The reason for rejection IECPP (IECPP: incorrect account assignment) has been maintained in Customizing for the time sheet.


Procedure

1. Call up the transaction as follows:


Menu Path	<i>Logistics → Project System → Progress → Confirmation → Time Sheet → Approval → Selection Using Time Sheet Data</i>
Transaction Code	CAPP

2. Enter the following data:



Field	Data
Reporting period: all	Select

3. To choose more than one employee, choose *Multiple selection*  next to the *Personnel no.* field.

The *Multiple Selection for Personnel No.* dialog box appears.


4. Make the following entries on the tab page for single values .

Field	Data
	1100
	1110
	1120

5. Choose .
6. Choose .
7. Select all the work performed by the employee with personnel number 1100.




You can select more than one entry at a time by keeping the *Control* key pressed.

8. Choose  to approve this work.

The traffic light changes to green.


9. Select all the work performed by the employee with personnel number 1110.

10. Choose  to reject the work you have selected.

A dialog box appears.

11. By double-clicking on the entry IECP, choose the reason for rejection as incorrect account assignment.

The traffic light changes to red.

12. Choose .

Displaying a Reason for Rejection

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Progress → Confirmation → Time Sheet → Time Data Display</i>
Transaction Code	CAT3

2. Enter the following data on the initial screen:


Field	Data
Data entry profile	IECPP001 (IECPP: network confirmation (release and check))
Key date	Date of first activity in the pool of confirmations
Personnel number	1110

3. Choose .

The *Time Sheet: Entry Sheet* screen appears.

4. Call an information dialog box by double-clicking on one of the entered times.

You receive information on the reason for rejection.

5. Choose .

Transferring Data to the Project System

Transferring Data to the Project System

Use

You use program *CATS: Transfer to Project System (RCATSTPS)* to transfer data to the Project System.


Procedure

1. Call up the transaction as follows:



Menu Path	<i>Logistics → Project System → Progress → Confirmation → Time Sheet → Transfer → Project System → Transfer</i>
Transaction Code	CAT5

2. Enter the following data:

Field	Data
Test run	Deselect

3. To choose more than one employee, choose *Multiple selection*  next to the *Personnel no.* field.

The *Multiple Selection for Personnel No.* dialog box appears.

4. Make the following entries on the tab page for single values  .

Field	Data
	1100
	1110
	1120

5. Choose .

6. Choose .

The *Time Sheet: Transfer to Project System* screen appears.

Result

Since only the confirmations for employee 1100 have been authorized, only these will be transferred.

After you have transferred the confirmation, the system performs the following activities:

- posts your confirmation on the posting date entered
- copies actual dates to the network or to the WBS elements
- calculates actual costs on the posting date and updates them for the activity

Cash Management Project

Purpose

When a project is being processed, expenditures and costs that affect revenues are incurred on the project. It is of particular importance for the project manager to plan and monitor the payment flow from a project point of view for long term projects, which require intensive capital. You use Project Cash Management for this project-related view of the payment flow.

For more information, see the SAP Library standard documentation, under *Logistics* → *Project System* → *Payments*.



The individual steps are normally processed by different employees in their current activities. To explain the process, the steps in this example are listed one after another, and then are all evaluated in reporting.

The following particularly concentrates on monitoring customer payments. The payment update on the credit-side is made when you post the corresponding business transactions during order processing.

Prerequisites

You need to activate Project Cash Management for controlling area 4000.

Process Flow

Customer Payments

1. You use the billing plan stored in the sales order to plan customer payments. When you update the values to Project Cash Management, the system automatically takes the payment terms into account. The system uses milestone billing to create the billing dates, which are then invoiced to the project earned value accordingly.

You already created the billing plan during order processing. The system created dates for the sales order using milestone billing:

- Down payment date for 10% of the total amount
- Partial invoice date for 35% and 50% of the total amount
- Final invoice date

See [Creating Billing Plan \[Page 63\]](#)

2. The down payment date is unlocked using the corresponding milestone, and a down payment request.

You confirmed the *Acceptance Basic Engineering* activity during order processing. A billing milestone is assigned to the activity for a down payment. When you make the confirmation, the system automatically unlocks the billing date, so you can [create a down payment request \[Page 107\]](#).

