ERP - PROJECT

SUGMAYA

END USER DOCUMENT

FOR

PLANT MAINTENANCE

GENERAL MAINTENANCE

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1 DOCUMENT CONTROL

This is a controlled document and will be maintained with UJVNL IT team.

Changes to this document will be recorded below and must be published to all interested parties.

1.1 DOCUMENT HISTORY

Version	Date	Author	VERSION DETAILS
V01	06-02-2018	Nimish Agrawal	First ISSUE

1.2 DISTRIBUTION

Date	Name	Purpose
	Mandeep Singh	For Information
	Brijesh Yadav	For Information

2 PROCESS OVERVIEW: GENERAL MAINTENANCE

The General maintenance process shall consist of the following major activities:

1. Raising of General Maintenance notification to notify the responsible Maintenance department/ main work center.
2. Notification release (Put in process) by maintenance dep't.
3. Creation of General Maintenance order by maint. dep't if permit, material or external service (contractual job) is needed to carry out the maintenance.
    - Planning of operations (activities)
    - Planning or materials required
    - Planning of manpower required
    - Planning of external service quantity required
4. Release of order by authorized person in maintenance dep't.
5. Printing of materials Reservation slip (SIV) for issuing materials from store by maint. dep't
6. Issue of materials from store by store dep't
7. Execution of work at site by internal manpower and/or external agency.
8. Time confirmation of order operations (internal) by maint. dep't
9. Entry of findings (defect, cause, tasks etc.) in the General notification by maint. dep't
10. Completion of tasks in notification and Notification completion (NOCO)
11. Creation of service entry sheet for the external operations (if done by external agency) by maint. dep't
12. Entry of consumed quantity of external services in the service entry sheet and acceptance/approval of service entry sheet.
13. Technical Completion (TECO) of order.
14. Month-end settlement of Maint. order by F&A dep't.
15. Business completion by maint. dep't

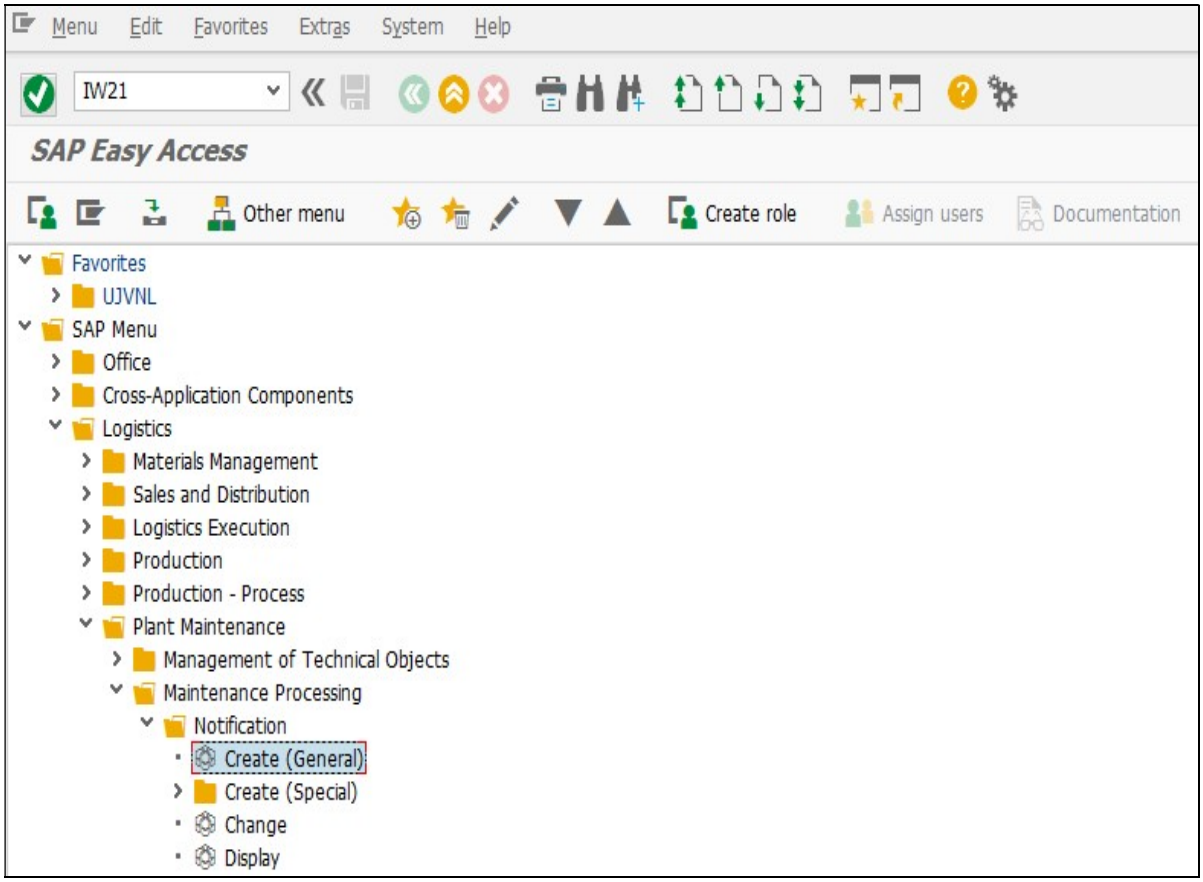
3 BUSINESS PROCESS PROCEDURE: GENERAL MAINTENANCE

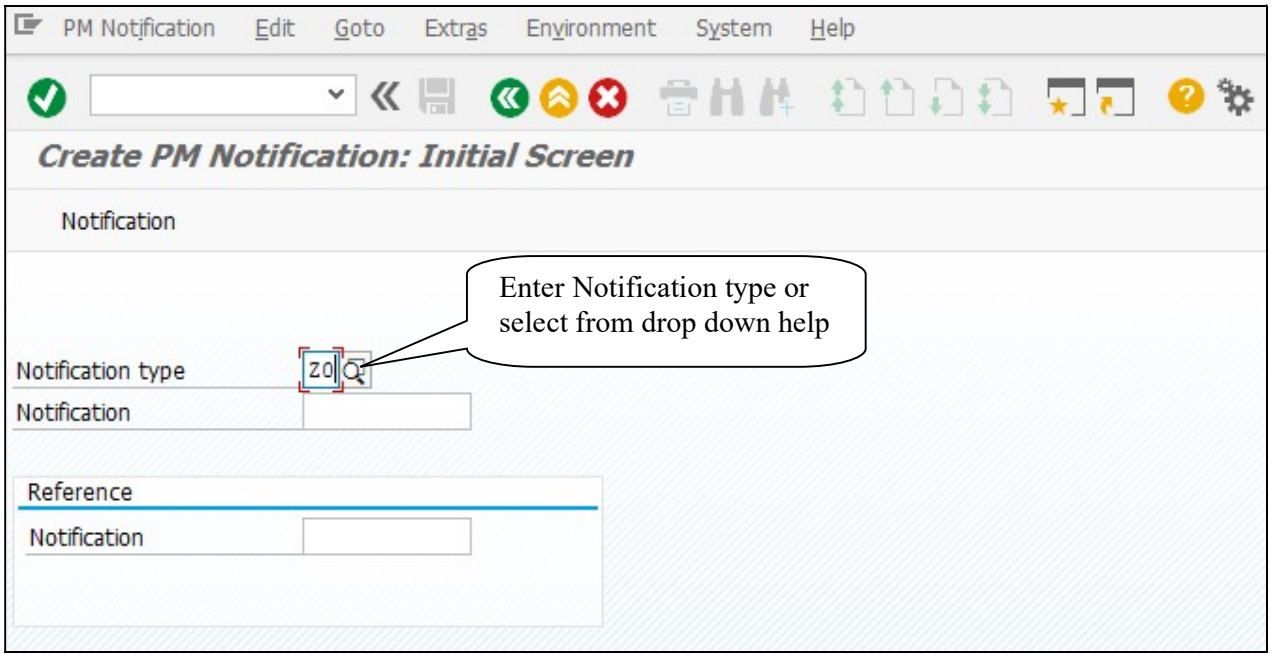
3.1 CREATE GENERAL MAINTENANCE NOTIFICATION

When operation department will notice an abnormality or any job requirement falling under general maintenance category, then it will raise a notification of type Z0: General Maintenance request.

It will enter a brief description of Work to be done, Reference object (Functional Location / Equipment) related with that general work, optionally the detail description in subject long text and task required to be done.

Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification → Create (General)
Transaction Code	IW21

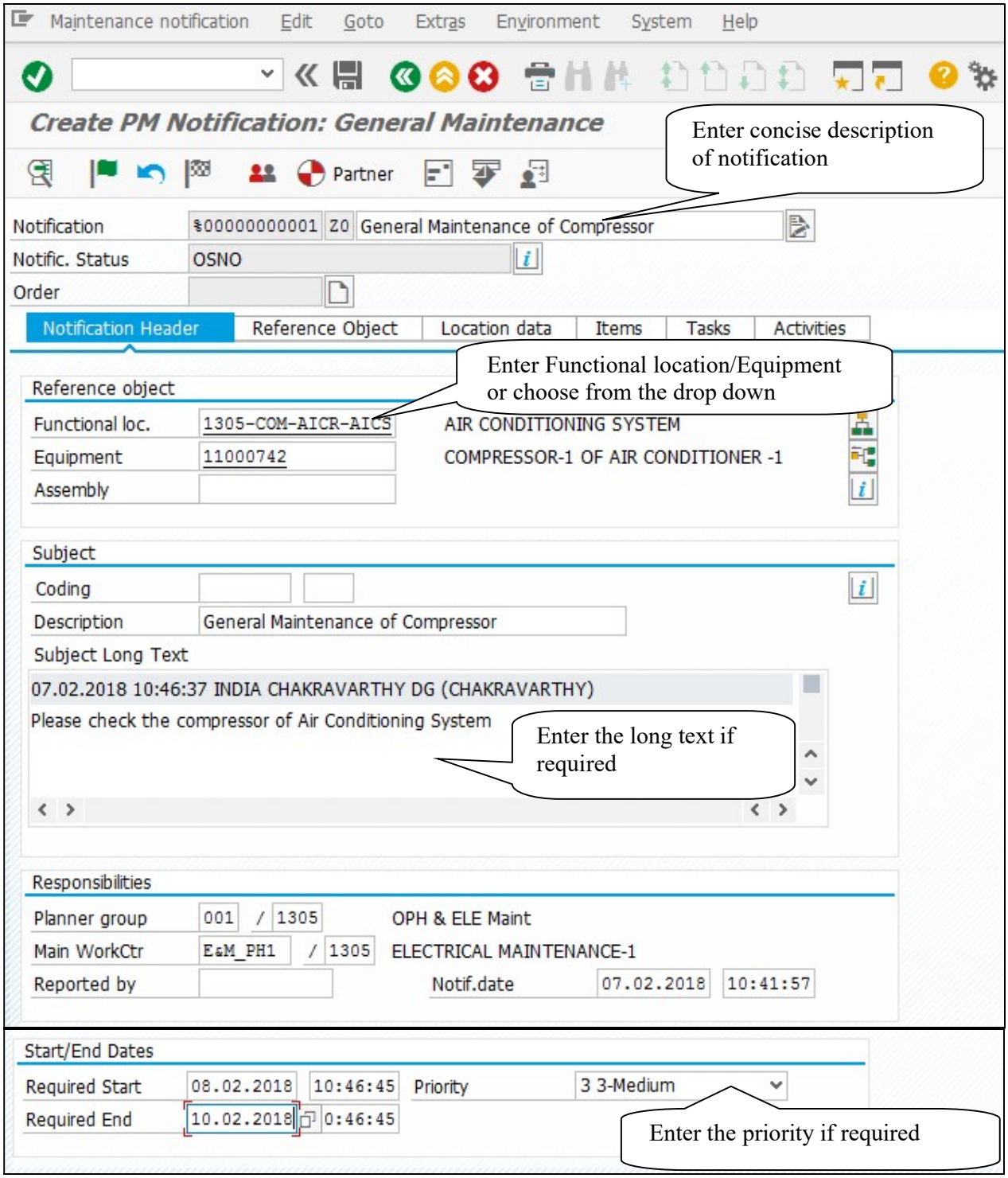




On running IW21, we get the initial screen as shown below:

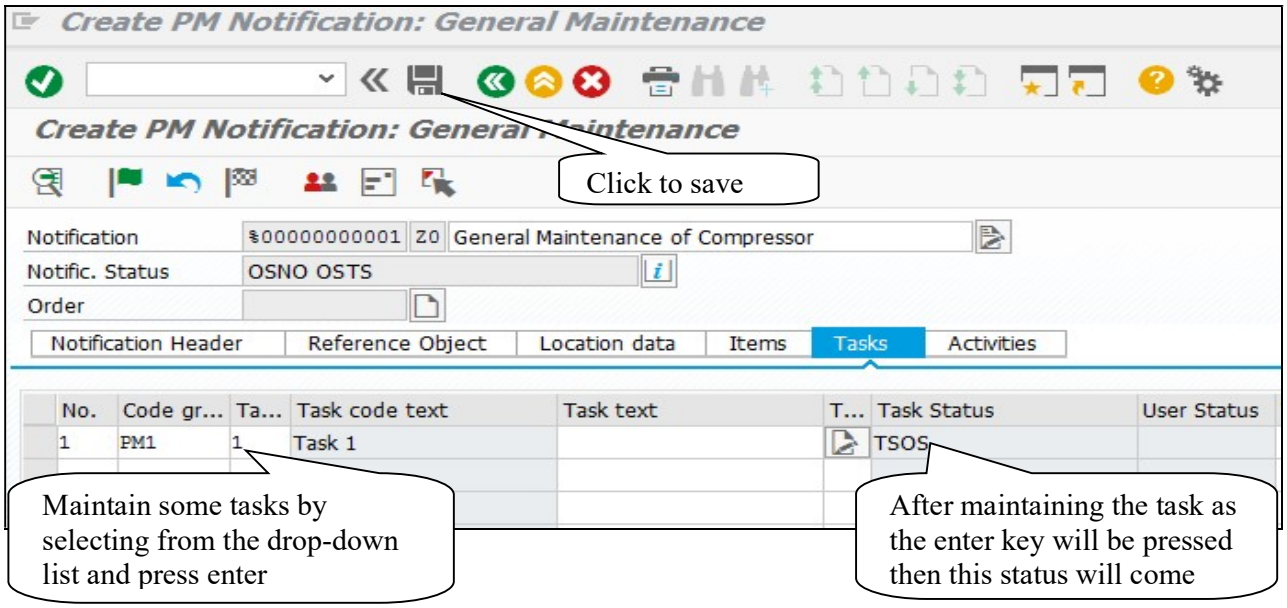
Step No	Field Name	Description	User Action and Values
1	Notification Type	Select type of Notification as per requirement	Notification type Z0 is for General Maintenance Request. Select from dropdown list (F4 help for the field).

Press “Enter” key or select “Enter” icon . Create PM Notification: General Maintenance screen will open.