3. You post the down payment after the payment has been received.

[Posting Incoming Down Payments \[Page 111\]](#)

Cash Management Project

4. During order processing, you confirm more activities. When you confirm the *Fundamentals* activity, you automatically unlock the first partial invoice date.

[Confirming an Activity \[Page 113\]](#)

5. You create the billing document, in which the down payment already made is automatically cleared.

[Creating Milestone Billing \[Page 114\]](#)

6. The customer pays the open receivable and you post the incoming payment.

[Posting Incoming Payments \[Page 115\]](#)

7. To ensure that the payments made are also correctly displayed in Project Cash Management, you transfer the payments when you execute your periodic tasks.

[Transferring Payment \[Page 117\]](#)

8. You create the second partial invoice in the same way as the first, and then you create the final invoice when the power plant is accepted.

These steps are not relevant for the example process. You can process it in the same way as the partial invoice. To unlock the billing date for the second partial invoice, confirm the *Follow-up Assembly* activity. To do so for the final invoice, confirm the *Final Acceptance* business transaction.

Creating Down Payment Requests

Creating Down Payment Requests

Use

The down payments are part of the agreement with the customer. You stored a down payment date in the billing plan for the sales order. The down payment amount is 10% of the total value of the item.

The down payment date is linked to a milestone in the project. When you create the billing plan, all the dates are initially locked. When you confirmed the *Basic Engineering Acceptance* activity, the corresponding milestone was triggered, and the down payment date was unlocked. During the billing document run, the system selects this date and creates a down payment request. The system automatically updates the down payment request to FI and on the project.

Prerequisites

The down payment date must be unlocked in the sales order.

The billing element (the WBS element to which the revenues are posted) must be released. Otherwise, the system creates the down payment request without a corresponding accounting document, and does not update the payment data on the project.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Billing → Billing Document → Create</i>
Transaction Code	VF01

2. Enter the following data:

Field	Data
Document	Your sales order number

3. Choose .

The system selects the down payment requests for the *Boiler* and *Power plant* sales order items.

4. Choose .

Result

The down payment requests have been created, and the payment data is updated on the project. To evaluate the data change the session (from now on: Session 2 (*Customer payment report*)) and call up the payment report.


[Calling Up The Customer Payment Report \[Page 109\]](#)

The system displays the down payment request in the *Customer DP Req*s row.

Calling Up The Customer Payment Report

Calling Up The Customer Payment Report





Use

As you regularly monitor the payment data on the project during the process, call up the payment report in another session (from now on: Session 2 *payment report*). Therefore choose . To evaluate the current data, you need to exit the report and run it again.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Financials → Execute Report → Hierarchy Report</i>
Transaction Code	CJE0

2. Enter controlling area *2000*, then choose .
3. In the structure overview, choose *001 Project Report* →  *ZECPP01B IECPP: Cash in (Reference 31 FIMB)*.
4. Choose .
5. If required, enter database profile *ZECPP0000001*, then choose .
6. Enter the following data:

Field	Data
Project	<i>A-20###</i>
Additional selection criteria	Delete
Plan version	0

7. Choose .

The payment data overview for the project appears. In the *Cust. fin. budget* row, the system displays the revenue data from the billing plan for the sales order.

8. To obtain a period-specific display, in the Navigation area on the left side of the screen, double-click on *Period/Year*.
9. To continue processing, change session.

Posting Incoming Down Payments

Use

The customer has paid the down payment request, and you post the incoming payment. You use the down payment request as a reference. The down payment request is cleared.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Accounting → Financial Accounting → Accounts Receivable → Document Entry → Down Payment → Down Payment</i>
Transaction Code	F-29

2. Enter the following data:



Field	Data
Document date	Today's date
Document type	DZ
Company code	4000
Posting date	Today's date
Currency	CAD
Customer Account	4000
Spec. G/L indicator	A
Bank Account	113100
Amount	37,950,000

3. Choose *Requests*.

The system selects the down payment requests for the two sales order items.