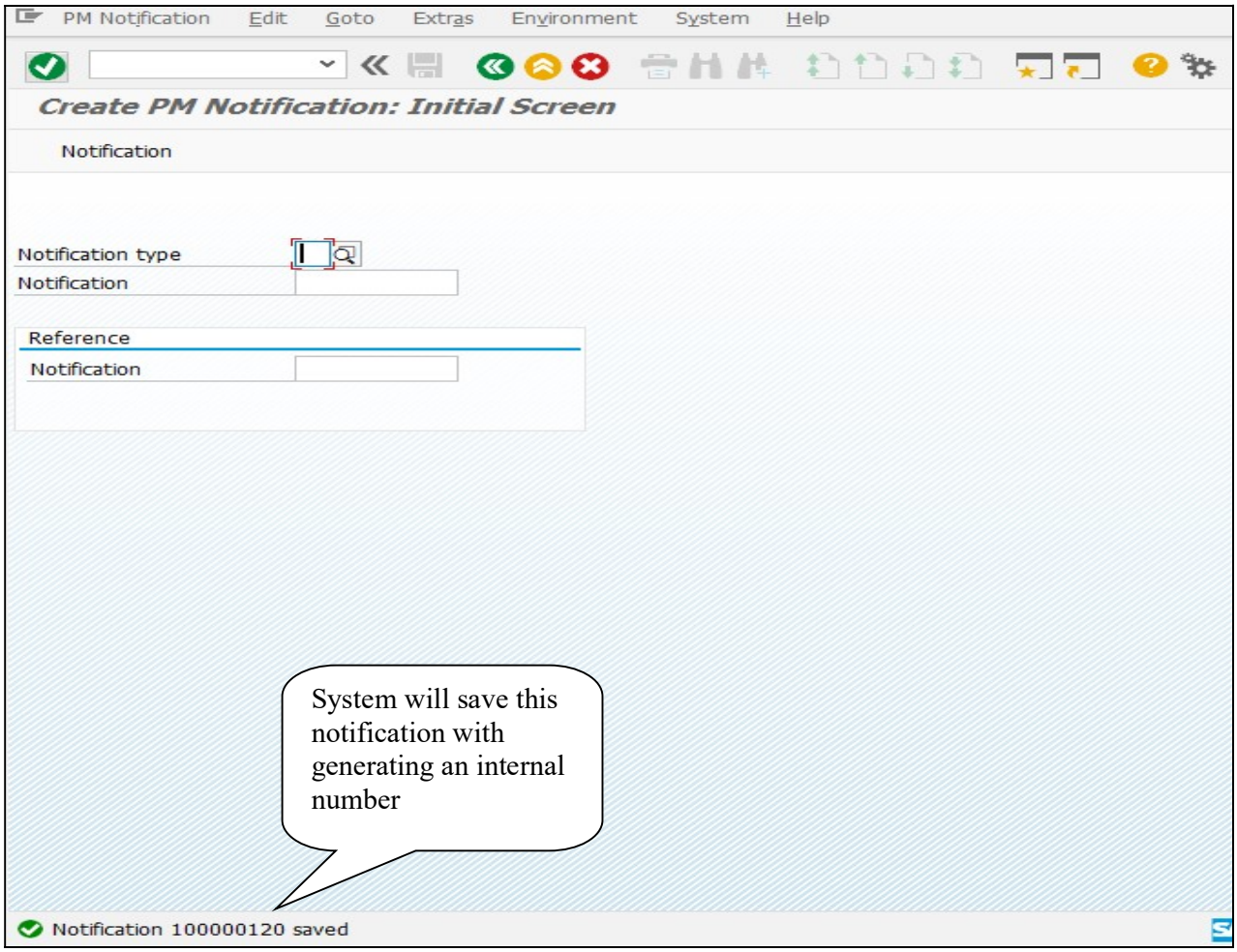

Maintenance notification
Edit
Goto
Extras
Environment
System
Help
Create PM Notification: General Maintenance
Partner
Enter concise description of notification
Notification
%00000000001
Z0
General Maintenance of Compressor
Notific. Status
OSNO
Order
Notification Header
Reference Object
Location data
Items
Tasks
Activities
Enter Functional location/Equipment or choose from the drop down
Reference object
Functional loc.
1305-COM-AICR-AICS
AIR CONDITIONING SYSTEM
Equipment
11000742
COMPRESSOR-1 OF AIR CONDITIONER -1
Assembly
Subject
Coding
Description
General Maintenance of Compressor
Subject Long Text
07.02.2018 10:46:37 INDIA CHAKRAVARTHY DG (CHAKRAVARTHY)
Please check the compressor of Air Conditioning System
Enter the long text if required
Responsibilities
Planner group
001
/ 1305
OPH & ELE Maint
Main WorkCtr
E&M_PH1
/ 1305
ELECTRICAL MAINTENANCE-1
Reported by
Notif.date
07.02.2018
10:41:57
Start/End Dates
Required Start
08.02.2018
10:46:45
Priority
3 3-Medium
Required End
10.02.2018
0:46:45
Enter the priority if required

Step No	Field Name	Description	User Action and Values
1	Notification (short text)	Notification short text (or title of the PM notification)	Enter a short text. Long text is available, if needed.
2	FunctLocation	Functional Location number for which the notification refers	Enter a functional location number, if known or select from F4 help. Can be determined from the equipment
3	Equipment	Equipment number for which the notification refers (reference object)	Enter an equipment number, if known or select from F4 help.
4	Description (Long text)	Long text description	Enter a long text for detail explanation of Work or entering comments. It is also used for entering comments at any stage of notification processing by different persons. The person name and time is logged with each comment.
5	Planner Group	Group responsible for planning tasks	Enter department and maintenance plant. Will be automatically determined from the reference object.
6	Main WorkCtr	Work center responsible for the completion of the maintenance tasks	Enter a work center and maintenance plant. Will be automatically determined from the reference object.
7	Reported By	Person who reported request/problem	NA
8	Notif.Date	Date and time the request/problem was noted	Defaults to current date and time.

Items (damage and cause) are optional entries in General Maintenance Notification.
Hence directly go to All tasks tab page to enter the required tasks as shown below.



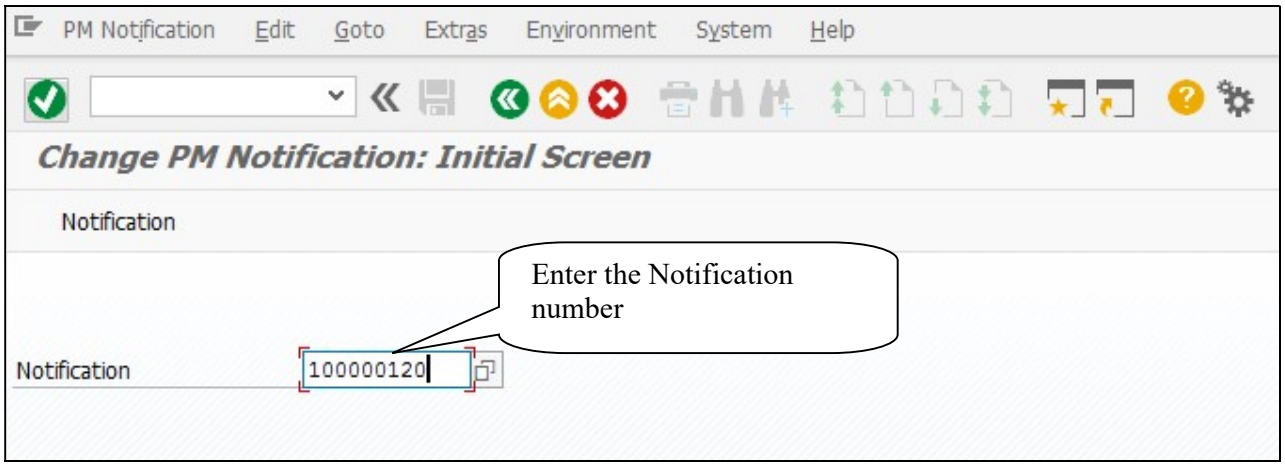
Additional text can be added by user in the Task text field to describe/elaborate the task if task code text is not sufficient. Save the Notification.



3.2 RECEIPT OF GENERAL MAINTENANCE NOTIFICATION BY MAINTENANCE

The Notification will be received by the concerned Maintenance department to which it was referred. An authorized person from that dept. will release the notification after assessing the relevance of the job required. Before releasing the notification, he will check the Required Start / End dates, Planner group and Main work center and assign task(s) if not entered before.

Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification → Change
Transaction Code	IW22



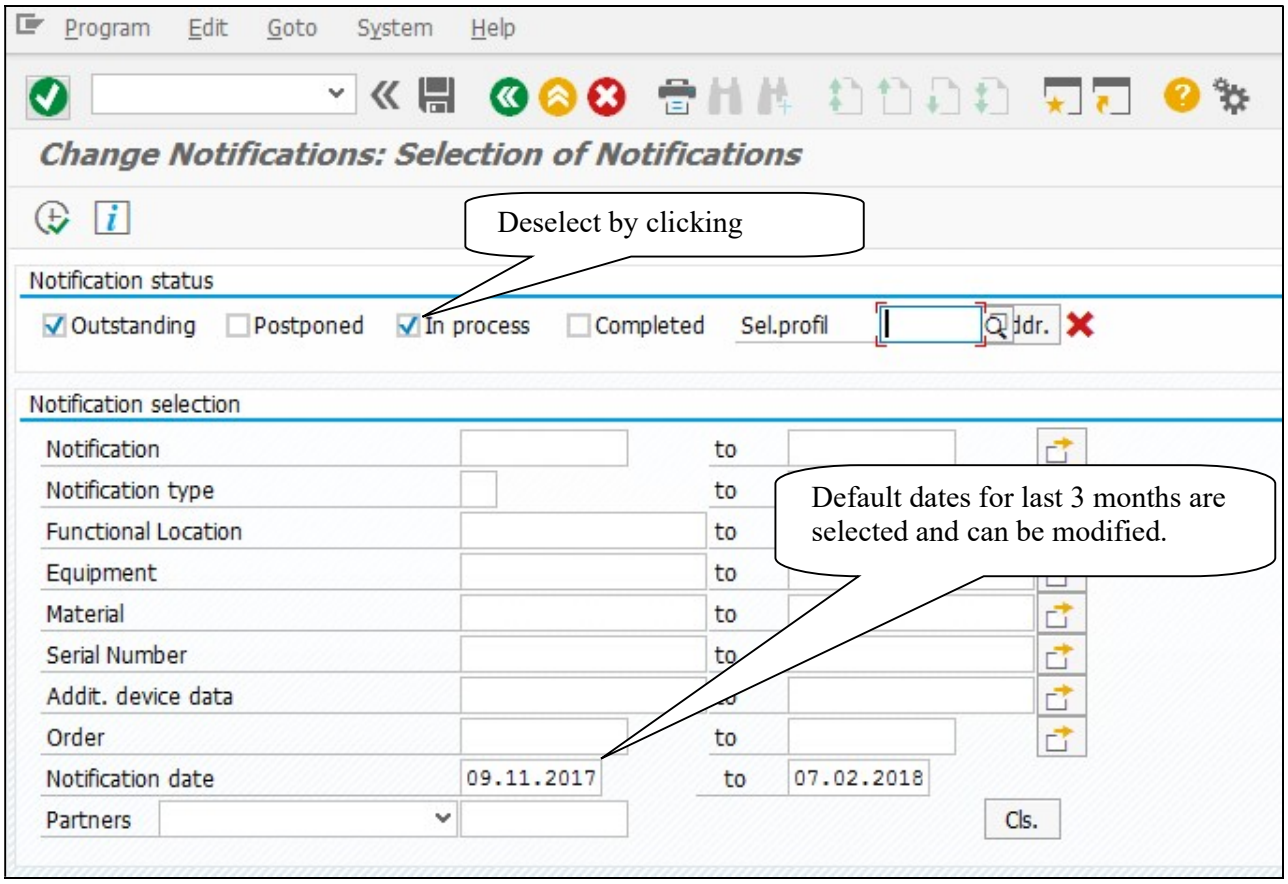
Enter the following data in the Input screen to open the notification in Change mode

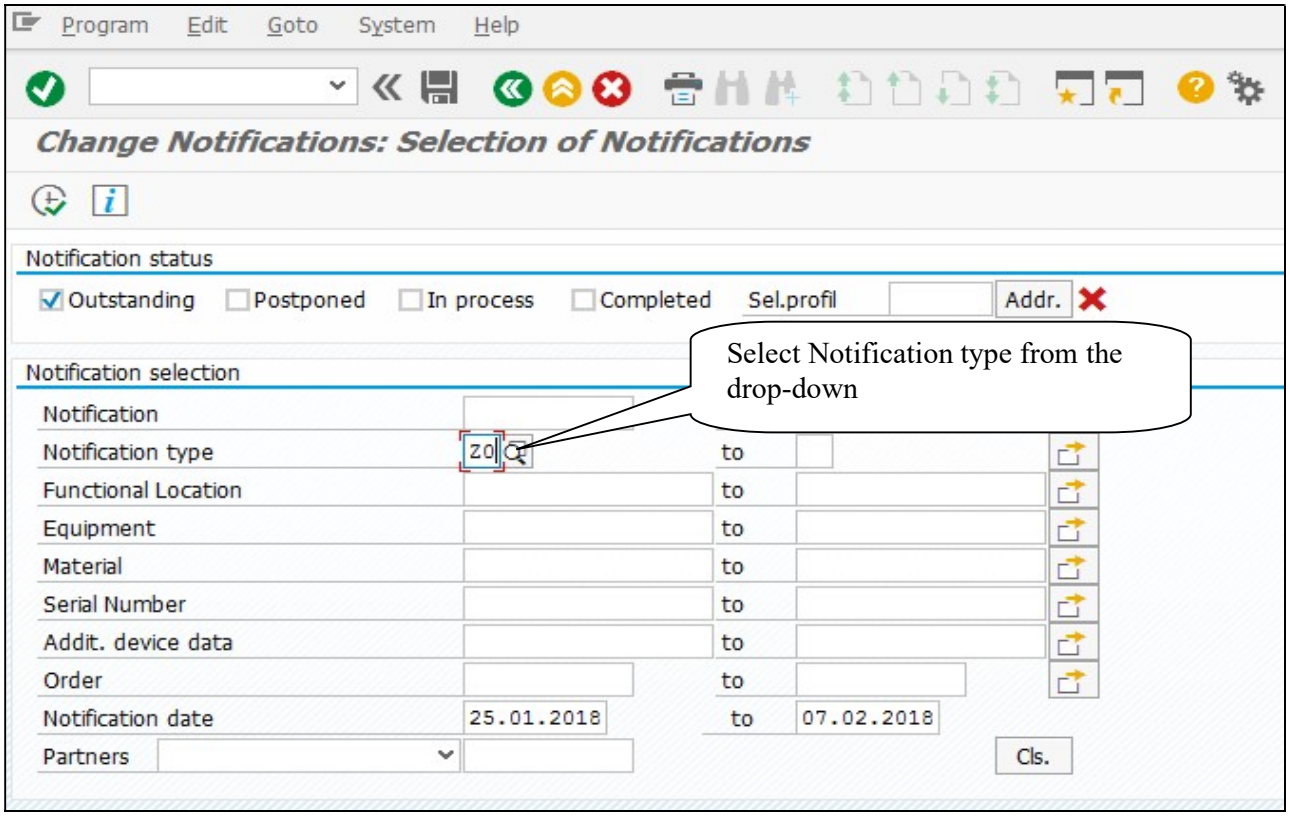
Step No	Field Name	Description	User Action and Values
1	Notification	Number of the notification to be changed / updated	Enter the notification number 100000120

Press “Enter” key or select “Enter” icon . Change PM Notification: General Maintenance screen will open.