4. Select your down payment requests, and choose *Create down payments*.

The document overview appears, displaying the down payment amount and the tax portion.

5. Choose  and if required  should any warning messages appear.

Result

The system updates the payment data from the down payment to FI and Project Cash Management, with reference to the down payment request.

To evaluate the data, change to session 2 (*Customer payment report*) and call up the report again.

Posting Incoming Down Payments

The system displays the down payment in the *Customer down payment* row. The down payment request is reduced to zero with the down payment. The net amounts are displayed on the project.

Confirming an Activity

Use

The *Begin shell* billing milestone is assigned to the *Fundamentals* activity. When you confirm the activity, the billing date in the sales order is automatically unlocked.

Prerequisites

You have already released the activity.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Project → Project Builder</i>
Transaction Code	CJ20N


2. Open your project by double-clicking on the *A-20###* project in the work list.
3. Expand the following nodes in the project:

 *Power plant*


 *Construction Site*

 *Shell*

 *Shell*

4. Select the  *Foundations* activity.
5. Choose *Edit → Activity → Confirm*

The confirmation data for the activity appears. Accept the defaulted plan data for the confirmation.

6. Select *FinalConf*.
7. Choose .

The Project Builder screen appears. The system sets the extra status *RMAN CONF*.

8. Choose  and if required  should any messages appear.

Creating Partial Invoices

Creating Partial Invoices

Use

By confirming the *Fundamentals* activity, you unlock the *Partial invoice* date using milestone billing. During billing, the down payments already made are automatically cleared with the billing document. The customer is billed for 35% of the total value.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics</i> → <i>Sales and Distribution</i> → <i>Billing</i> → <i>Billing Document</i> → <i>Create</i>
Transaction Code	VF01

2. Enter the following data:

Field	Data
Document	Your sales order number

3. Choose .

In the overview for the billing items, the screen title shows that an invoice is being created. The invoice contains two items, one for the partial invoice (item 10), and one for clearing the down payment (item 11). In our process, the down payment is completely cleared with the first partial invoice.



The system does not calculate the amount to be paid. The customer receives only information on the amount, which they can deduct from the payment.

4. Choose .

Result

The system posts the total amount of the billing document in FI as a receivable, and updates it in Project Cash Management. The amount paid is thus cleared out of the billing document with the receivable.

Unlike the down payment, the data from the billing document is updated in the form of actual revenues on the project.

To evaluate the data, switch to session 2 (*Customer payment report*) and call up the [payment report \[Page 109\]](#) again.

Clearing the down payment reduces the down payment amount to zero. As the incoming payment has already been posted for the down payment, the cleared down payment amount is displayed in the *Customer payments* row. The remaining amount from the billing request is displayed in the *Cust. payt obl. Inv.* row.

Posting Incoming Payments

Use

Once the customer has paid the billing document, you post the incoming payment.

Prerequisites

Under *Settings* → *Processing Options*, the *Selected Items Initially Active* indicator on the *Open Items* tab page.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Accounting</i> → <i>Financial Accounting</i> → <i>Accounts Receivable</i> → <i>Document entry</i> → <i>Incoming payment</i>
Transaction Code	F-28

2. Enter the following data:

Field	Data
Document date	Today's date
Company code	4000
Currency / rate	CAD
Bank data: Account	113100
Amount	8625000
Open item selection: Account	4000

3. Choose *Process open items*.

The *Incoming Payments (Fast Entry): Process Open Items* screen appears.

4. Select both items (invoice amount and down payment to be added) and choose  *Items*.

The amount of the activated items is assigned to the paid amount. The entered amount is cleared.

5. Choose .

Result

The open items are cleared by the incoming payment in FI.

In Project Cash Management, the cleared payments are correctly displayed once you have transferred payment.

Displaying the Document Flow for the Sales Order

Displaying the Document Flow for the Sales Order

Use

In the sales order, you can see the document flow and thus keep an overview of the posted documents at all times.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Sales → Order → Display</i>
Transaction Code	VA03

2. Enter the following data:


Field	Data
Order	Sales order number (You can search for the number using WBS element A-20##)

3. Choose .

The system displays the document flow for the sales order.