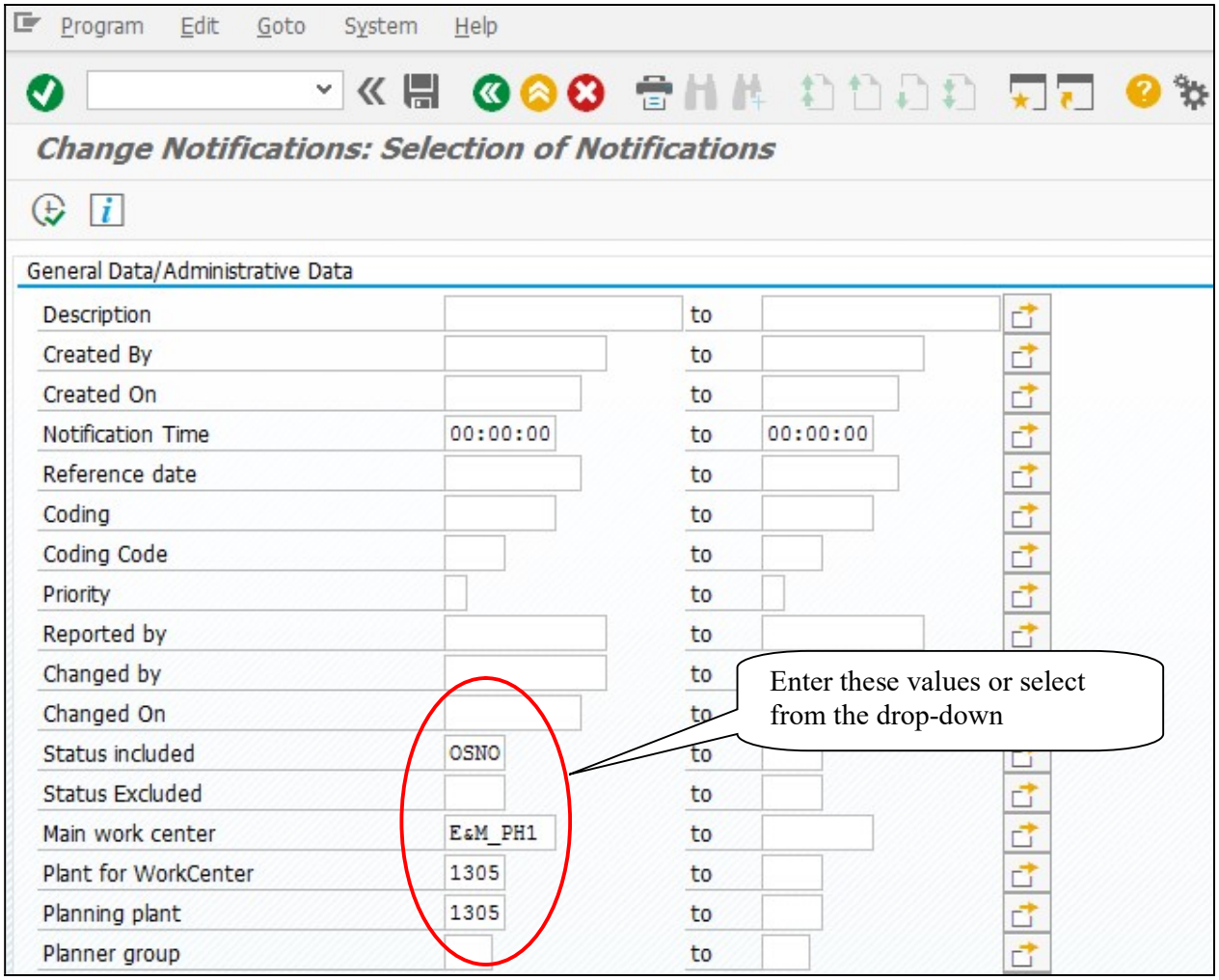
Alternate method to choose the notification from change notification list:

Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Notification → List Editing → Change
Transaction Code	IW28

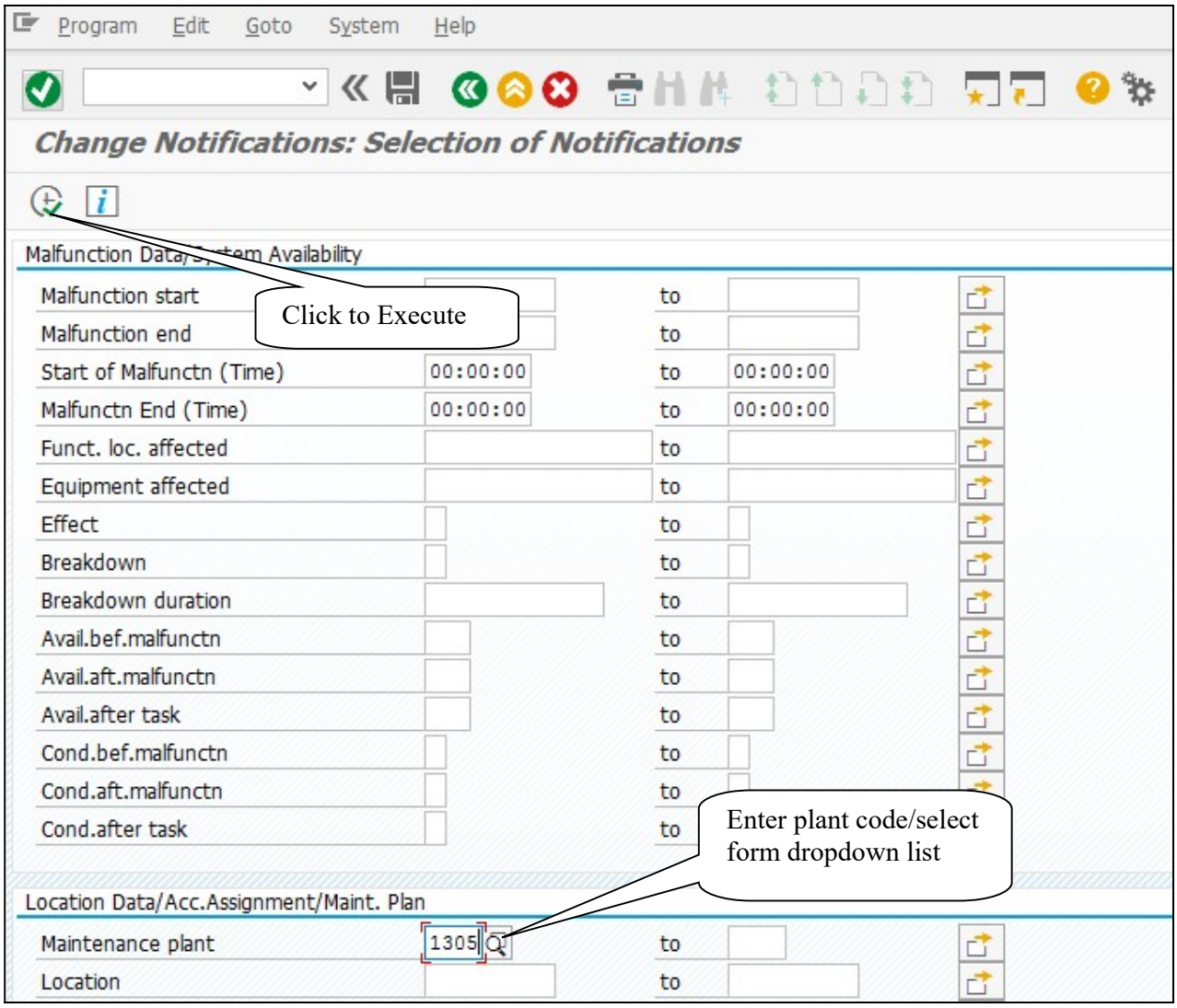

Program Edit Goto System Help
Change Notifications: Selection of Notifications
Deselect by clicking
Notification status
Outstanding
Postponed
In process
Completed
Sel.profil
Addr.
Notification selection
Notification
Notification type
Functional Location
Equipment
Material
Serial Number
Addit. device data
Order
Notification date
09.11.2017
to
07.02.2018
Partners
Cls.
Default dates for last 3 months are selected and can be modified.


Program Edit Goto System Help
Change Notifications: Selection of Notifications
Notification status
Outstanding
Postponed
In process
Completed
Sel.profil
Addr.
Notification selection
Notification
Notification type
Z0
Functional Location
Equipment
Material
Serial Number
Addit. device data
Order
Notification date
25.01.2018
to
07.02.2018
Partners
Cls.
Select Notification type from the drop-down

Go down in the screen. Enter selection values for notification status and selection values for your Main work center and Planner group (Maint. dep't) or select from drop-down list.

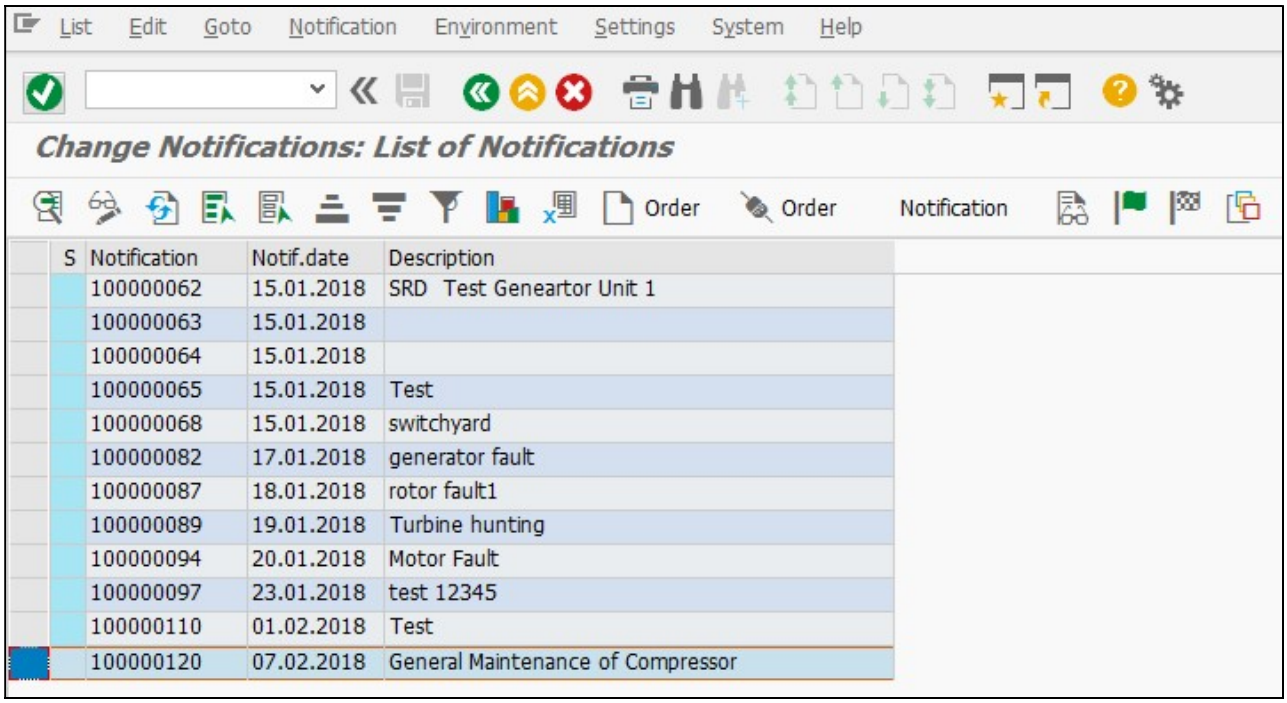


Go down in the screen. Enter the selection value for your **Plant** or select from dropdown list



Step No	Field Name	Description	User Action and Values
1	Outstanding	Status indicator for the notification to be selected	Check this status indicator – Outstanding
2	Notification date (From & To)	Notifications dates for selection	Default from and to dates will appear with to date as today's date. Change them if require.
3	Notification type	Enter notification type(s) for selection.	Should include type Z0
4	Status included	Status which a maintenance notification should have for selection.	Enter the value as OSNO for selection. The system selects only those PM notifications which have this status and which also fulfill all the other selection criteria you have entered.
5	Plant	Plant Code	Enter your plant code or select from dropdown list.

Click execute button at top left of the screen. You will get the list of notifications fulfilling the above selection criteria.



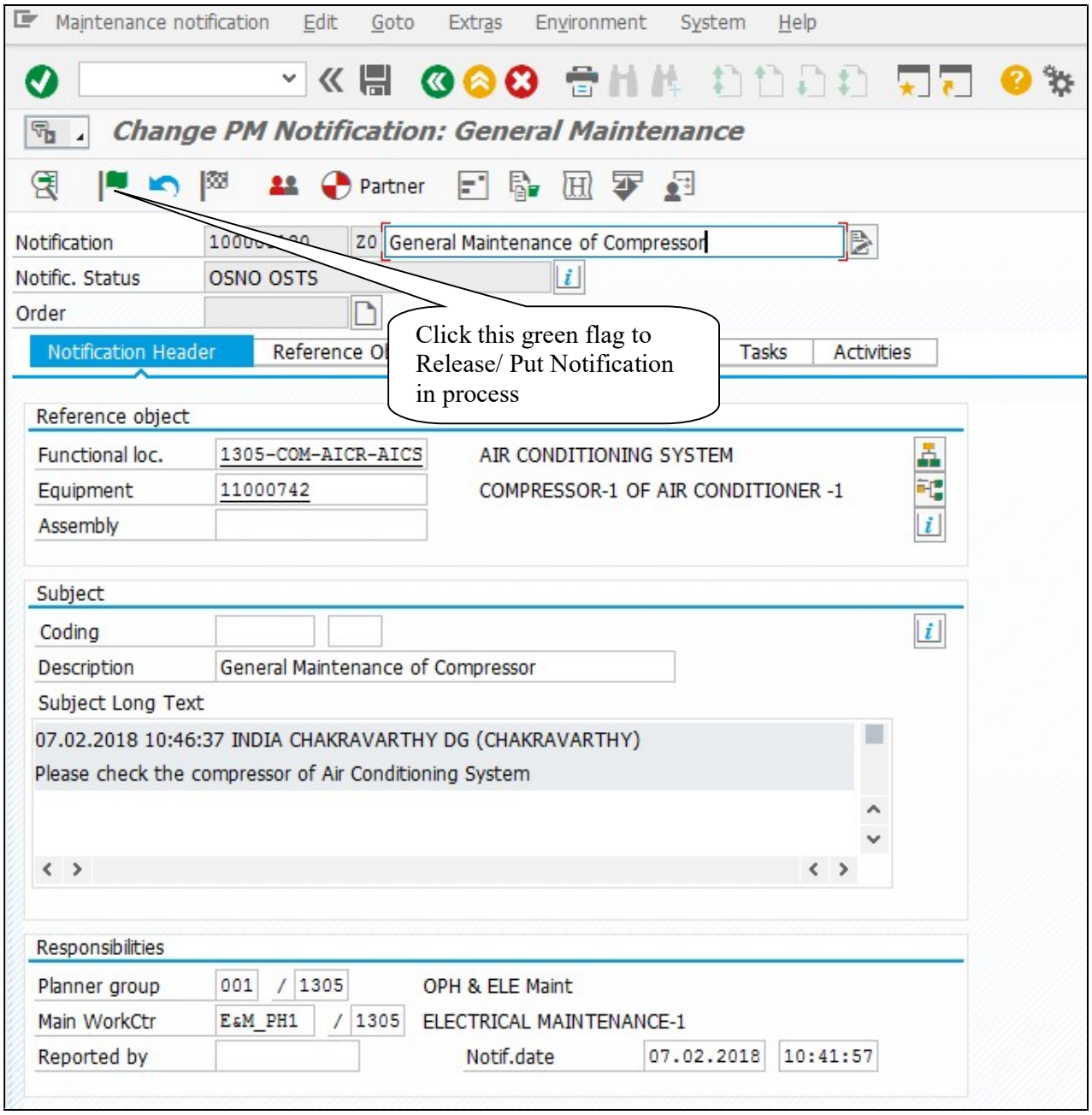
S	Notification	Notif.date	Description
	100000062	15.01.2018	SRD Test Geneartor Unit 1
	100000063	15.01.2018	
	100000064	15.01.2018	
	100000065	15.01.2018	Test
	100000068	15.01.2018	switchyard
	100000082	17.01.2018	generator fault
	100000087	18.01.2018	rotor fault1
	100000089	19.01.2018	Turbine hunting
	100000094	20.01.2018	Motor Fault
	100000097	23.01.2018	test 12345
	100000110	01.02.2018	Test
	100000120	07.02.2018	General Maintenance of Compressor

Select your notification and click button at top of the page or alternatively you can double click on notification number to display the notification in change mode.

- The user specific notification list selection variant can be saved after entering the required selection inputs. This way every time the user will get the selection criteria defaulted when he will run the transaction IW28.
- Same way user specific notification list layout variant can be saved after setting the columns & their sequence. This way every time the user will get the notification list layout defaulted when he will execute the transaction IW28.

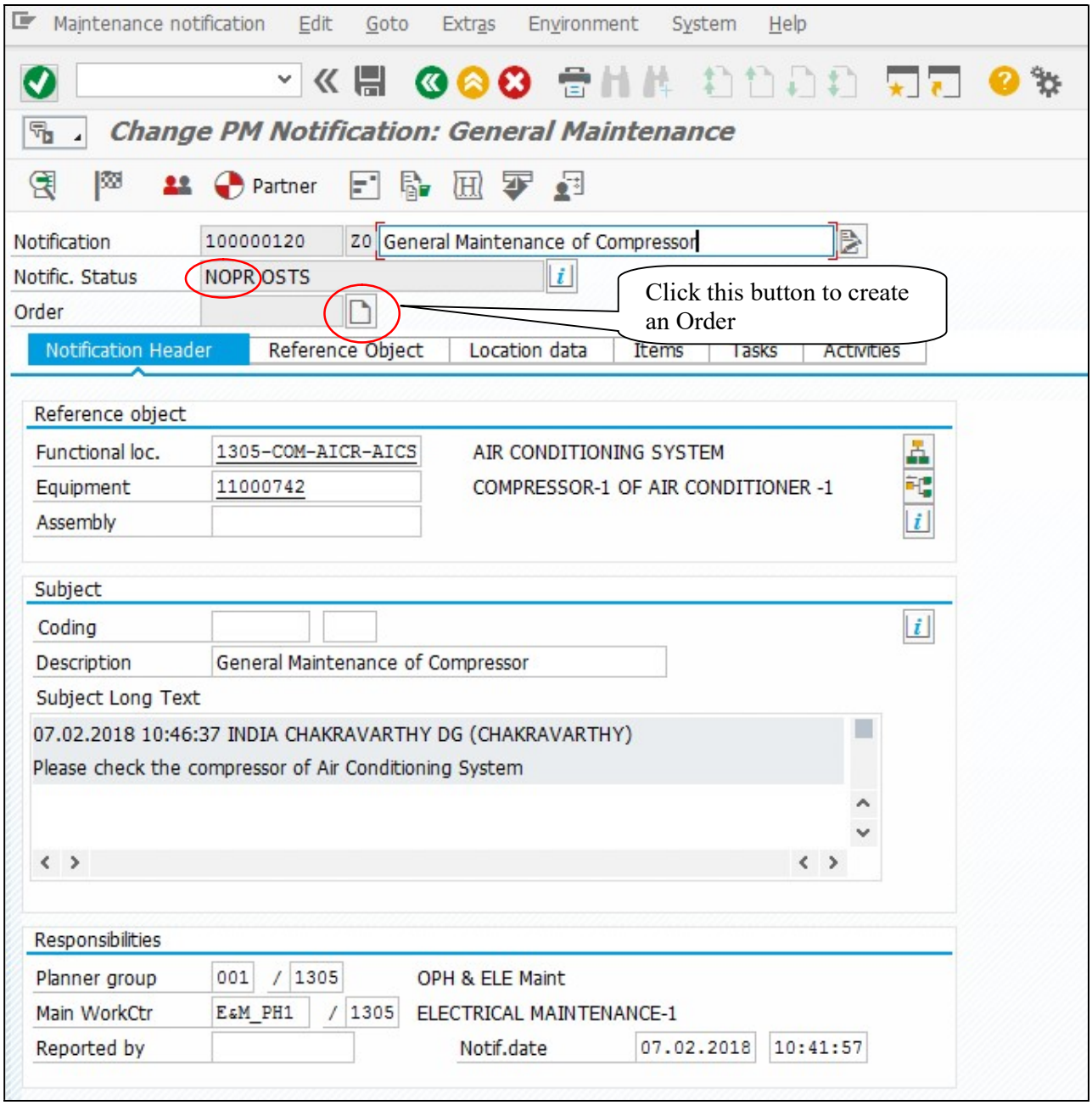
Screen **Change PM Notification: General Maint**, will be shown:

After Opening the Notification, Maintenance Department will check the Notification data e.g. Planner group, Maint work center, Priority of the job etc. If any change in the data is required then that will be changed otherwise If no change is required then the Notification will be Put in Process (Released).



Click Green Flag button at top left of the screen to put Notification in process as shown in the above screen.

After putting Notification in Process, status of Notification will get changed from OSNO to NOPR as shown below.

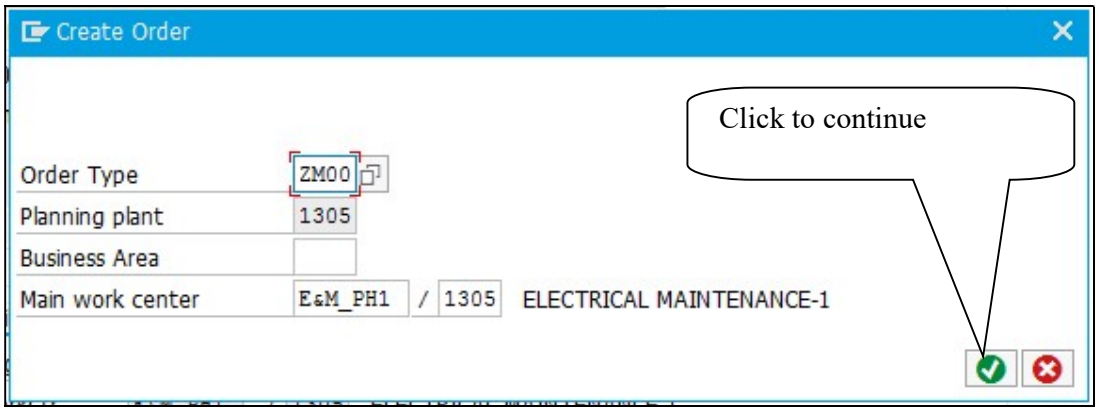


3.3 CREATION OF GENERAL MAINT. ORDER FOR THE NOTI BY MAINTENANCE

After releasing the Notification, if material, external service (contractual job) and permit is needed to carry out the maintenance, the maintenance department will do the planning (e.g.- external service, Material etc.) and therefore create a Maint. order to act upon the notification.

Process continues from the previous screen.

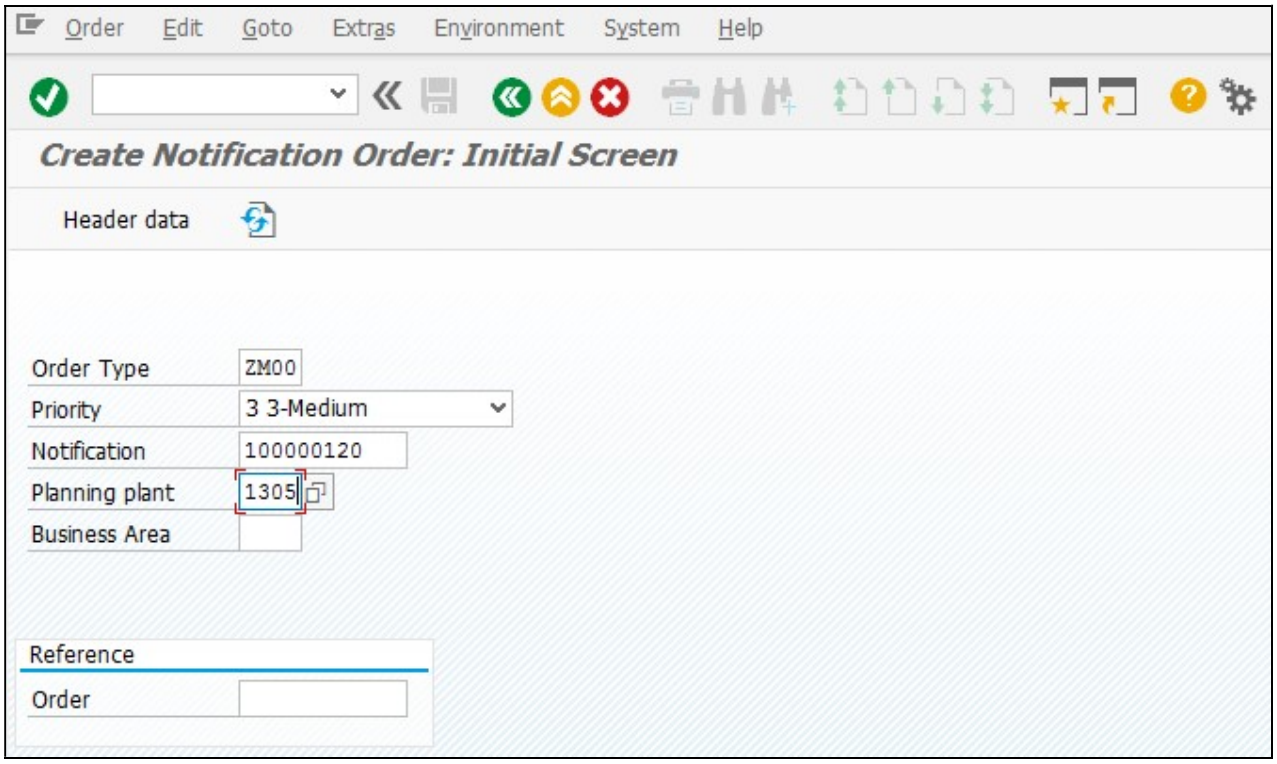
- An Order can be created directly from the Notification screen. To create an Order directly from the notification screen, click button (create order), as shown in the above screen shot.
- Then one pop will come as shown below where order type, Plant and Work center are defaulted and then press enter or click



Alternate method to create order for the notification:

Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Create(Special) → Order for notification
Transaction Code	IW34

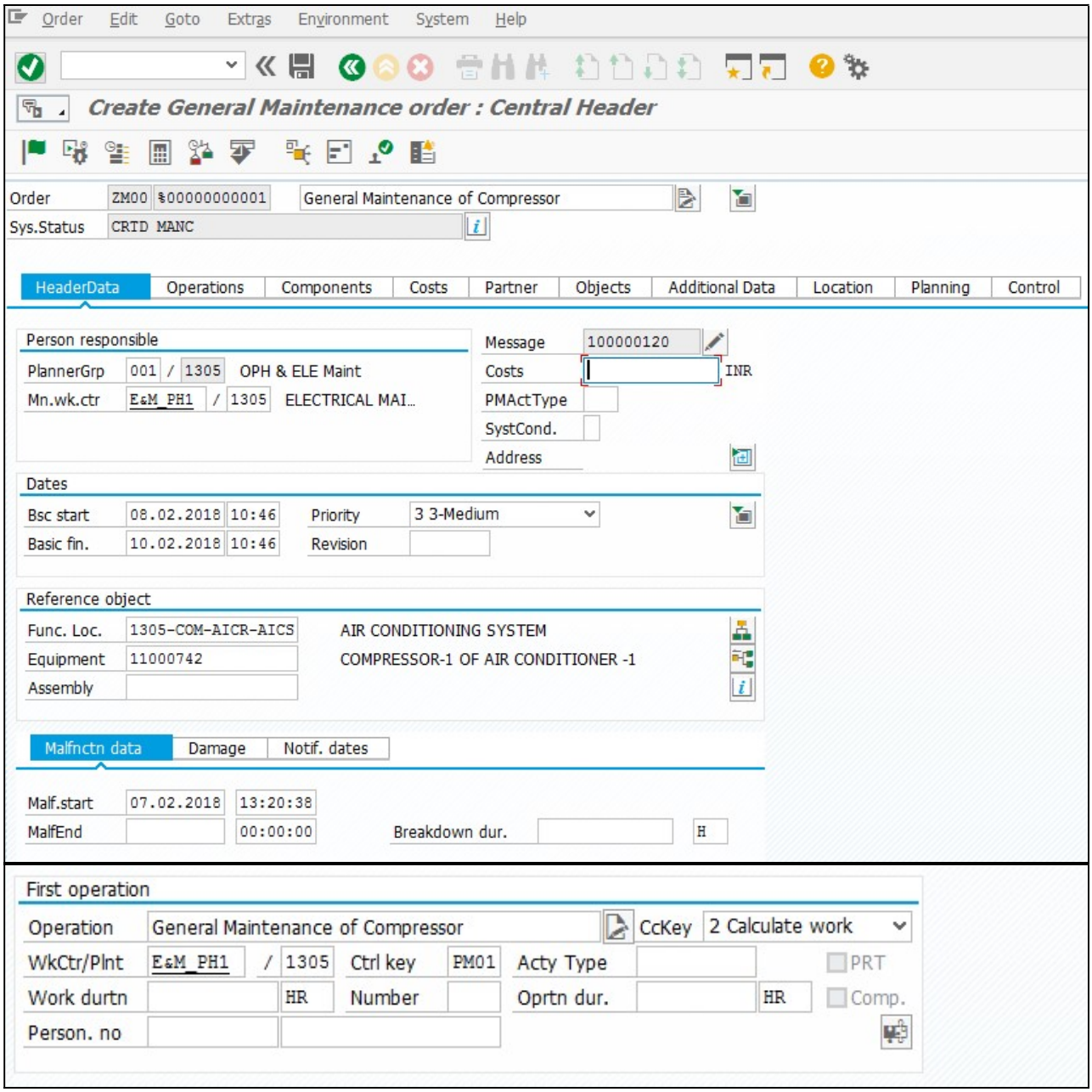
On the screen **Create Notification Order: Initial Screen**, make the following entries:



Step No	Field Name	Description	User Action and Values
1	Order Type	Select from the drop-down list. Enter it if known at this stage.	ZM00 is for General Maint. order

2	Notification	Notification No for which the order to be created	Enter the Notification No. if known or select from the drop-down list.
3	Planning Plant	Planning Plant for which notification has been created	Planning Plant - 1305

Press “Enter” key or select “Enter” icon . Create General Maintenance order: Central header screen will open. Data will get copied from the Notification E.g. Order short text, Planner Group, Maint work center, Reference object etc. If any changes are required it can be done.

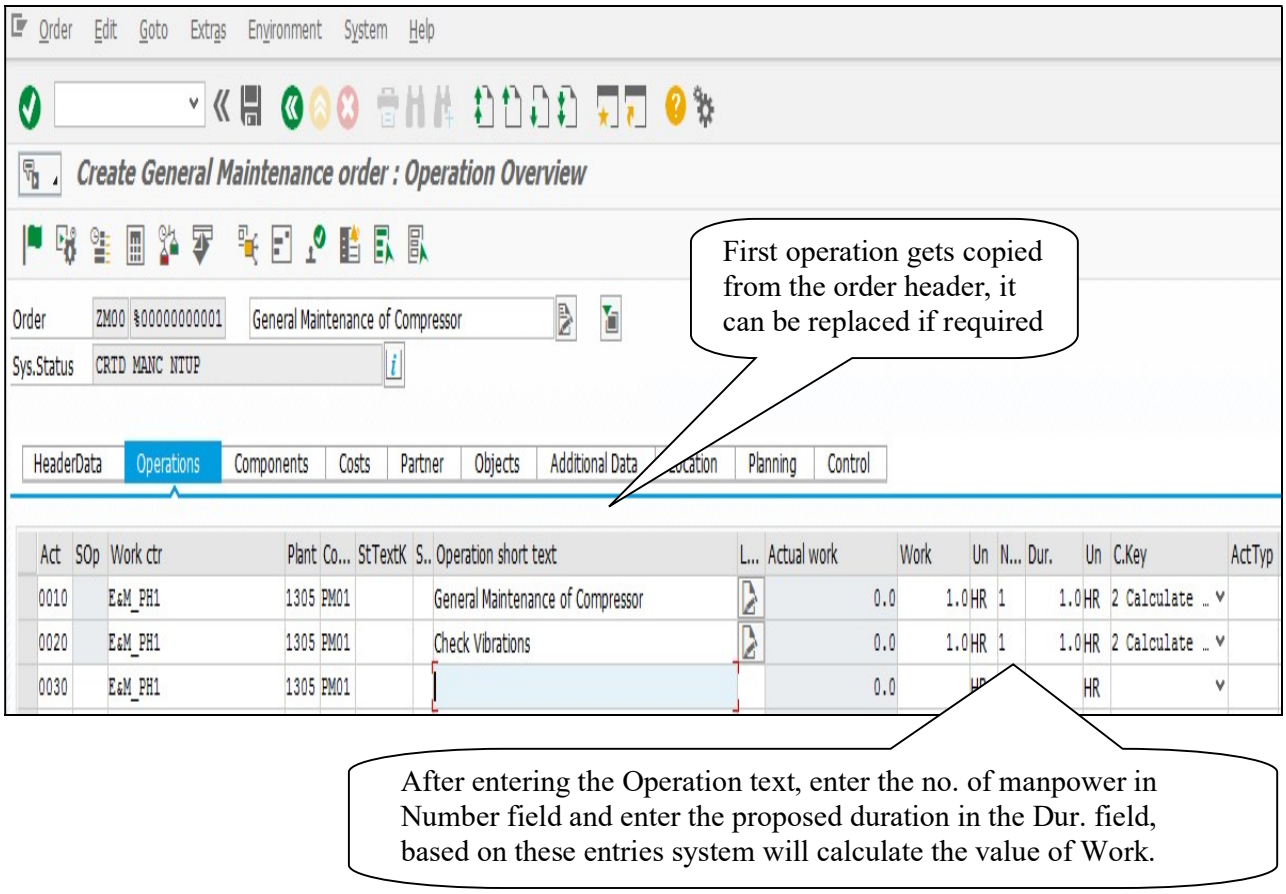


3.4 RESOURCE PLANNING IN GENERAL MAINTENANCE ORDER FOR MATERIALS

According to the job planning, assign the operations in the order, which need to be carried out.