4. Note down the accounting document for the invoice.

You need the document number for the payment transfer.

5. Select the accounting document for the invoice and choose  *Display document*.
6. Double-click on the first row (account 4000) to call up the financial accounting document.
7. Note down the date in the *Clearing* field.

You need the clearing date for the payment transfer and for the results analysis.

Transferring Payment

Use

You need to transfer payment to enable the cleared invoice to be displayed in Project Cash Management under the payment value type. In practice, you transfer payment as part of your periodic tasks.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Financials → Period-End Closing → Single Functions → Payment Transfer</i>
Transaction Code	CJFN

2. Enter the following data:

Field	Data
Company code	4000
Fiscal year	Fiscal year of the clearing date from the FI document
FI document number (invoice) from - To	Noted accounting document for the invoice
Test run	Deselect

3. Choose .

4. Choose .

Result

The down payment request has been created, and the data is updated on the project. To evaluate the data, switch to session 2 (*Customer payment report*) and call up the [payment report \[Page 109\]](#) again.

The system displays the cleared invoice in the *Payments* row. In the *Cust. payt obl. inv.* row, the amount is reduced accordingly.

Periodic Processing

Periodic Processing

Purpose

During project execution, there are often variances between the project planning data and the actual project development. Unforeseen events can lead to cost variances and date shifts. It is therefore vital that you always have up-to-date information regarding the status of your project and project progress.

Periodic processing, such as overhead application, interest calculation, results analysis, incoming orders, and settlement are executed on the basis of fiscal year periods. This is generally at the start of a given period for the preceding period.

Process Flow

You will carry out the following activities several times during the lifetime of a project.

Periodic Allocations During the Planning Phase

1. Generating the Settlement Rule

A prerequisite for results analysis is the correct maintenance of the PA transfer structure for the project. The system uses the automatic generation of the [Settlement Rule for WBS Elements \[Page 120\]](#) in accordance with the strategy to assign the settlement rule and PA transfer structure to the WBS elements.

2. Planned results analysis

You can then determine the project-specific results ([Executing Results Analysis in the Plan Version \[Page 122\]](#)). You use results analysis to determine, for example, the work in process or the cost of sales for a given period. To view cross-enterprise planning data, you need to [Transfer the Results Planning Data to Profitability Analysis \[Page 126\]](#).

You can find further information in the SAP Library, under *Accounting* → *Controlling* → *Profitability Analysis*.

Periodic Processing in Project Controlling

1. Calculating overhead

In the first step, you enter a [Collective Confirmation for the Detailed Engineering \[Page 128\]](#). You then post the [Overhead \[Page 131\]](#) in the actual version. The system determines the overhead portions of the actual costs incurred for the project and updates them appropriately to the project.



The system determines the planned overhead costs automatically during the costing. For the actual costs, you need to calculate and update the actual overhead rates explicitly.

You can find further information in the SAP Library, under *Accounting* → *CO Controlling* → *Overhead Cost Controlling*

2. Progress Analysis

Periodic Processing

The system uses [Progress Analysis \[Page 132\]](#) to determine the cost and activity variances for the project, based on the planning data and the percentage of completion (POC). These values enable you to forecast the expected cost and activity developments.

You use the [Progress Report \[Page 134\]](#) for internal cost controlling and as an activity confirmation for the sold-to-party.

For more information, see the SAP Library, under *Logistics → Project System → Project Earned Value*.

3. Results Analysis

To get an overview of the results of your project, you [Execute Results Analysis \[Page 137\]](#). Results analysis is a prerequisite for the correct determination of the project incoming orders.

4. Project incoming orders

At the end of the period, you [Determine the Project Incoming Orders \[Page 138\]](#).

The system determines key figures for the incoming orders and open orders based on the sales orders assigned to the project. You can now evaluate your project data in the Project Information System ([Displaying Project-Specific Results \[Page 124\]](#)). It is now possible for you to make statements at an early stage regarding the expected results or results development of your projects.

You can find further information in the SAP Library under *Logistics → Project System → Revenues and Earnings → Project-Related Incoming Orders*.