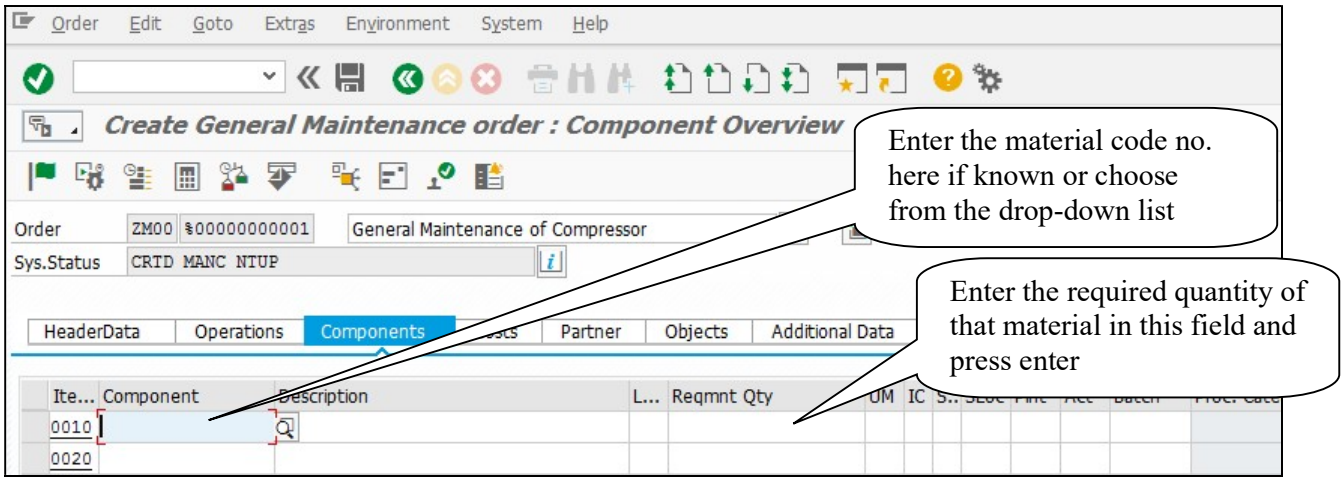
- The first operation in the operations screen gets copied from the order header description as default by the system as shown above. It can be replaced with some other operation text as required.
- If any Task list is available to carry out the required job then operations of that Task list can also be copied directly to the order using menu function: Extras > Task list selection > To reference object/ General task lists.

Go to Operations tab page by clicking on

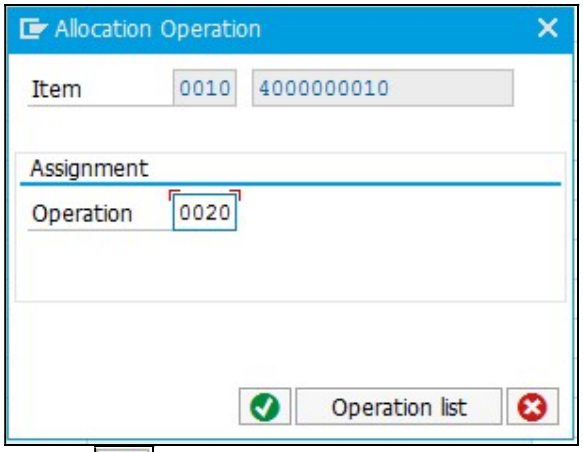


Control Key	Description
PM01	For Internal operations
PM03	For external services (operations to be performed by contractor)
WCM	Work Clearance Management (For operation pertaining to Permit for work)

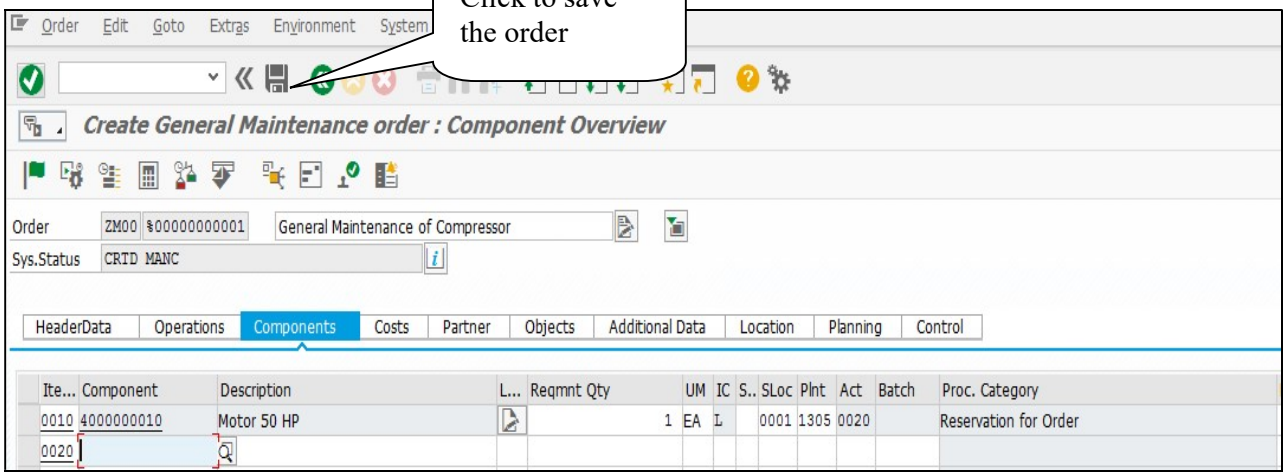
If some material is required for any of the operations, then go to the components screen by clicking on the components tab Components



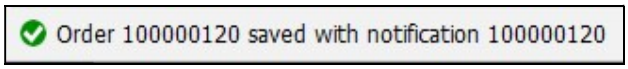
Enter the material code no. if known or select the material from the drop-down help, and enter the required quantity as per the requirement. Then press ENTER; now system will ask you for which operation you want to assign this material as shown below, either enter the operation number or click on Operation list button and select the desired operation.



click on



Click Save button in the standard toolbar at top of the screen to save the Order.

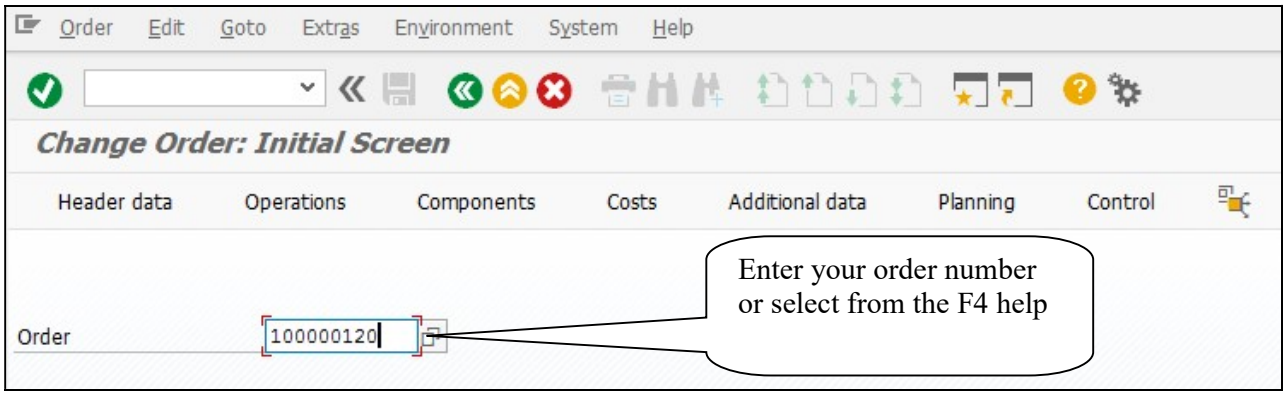


System will give a message in the message bar that your order saved as shown above.

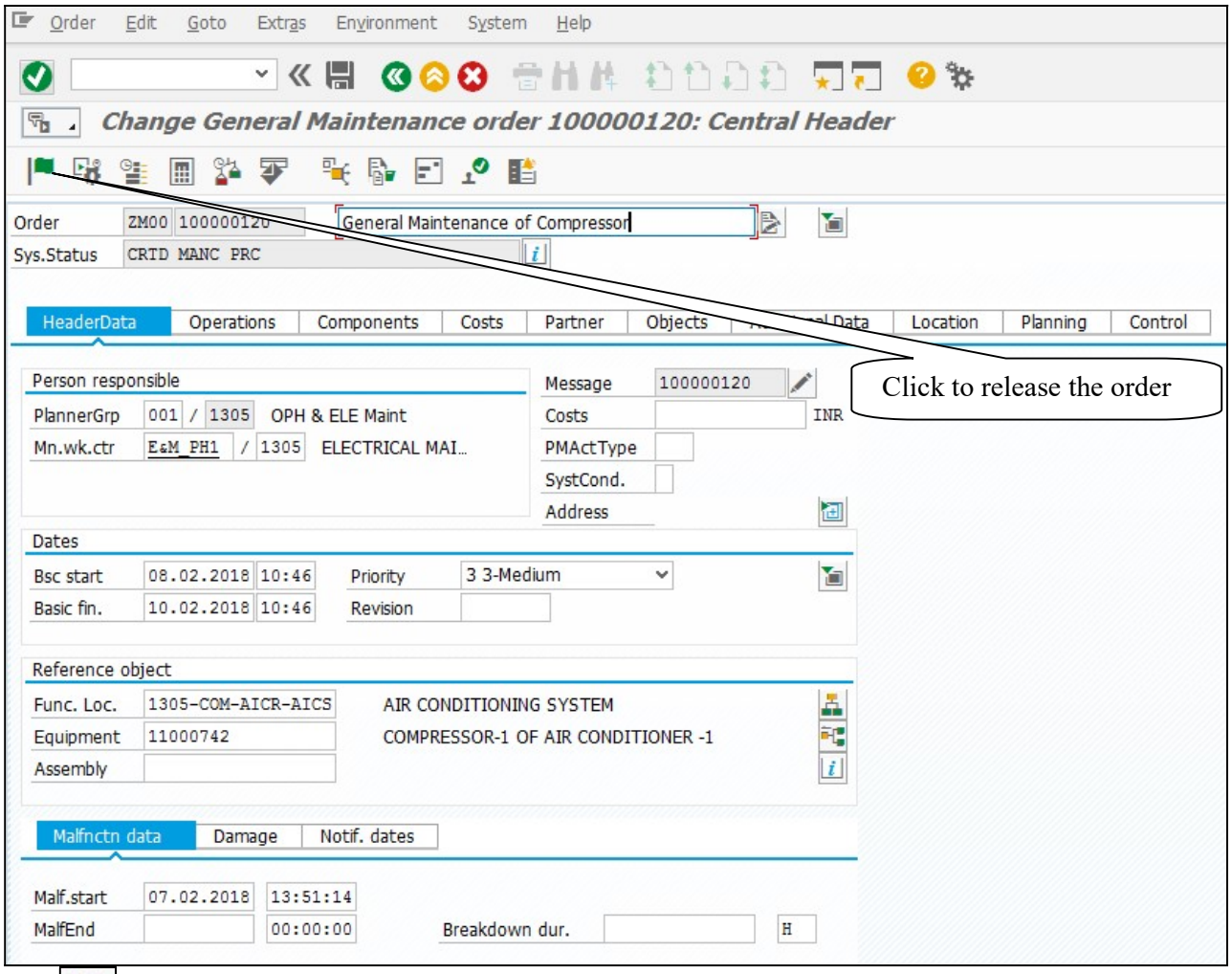
3.5 RELEASE OF GENERAL MAINTENANCE ORDER BY MAINT. DEPARTMENT

- Maintenance order needs to be released by authorised maintenance person, because only after the order release, one can withdraw materials from store against the Material Reservation no. generated by system for any stock material assigned in the order, so that work can be started at site.
- Secondly if any external services are also assigned in the order, then system generates Purchase Requisition (for services from existing Contract) or service Purchase requisition (for new service requirement in absence of Contract) at the time of order release.

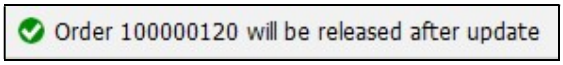
Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Order → Change
Transaction Code	IW32



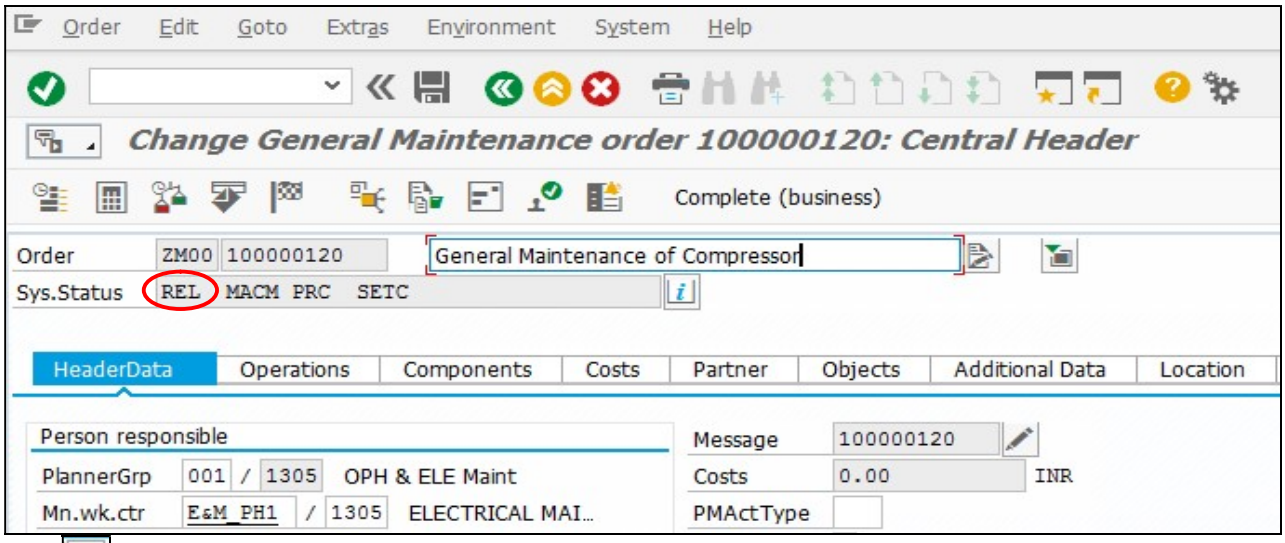
Press “Enter” key or select “Enter” icon . Order header screen will open.



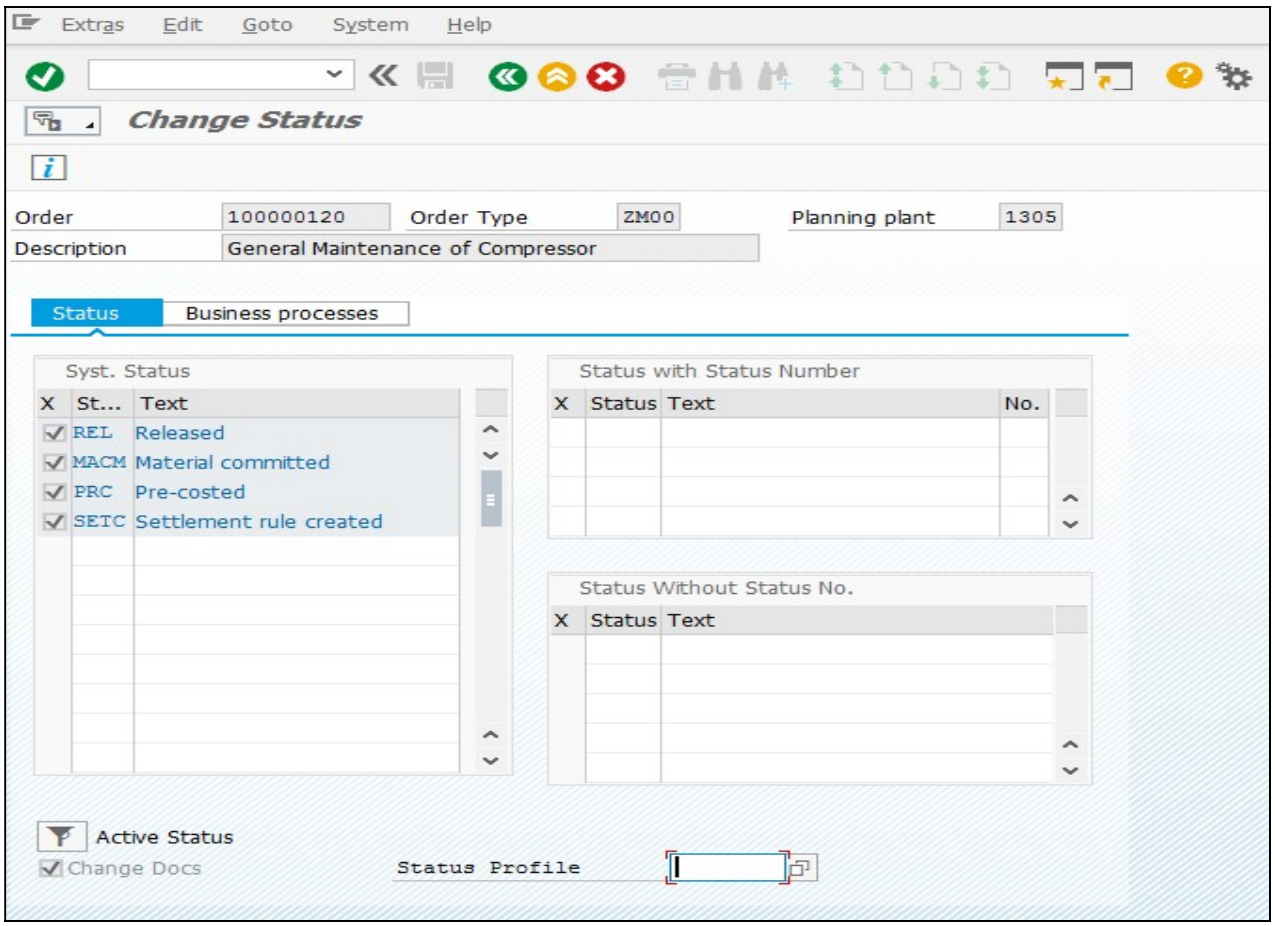
Click button at application toolbar at top to release the order.

You will get system message 

and the order gets REL status by replacing CRTD, as shown below.

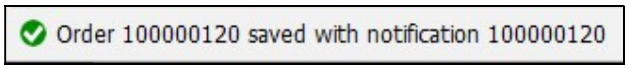


Click button to check the system status on order, shown below:



Materials cannot be withdrawn from stores for the order unless it is released and has got the status REL. Always check before going to the store to draw the material that order has got released or not.

Click Save button in the standard toolbar at top of the screen to save the Order.



System will give a message in the message bar that your order saved as shown above.

3.6 MATERIAL WITHDRAWAL FOR THE WORK ORDER

If any spares are required before executing the actual work and stock of which is available in the store, then maintenance department will first draw that material from the store.

When the order will be released system will automatically check the availability of material (If assigned in the order) in the store and generate a Reservation no. for that material(s), against which that material can be drawn from the store. To get that reservation no., open Component tab of your order and note the Reservation number.

- For drawing material from store, Material Requisition slip needs to be printed first as defined in the Materials management (MM) module procedure of UJVNL
  (Please refer relevant user manual of MM module.)
- Now the maintenance person will go to store with the printed Material Requisition Slip (if required and if defined in MM module process), duly signed by authorized person from his Dep't and draw the material.

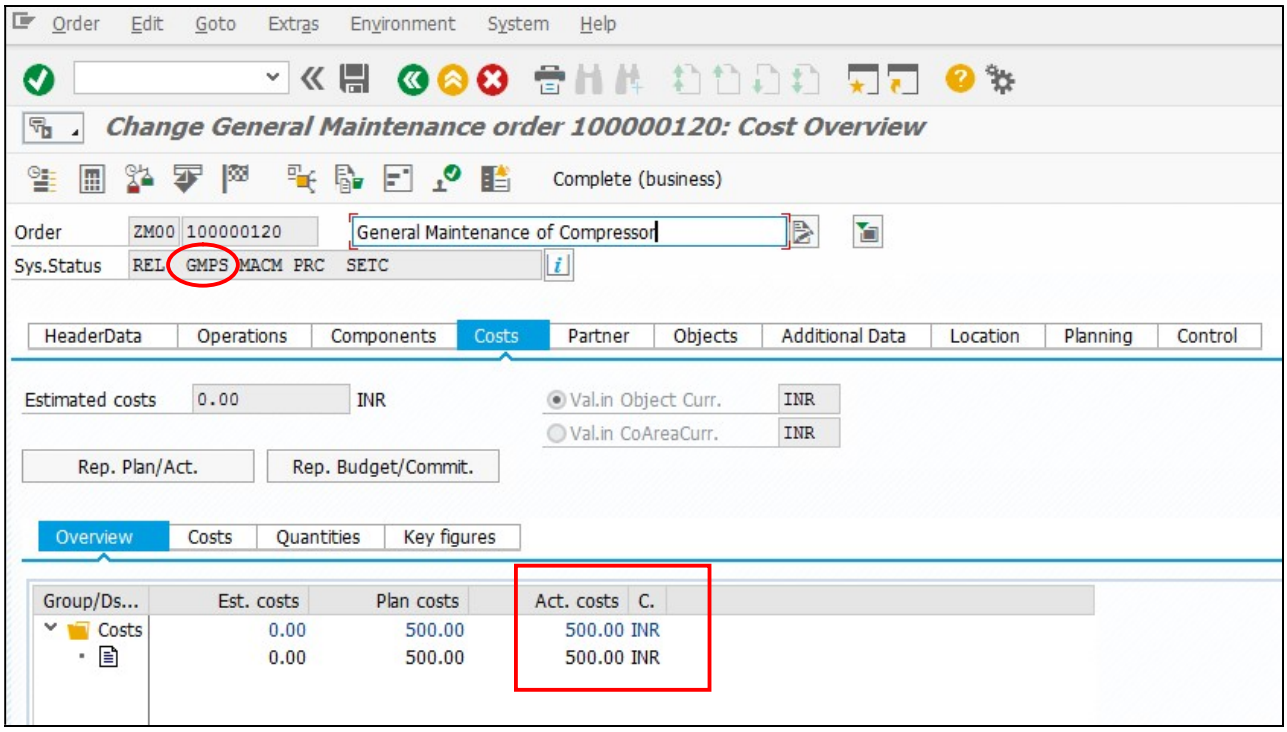
3.7 ISSUE OF MATERIALS FROM THE STORE BY MM DEPT.

If any materials have been assigned to any operations in the order, with stock available in store then store person will issue that materials against the order with reference to the reservation no. generated for the order.

- The maintenance person will go to store for picking the materials against order no./Reservation number
- Store person will run goods movement transaction in SAP MM module, enter the Reservation no./Order no. & execute the goods issue in the system. This will result in posting of Material document with following system message

- Then store person will physically issue all the materials to the maintenance person.

When the material gets issued from the store against Maintenance order, the order gets a new status GMPS (Goods movement posted) as shown below. The Actual cost of Materials is also updated in the Costs tab as shown below.



3.8 EXECUTION OF WORK AT SITE BY INTERNAL MANPOWER

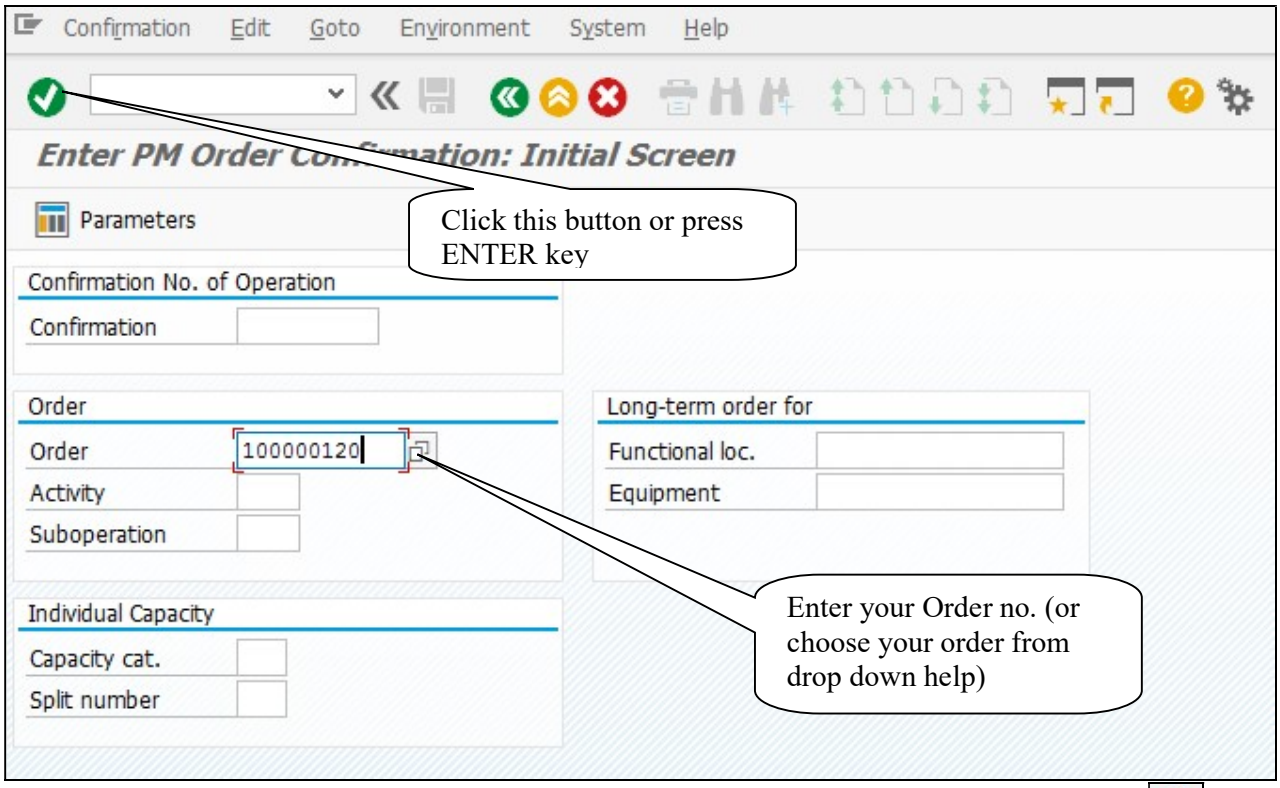
The internal manpower can execute the work at site now as per order operations, since following functions are performed.

- Required Permit(s) approved and issued
- Work order is released
- Withdrawal of required materials as planned in the order

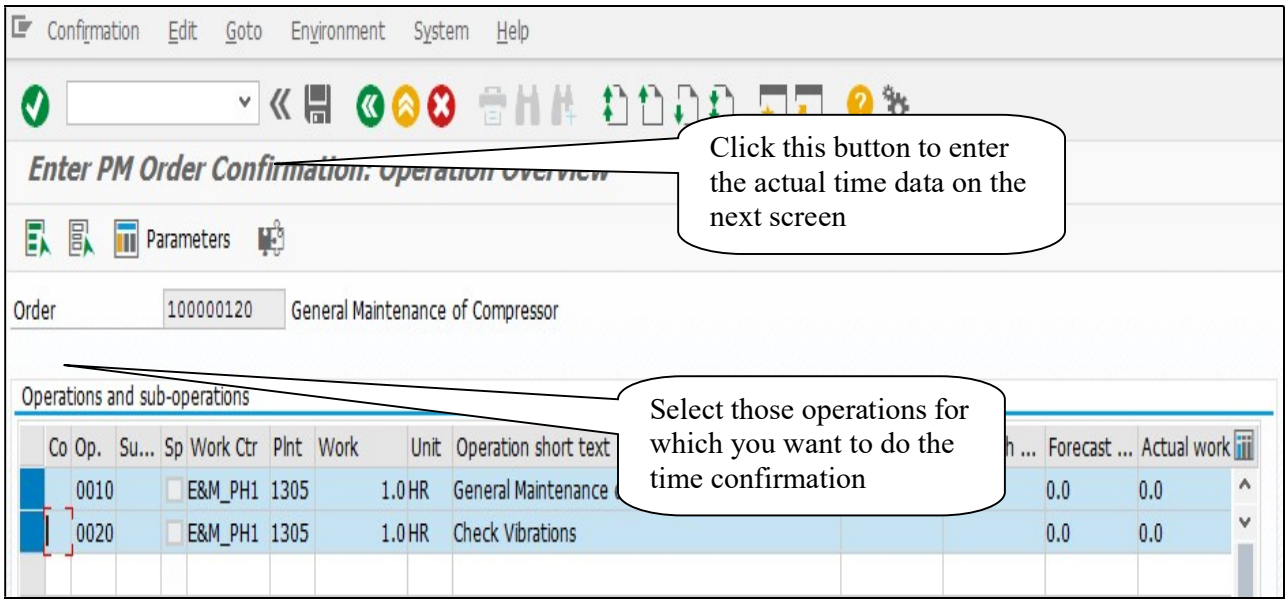
3.9 TIME CONFIRMATION OF ORDER OPERATIONS BY MAINT. DEP'T

The actual time consumption for each operation of work order will be known only after executing the work at site. Then time confirmation of work order operations (internal) can be entered in the system to record that how much time was taken for each operation. This will provide accuracy of planning by comparing planned work time in order and actual time, as confirmed.

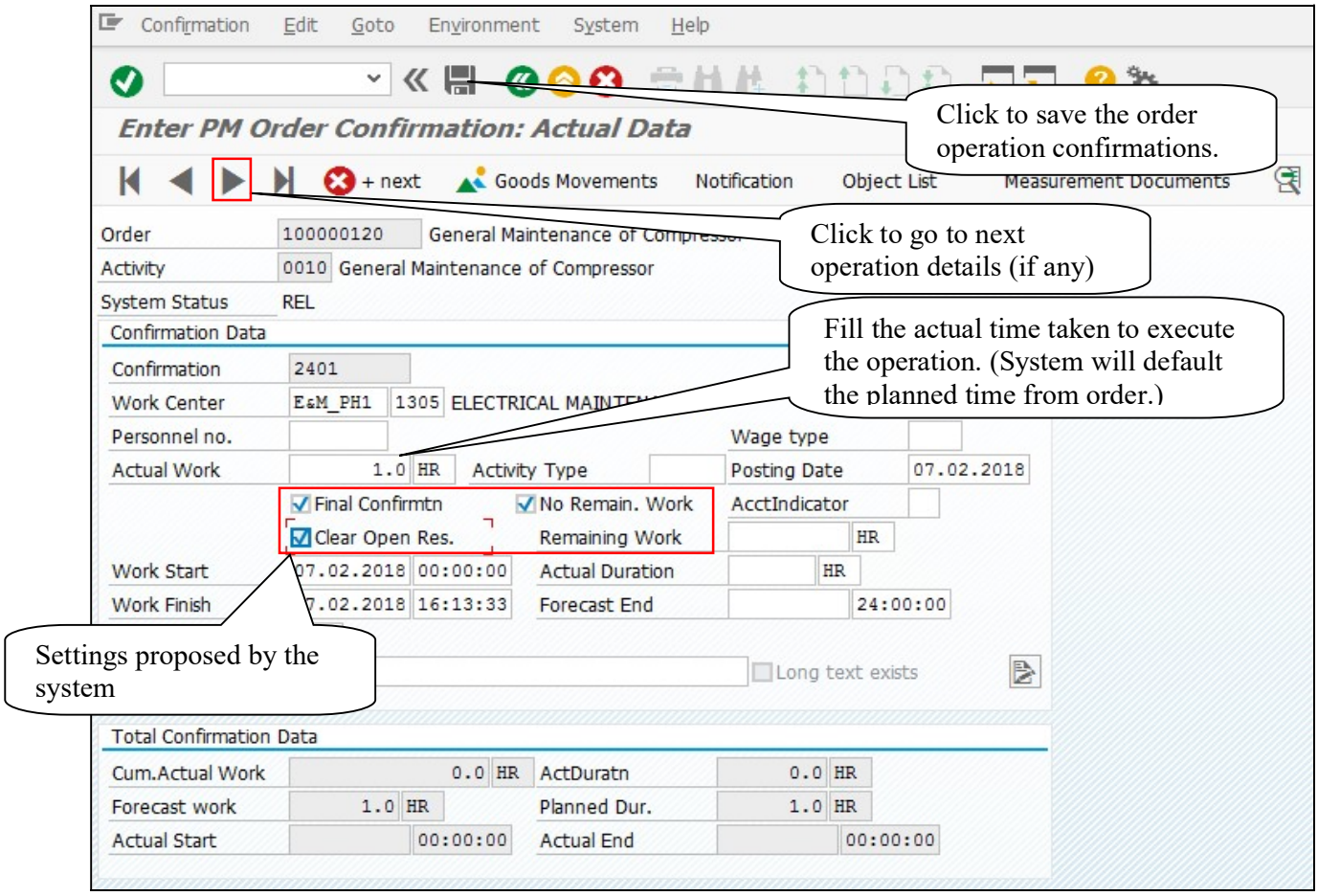
Menu Path	SAP Menu → Logistics → Plant Maintenance → Maintenance Processing → Completion Confirmation → Entry → Individual time confirmation
Transaction Code	IW41



On the initial screen, enter the order no. as shown above. Press "Enter" key or click on "Enter" icon . Enter PM Order Confirmation: Operation Overview screen will open.