Entering the Settlement Rule for the WBS Element

Entering the Settlement Rule for the WBS Element

Use

In this project step, you generate the relevant settlement profiles and settlement rules on the WBS elements.

The system uses the automatic generation of settlement rules (settlement rule and parameters for the settlement rule) according to the strategy defined in Customizing.

For more information, see the SAP Library, under *Logistics* → *Project System* → *Costs*.

Prerequisites

In Customizing of the *Project System* you have defined settlement profile ZEC001 and strategy Z4 for the automatic generation of the settlement rule on the WBS element.

In project profile IECPP01 we have stored strategy Z4.

Procedure

1. Call up the transaction as follows:


Menu Path	<i>Accounting</i> → <i>Project System</i> → <i>Financials</i> → <i>Period-End Closing</i> → <i>Single Functions</i> → <i>Settlement Rule</i> → <i>Individual Processing</i>
Transaction Code	CJB2

2. Enter the following data:

Field	Data
Project definition	A-20###
Period	Final period of the project
Fiscal year	Final fiscal year of the project
Test run	Deselect
Detail lists	Select

3. Choose .

You see the basic list of the log.

4. To call up detailed information, choose .

The lists shows you, for example, the strategy used and the generated settlement profile.

Result

As defined in strategy Z4, which is stored in project profile IECPP01, the system generates a settlement rule, and, if required, a PA transfer structure, for each WBS element.

In line with the settlement rule, the relevant data is settled to Profitability Analysis CO-PA.

Determining the Results Analysis Date



1. Call up the transaction as follows:

Menu Path	<i>Logistics → Sales and Distribution → Sales → Order → Display</i>
Transaction Code	VA03

2. Enter the following data:

Field	Data
Order	Your order number

To search for the document number of your order, you can use the PO number A-20###.

3. Choose .
4. Select the document item for the power station IECPP-1-PP01.
5. To display the detailed data, choose .
6. Choose the *Billing plan* tab page.
7. Note the billing date of the second partial invoice.

Executing Results Analysis in the Plan Version

Executing Results Analysis in the Plan Version

Use

You execute a revenue-proportional results analysis in the plan version.

Prerequisites

In Customizing for *Controlling* we have maintained the following settings for determining and updating the results:

- Results analysis key 130001 on the top WBS element
- Allocation structure 40 (IECPP: Settle. CO-PA power station)
- PA Transfer Structure 30 (sales orders/project)
- Settlement profile ZEC001 (IECPP: Settle. Res. Power Station)
- Plan version results analysis CO-PA400 (CO-PA IECPP Power station)

In the master data, we have also maintained the settlement cost elements 650000 (all costs) and 666000 (all revenues).




Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Financials → Planning → Allocations → Results Analysis → Proceed → Individual Processing</i>
Transaction Code	KKA2P

2. Enter the following data:

Field	Data
WBS element	A-20###
Period	Period of the noted billing date
Fiscal year	Fiscal year of the noted billing date
RA version	0

3. Choose .
4. Choose .
5. In the dialog box, choose .

To save the results analysis for both the controlling area currency and the company code currency, you need to save twice.

6. Choose .

Result




The system has assigned the cost of sales to the revenues incurred. It has also determined the stocks of work in process or reserves.

Displaying the Project-Specific Result


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Financials → Execute Report → Hierarchy Report</i>
Transaction Code	CJE0

2. Choose 001 Project Report →  ZECPP02 IECPP: Plan Oper. Profit.
3. Choose .
4. In the dialog box, choose .
5. Enter the following data:

Field	Data
Project	A-20###
Additional selection criteria	Delete
Object currency	CAD

6. Choose .

Result

The report contains the following key figures for this project:

- Cost of sales
- Work in process
- Reserves

Transferring Sales and Profit Planning Data to CO-PA

Transferring Sales and Profit Planning Data to CO-PA

Use

To get an enterprise-wide viewpoint, you settle the values to Profitability Analysis (CO-PA).