You can do the time confirmation only for internal operations (with Control key PM01) and not for external operations (with Control key PM03). Confirmation of operation for obtaining permit (with Control key WCM) is also not required.

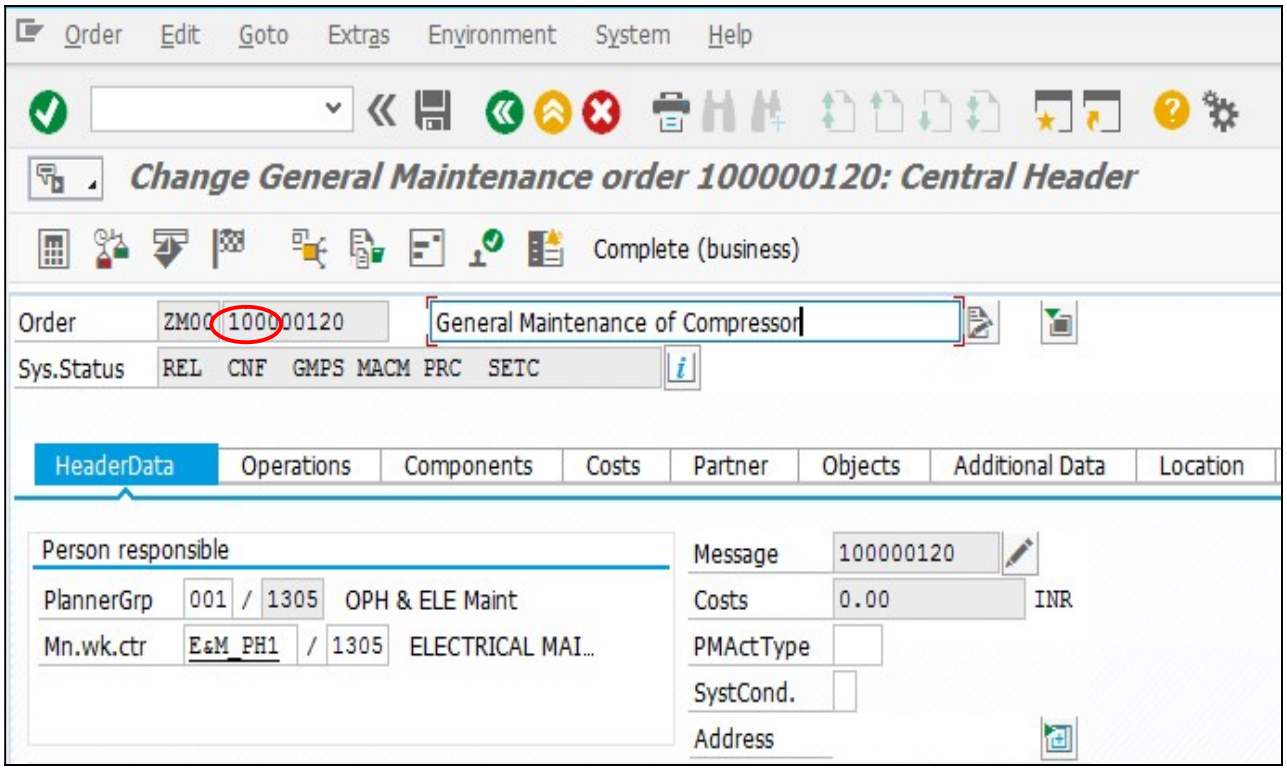


Click button to go to the detail screen of next selected operation, if any. Enter the actual time details of next operation in the next screen. Repeat this until you reach the last operation.

Click Save button to save the confirmation.

System will give a message in the message bar that your confirmations saved as shown above. This says that operations have been confirmed for the order.

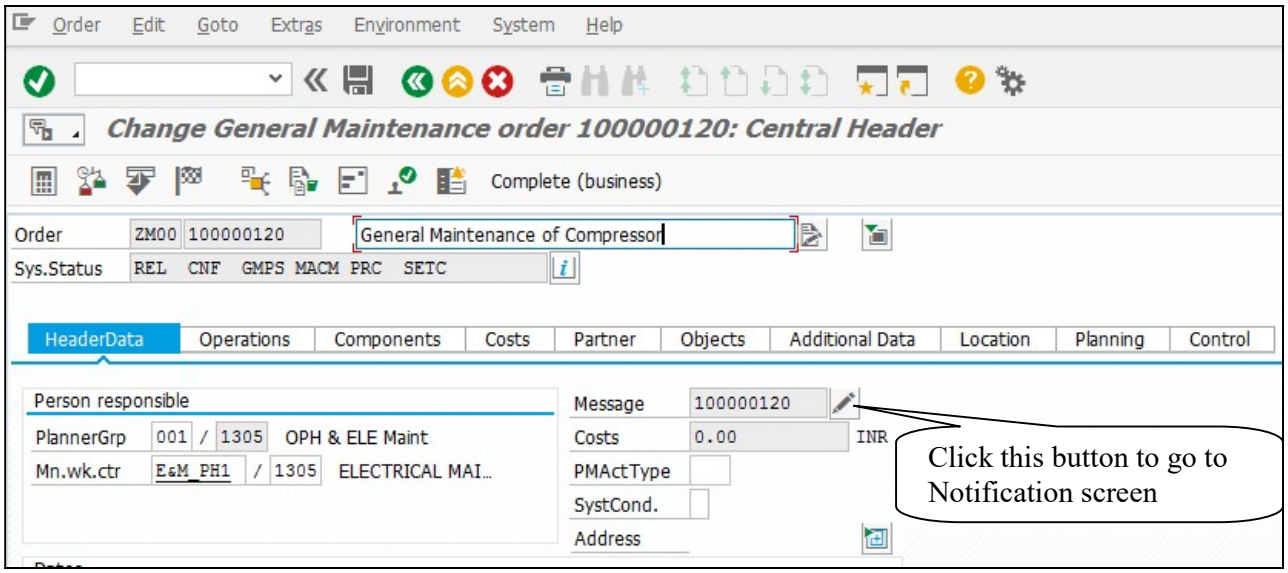
After all the confirmable operations of Order are confirmed, the order gets status CNF (confirmed) as shown below.



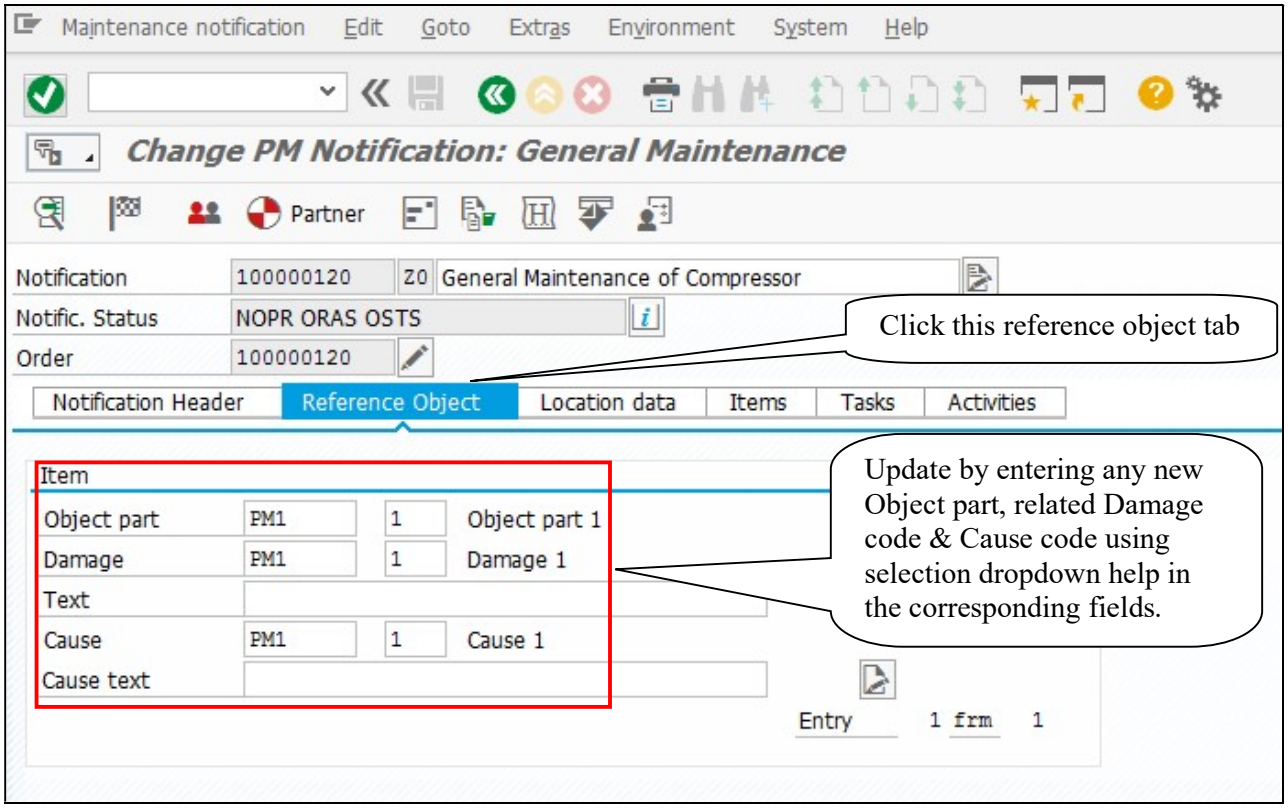
3.10 NOTIFICATION: TECHNICAL COMPLETION – BY MAINTENANCE DEP'T

After all the work pertaining to the Maintenance order is completed, the technical findings, e.g. Damage (defect), Cause, Tasks and As-Found, need to be furnished in the Notification for technical history recording which can be analyzed later for any decision making about the equipment.

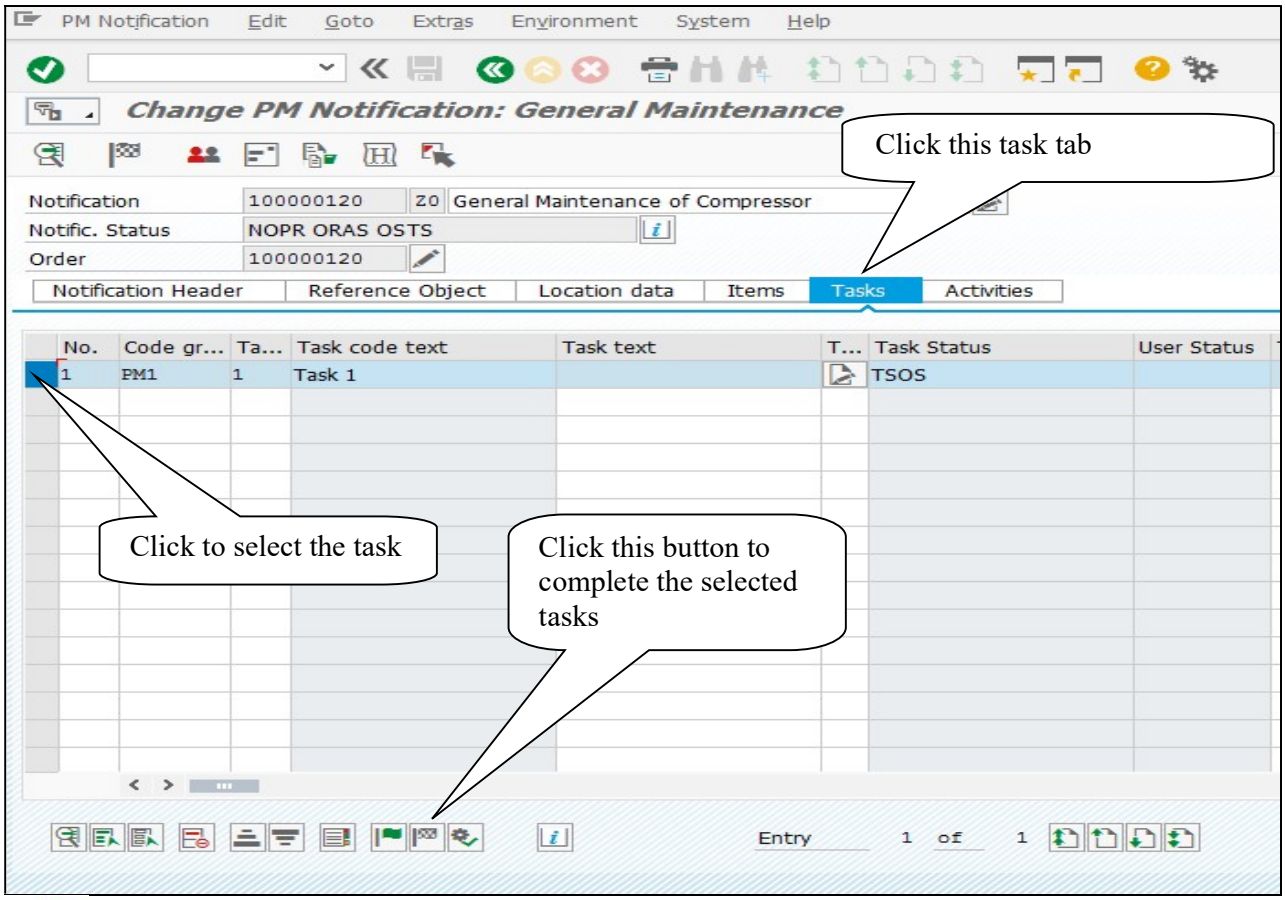
From Change Maintenance order header screen, navigate to Notification screen by clicking button besides the linked Notification no. as shown below.



On the Change Notification screen, go to Items tab to maintain the technical findings. Update the Object part and Damage in the Items page, if any, by selecting its code from the dropdown help.



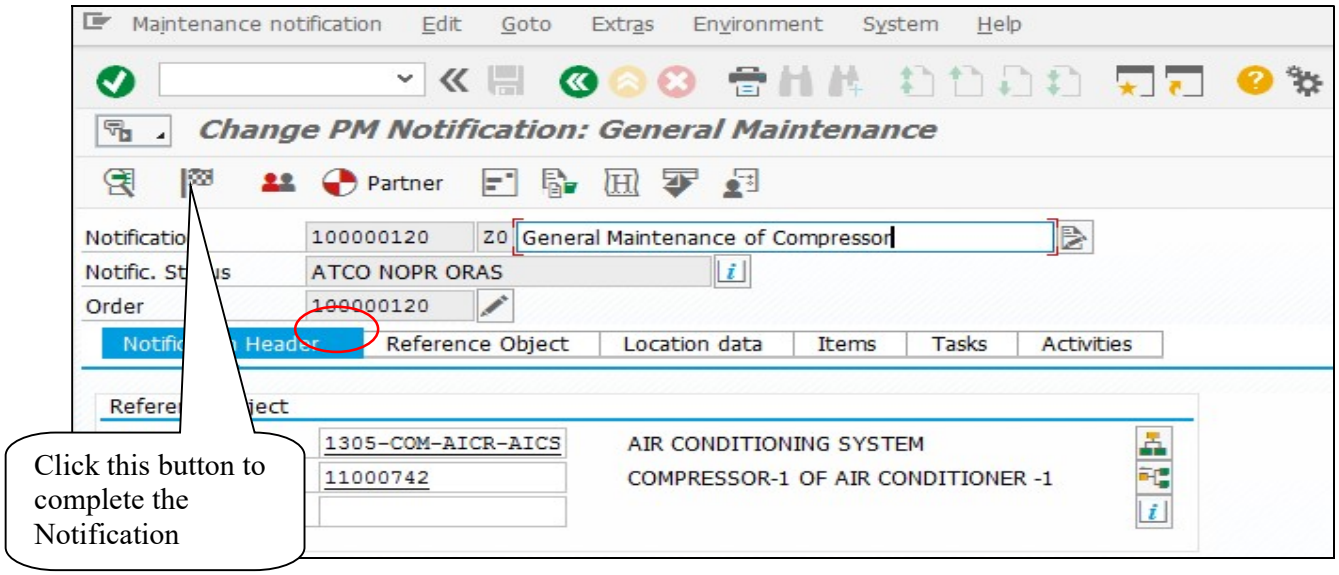
Now go to Tasks tab



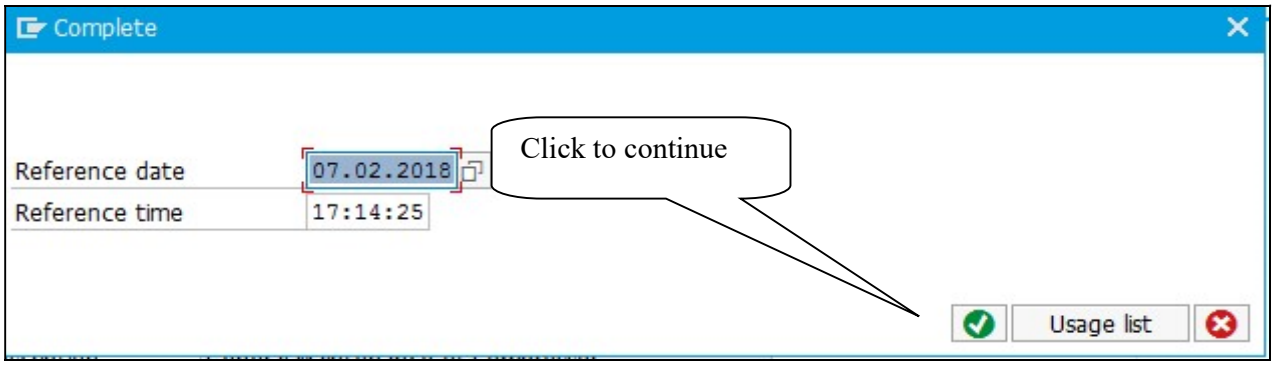
The Task status sets to TSCO (Task completed) and replaces previous status TSOS (Task Outstanding), when the Task is completed.