Procedure


1. Call up the transaction as follows:

Menu Path	<i>Accounting → Controlling → Profitability Analysis → Planning → Integrated Planning → Transfer Order/Project Planning → Transfer Project Plan – Individual Processing</i>
Transaction Code	CJ7E

2. Enter the following data:

Field	Data
WBS element	A-20###
Period	Period of the noted billing date
Version	0
Fiscal year	Fiscal year of the noted billing date
Test run	Deselect
Detail list	Select

3. Choose .

4. To call up detailed information, choose .

Result

Your project-related planning results have been transferred to Profitability Analysis (CO-PA).

Displaying the Cross-Project Results


Procedure

1. Call up the transaction as follows:


Menu Path	<i>Accounting → Controlling → Profitability Analysis → Information System → Execute Report</i>
Transaction Code	KE30

2. Enter the following data:

Field	Data
Profitability Reports	IDEA
Costing-based	Select


3. Choose .

4. Choose *001 Projekt Report → IDES-400 (IECPP: Plan Analysis)*.

5. Choose .

6. Enter the following data:

Field	Data
From Period/Year	Period/Year des Projektbeginns
To Period/Year	Period/Year des Projektabschlusses

7. Choose .

Result

You now see the following key figures for the entire enterprise:

- Revenue
- Cost of sales
- Contribution margin

Confirming the Detail Engineering

Confirming the Detail Engineering

Use

You use collective confirmation to confirm all activities for WBS element *Detailed Engineering* at the same time. The confirmed data form the basis of the progress determination. The posting date is the earliest start date of the activity *Detail Engineering: Instrumentation and Control*.


Procedure

Note the value of the *Earliest start date*.

Collective Confirmation from the Information System

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Structures → Structure Overview</i>
Transaction Code	CN41

2. If required, enter PS info profile **ZPCPP0000001**, then choose .

3. Enter the following data:




Field	Data
Project	A-20###

4. Choose .

Setting up the Application Toolbar

1. To include the function  in the application toolbar, choose  *Choose functions*.

The *Select Functions* dialog box appears.

2. On the left side of the screen, expand  *Verify* then click on  *Collective confirmation* and hold down the left mouse button to drag it into the right side of the screen.
3. Choose  *Copy*.

Confirming the Activities


1. Expand the nodes

 *Power plant*

 *Power plant(A-20###)*

 *Engineering(A-20###-02)*

 *Detail Engineering (A-20###-02-02)*

2. Note the value of *ESchStrt (Earliest scheduled start)* for the activity  *Detail Engineering Power Control Center*.





Confirming the Detail Engineering

The start date of the confirmation is the earliest start date of the activity *Detailed Engineering Instrumentation and Control*. The work continues until the end of the month. You therefore enter the posting date and the end date of the confirmation as the final working day in the month containing the earliest start date.

3. Select all of the lower-level activities assigned to the WBS element *Detailed Engineering*.



To select the entire line, click on  for the given activity. You can select more than one activity by keeping the Cntrl key pressed.

4. Choose  *Verify* → *Collective confirmation*.
5. Enter the following data in the upper area of the table:

Field	Data
PostgDate	Final working day in the month of the earliest start date
Un. (Unit)	HR
ExecStart (Confirmed start date of the execution)	Earliest start date
ExecFinsh (Confirmed finish date of the execution)	Final working day in the month of the earliest start date


6. Choose .

The system adopts the values from the upper table area for all activities.

7. In the lower table area for the individual activities, enter the following data:

Line	Act.work (actual work)	Pct (Percentage of completion)	Short Text
1	4320	50	Detail engineering: power control center
2	1800	75	Detail engineering: fuel supply
3	3720	25	Detail engineering: vessel
4	10800	50	Detail engineering: gas turbine
5	14760	75	Detail engineering: cooling system
6	7560	25	Detail engineering: steam turbine
7	4200	75	Detail engineering: Transformer
8	168	25	Detail engineering: Buildings
9	2160	50	Detail engineering Generator

Confirming the Detail Engineering

8. Choose .

Calculating Overhead Rates

Use

You now apply overhead to the actual costs incurred by the confirmation of the activities for detailed engineering.

You determine the overhead costs in the period in which you confirm the detailed engineering.

Prerequisites

In Customizing of the *Project System* under Controlling, costing sheet ZECPP01 has been maintained. The parameters for the overhead calculation are summarized in the costing sheet.