Until and unless all the entered Tasks in the notification have the status TSCO, system will not allow you to complete the notification. System will give a status check error at completion that Notification status OSTS (Outstanding tasks exist) is active, so before completing the notification always complete all the Tasks first.

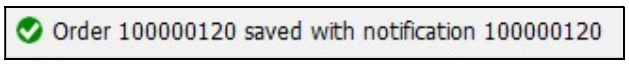
Finally complete the notification by using the button in application toolbar at top of the screen.



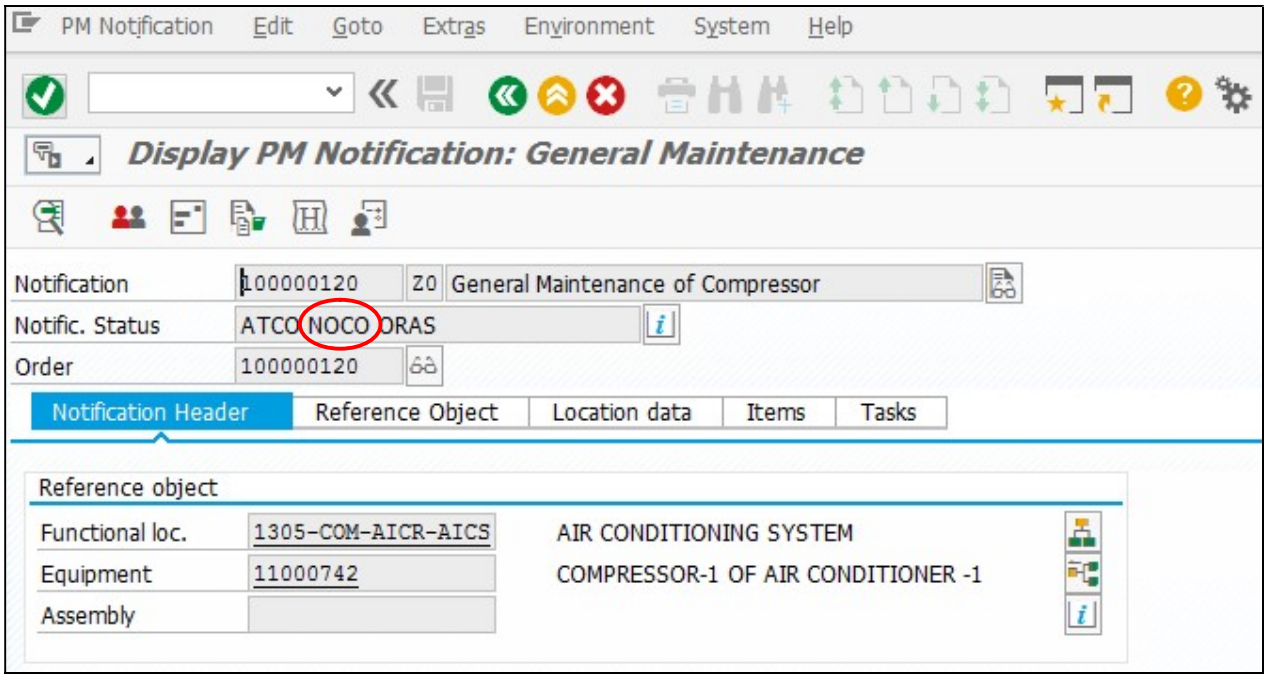
After notification completion flag is clicked system asks the reference date and time, as shown below. If you want to change that time or date you can change it otherwise system will take today's date and time as default.



Click button and Notification will be saved by the system with message:



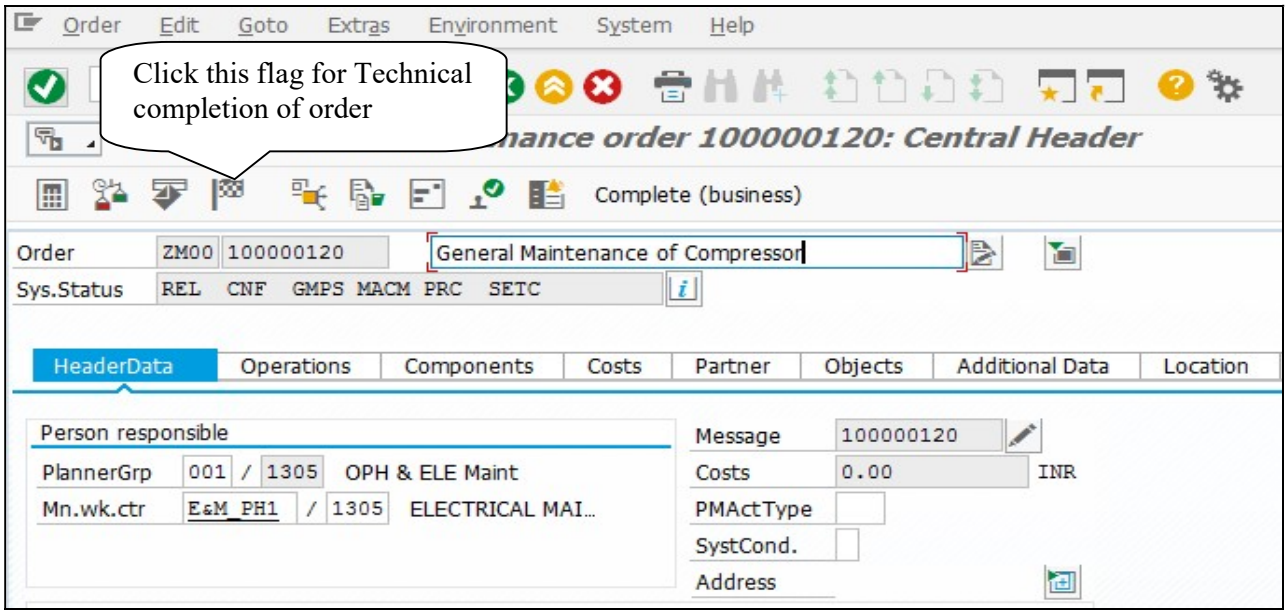
After completion, the Notification gets status NOCO (Notification completed) by replacing previous status NOPR (Notification in process) as shown below. The Notification and all its field becomes grey (display mode) and cannot be edited since after Notification completion, no changes are allowed in the notification.



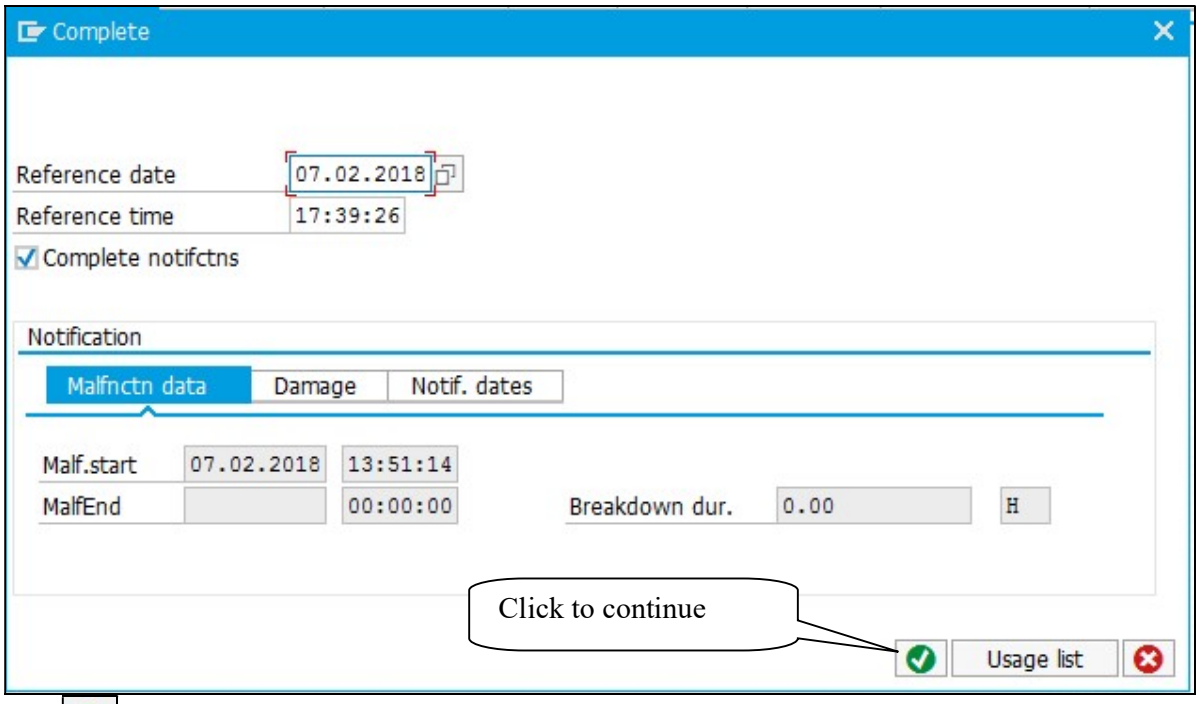
3.11 MAINTENANCE ORDER: TECHNICAL COMPLETION – BY MAINT. DEP'T

After maintaining the technical findings in notification for history and completing the Notification, Maintenance Dep't will technically complete the order.

For technical completion, open the order in change mode as described above

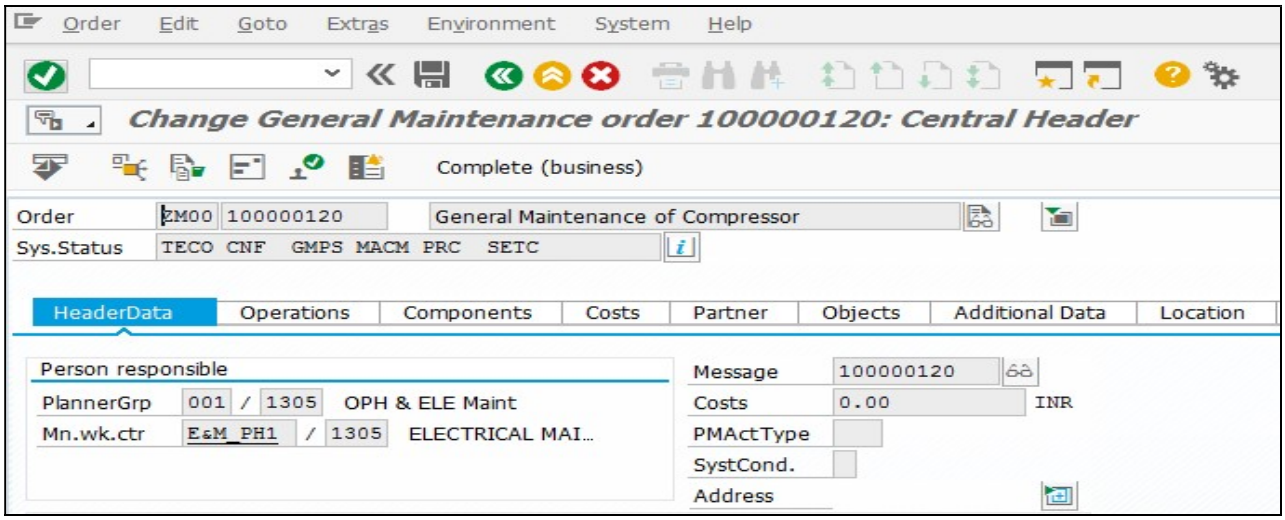


After order completion flag is clicked system gives a pop-up screen asking the reference date and time, as shown below. If you want to change that time or date you can change it otherwise system will take today's date and time as default.



Click button and Order will be saved by the system with message:

Order will get new status TECO (Technically completed) by replacing previous status REL (Released) as shown below. This means that order is technically complete now. The Order and all its field becomes grey (display mode) and cannot be edited since after Order completion, no changes are allowed in the order except actual cost updating by other processes e.g. vendor payment for external services consumed, by Finance and Order closing (business completion).



Now the order is technically complete in all respects from maintenance side.

3.12 COST SETTLEMENT OF THE ORDER – BY FINANCE DEP'T (AT MONTH END)

- The actual cost of resources consumption (materials and external services) for Maintenance order is loaded on order itself as and when resources are consumed during order processing cycle.
- At the month end finance dep't settles the actual cost of all the maintenance orders which are technically completed to the respective cost centres.
- After the settlement, the actual cost of the order is transferred to the cost centre, and actual cost of the order will become zero.
- After this activity of order cost settlement, the order is Business completed and gets the status CLSD (closed).

4 GLOSSARY

Company code	SAP term for legal entity for which a complete self-contained set of accounts can be drawn up for external statutory reporting
Plant	In Logistics, a plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning. A place where materials are produced, or goods and services are provided.
Maintenance Plant	Maintenance plant is a plant in which the technical objects of the company are installed and where maintenance is done.
Maint. Planning Plant	A plant in which maintenance tasks are planned and prepared. The planning responsibility for a maintenance plant is defined using a planning plant. Maintenance plant are assigned to planning plants. Planning is performed for the Maintenance plants in the planning plants.
Plant Section	Plant section is subdivision of Maintenance Plant into different process / functional areas.
Planner Group	Planner Group is a group of persons responsible for maintenance planning in a Planning plant.
Functional Location	The business object functional location is an organizational unit within Logistics, that structures the maintenance objects of a company according to functional, process-related or spatial criteria. A functional location represents the place at which a maintenance task is to be performed.
Equipment	An equipment is known as an individual object in the system that is maintained independently. Equipment can be installed at different functional locations. You can create an individual equipment in an organization based on the object-based structure of a technical system.
Work Center	An organizational unit that defines where and when an operation must be performed. The work center has an available capacity. The activities performed at or by the work center are evaluated by charge rates, which are determined by cost centers and activity types. Work centers can be: - Machines - People - Production lines
Task List	It's the set of operations to be performed for the maintenance of a technical object
Object Type	You can assign each piece of equipment and each functional location to a technical object type. This allows pieces of equipment that have the same use, for example, to be combined into groups. You can use this grouping for evaluating your master data or maintenance data.
Catalog Profile	Catalog profile will group distinct characteristics of the notification which will cater the needs of management to analyze the company assets & to ascertain the decisions accordingly. Catalog profiles have sub class of code groups which will group the codes as per their feature.

5 APPENDIX

5.1 T - CODES FOR REOPRTS

T-Code	Description
IW38	PM Order List Change
IW39	PM Order List Display
IW47	Display PM Order Confirmation using Operation List
IW28	PM Notification List Change
IW29	PM Notification List Display
MM60	Materials List
MMBE	Display Material Stock Overview

5.2 T - CODES FOR PM

T-Code	Description
IW21	Create PM Notification
IW22	Change PM Notification
IW23	Display PM Notification
IW31	Create PM Order
IW32	Change PM Order
IW33	Display PM Order
IW34	Create Notification Order
IW41	PM Order Confirmation
IW42	Overall Completion Confirmation
IW43	Display PM Order Confirmation
IW45	Cancel PM Order Confirmation