This costing sheet is assigned to all activities of detailed engineering. The assignment is made indirectly via project profile ZECPP01.

Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Financials → Period-End Closing → Single Functions → Applied Overhead → Individual Processing, Actual</i>
Transaction Code	CJ44


2. If required, enter controlling area 2000, then choose .

3. Enter the following data:

Field	Data
Project definition	A-20###
With orders	Select
Period	Month of the earliest start date
Fiscal year	Year of the earliest start date
Test run	Deselect
Detailed lists	Select

4. Choose .

You now see the log containing the results of the actual overhead calculation.

5. To analyze the individual overhead values, choose .

Result

The system calculates the overhead costs and updates them by cost element on the project activities under overhead cost elements.

Executing Progress Analysis

Executing Progress Analysis

Use

You use progress analysis to monitor the planned and actual progress of the project using the actual work (activity) performed.

The system valuates the activity using the total planned costs, the percentage of completion (POC) and the posted actual costs. Progress analysis provides you with precise information regarding the progress of the project, as well as the cost and date situation. This enables you to recognize trends and take appropriate control measures.

The results include the following data for the Detail Engineering activities, which form the basis for the progress analysis.

Activity	Planned POC in %	Total Planned Work in Hours	Actual Work in Hours	POC in %
Detail engineering: power control station	50	8640	4320	50
Detail engineering: fuel supply	50	2400	1800	75
Detail engineering: vessel	50	14880	3720	25
Detail engineering: gas turbine	50	14400	10800	50
Detail engineering: cooling system	50	14760	14760	75
Detail engineering: steam turbine	50	15120	7560	25
Detail engineering: generator	50	8640	2160	50
Detail engineering: transformer	50	8400	4200	75
Detail engineering: buildings	50	16800	168	25

In the Project Builder you can view the values entered for the individual activities. On the *Internal* tab page you see the planned values and on the *Dates* tab page the actual values.

Prerequisites

The following values have been defined in Customizing for *Project System*:

- Progress version 132
- Statistical key figure ZEC001
- Statistical key figure ZEC002

- Statistical key figure ZEC003
- Measurement method ZECPP00001 (Start-Finish 50-50)
- Cost element 650500 (PS-Progress analysis Default-KA)
- Cost element group EC_Salary
- Value category ZEC01
- Value category ZEC02
- Value category ZEC03


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Progress → Progress Determination → Individual Processing</i>
Transaction Code	CNE1

2. Enter the following data:

Field	Data
Project definition	A-20###
With orders	Select
Progress version	132
To period	Month and year of the earliest start date
Test run	Deselect

3. Choose .

Displaying the Progress Report

Use

In the information system you evaluate the data together with additional project key figures.

In addition to standard reports, you can also define your own reports. The flexible project reports enable you to define comparison figures in addition to the progress analysis values. Cost and activity variances are important project key figures. You can evaluate these values either at the level of individual project elements or aggregated for the entire project or subproject.

Prerequisites

Report ZECPP03 has been maintained.


Procedure

1. Call up the transaction as follows:

Menu Path	<i>Logistics → Project System → Information System → Tools → Hierarchy Report → Report → Execute</i>
Transaction Code	CJE0

2. Enter the following data:

Field	Data
Report type	Project report
Report	ZECPP03


3. Choose *001 Projekt Report* →  *ZECPP03 IECPP: Earned Value.*

4. Choose .

5. In the dialog box, choose .

6. Enter the following data:

Field	Data
Project	A-20###
Period / year	Period and year of the posting date of the confirmation in the form ###.#### (for example, 002.2000)

7. Choose .

The *IECPP: Execute Progress: Report* screen appears.

8. Expand the structure.
9. To call up the detailed view, expand the structure.

Result

The values determined by the system lead to the cost and activity variances for the Detail Engineering activities.

The values can be interpreted as follows:

Displaying the Progress Report

- A negative cost variance shows that you have incurred more costs than intended. A positive cost variance shows that the work has been cheaper than planned.
- A positive activity variance shows that the project progress on the key date is better than planned. A negative value shows that the project progress is less than planned.

In the Planning accuracy column you see a planning index.

- A planning index of 1 means that your cost planning was perfect.
- An index of 0.5 means that you have incurred twice as many costs as planned.

Additionally, you can see the forecast cost to complete, the forecast total costs and the difference between the planned costs and the forecast total costs.

Executing Results Analysis

Use

You execute a revenue-proportional results analysis in the actual version. In this process, you require results analysis to correctly display the project order stock. As the payment triggers the invoice only on the clearing day of the FI document, you execute results analysis for the corresponding period.




Procedure

1. Call up the transaction as follows:


Menu Path	From the <i>Controlling</i> node, choose <i>Period-End Closing</i> → <i>Single Functions</i> → <i>Results Analysis</i> → <i>Proceed</i> → <i>Individual Processing</i>
Transaction Code	KKA2

2. Enter the following data:

Field	Data
WBS element	A-20###
Period	Period of the clearing date for the invoice
Fiscal year	Fiscal year of the clearing date for the invoice
RA version	0

3. Choose .
4. Choose .
5. In the dialog box, choose .

To save the results analysis for both the controlling area currency and the company code currency, you need to save twice.

6. Choose .

Result

The system has assigned the cost of sales to the revenues incurred. It has also determined the stocks of work in process or reserves.

Determining the Project Incoming Orders

Determining the Project Incoming Orders

Use

The system uses this function to determine key figures for incoming orders and open orders, based on sales orders assigned to projects. The key figures for the incoming orders are the expected revenues, costs, and quantities from sales orders that have been closed or changed during the current period. It is now possible for you to make statements at an early stage regarding the expected results or results development of your customer projects.

You execute the run to determine the incoming orders at the end of the period. You can execute the run more than once within a given period. The system determines the changes for the incoming orders compared to the previous run.

In this demo, you enter the project finish as the period to ensure that you generate meaningful key figures.

You can find further information in the SAP Library under *Logistics* → *Project System* → *Revenues and Earnings* → *Project-Related Incoming Orders*.

Prerequisites

The top WBS element Power station (A-20####) is indicated as a billing element. The billing element has the status Released.

The system updates the sales order value on the billing element. This is because in Customizing of the Project system we have activated the update of planned revenues from sales documents.

The following values have also been defined in Customizing for the *Project System*:

- Cost element group EC_Salary
- Value category ZEC01
- Value category ZEC02
- Value category ZEC03

Procedure

1. Call up the transaction as follows:


Menu Path	From the <i>Period-End Closing</i> node, choose <i>Single Functions</i> → <i>Incoming Orders</i> → <i>Individual Processing</i>
Transaction Code	CJA2

2. Enter the following data:

Field	Data
Project definition	A-20####
Period	Final period of the project
Fiscal year	Final fiscal year of the project
Additional selection criteria	Delete

Determining the Project Incoming Orders

Test run	Deselect
Detail lists	Select

3. Choose .

When the incoming order run is complete, the system displays a log.

This log consists of

- A basic list with output parameters and statistics regarding the number of processed objects
- A detailed list, containing information about the individual objects, such as, cost element, revenues, costs and quantity

Result

The system determines the values for the incoming orders on the billing element. It also updates the values on the incoming order cost elements for the specified period under value type 19. The system calculates the reduction values for the incoming order from the accrued actual data and updates the value for the relevant category (open orders: reduce through billing).

Displaying the Incoming Orders and Order Stock

Displaying the Incoming Orders and Order Stock

Use

You evaluate the incoming orders and the order stock in the Project Information System. You can compare the current planned and actual revenues with the sales order value.

Procedure

1. Call up the transaction as follows:

Menu Path	From the <i>Information System</i> node, choose <i>Financials</i> → <i>Revenues and Earnings</i> → <i>Hierarchical</i> → <i>Incoming Orders / Balance</i>
Transaction Code	S_AL_87013569

2. Enter the following data:

Field	Data
Project	A-20###

3. Choose .
4. In the dialog box, choose .

Result

The key figures for the incoming orders are the expected revenues, costs, and the results of the sales order for project A-20###, which has been closed or changed in the current period.