

ERP - PROJECT

SUGMAYA

END USER DOCUMENT

FOR

PLANT MAINTENANCE

BREAKDOWN MAINTENANCE

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1 DOCUMENT CONTROL

This is a controlled document and will be maintained on UJVNL portal.

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: BREAKDOWN MAINTENANCE

The Breakdown Maintenance process shall consist of the following major activities:

1. Raising of Breakdown Notification with correct priority by operation group to notify the responsible Maintenance department/ main work center.
2. Based on effect on generation, Breakdown notification will be raised using Breakdown Notification (type Z2) and needs to be prioritized by assigning correct priority.
 - Breakdown of emergent nature which directly affects the generation or cause safety threat to man or machine will be given 'E' priority and required to be attended within 24 hours. It would require planning whatsoever at site, hence shall be directly sent to concerned maintenance department/ section by the operation engineer.
 - Breakdowns which are related to equipment, and are indirectly related to generation and do not cause immediate generation loss shall be given priority A. Such jobs are required to be attended within 72 hours (3 days).
 - Breakdowns related to equipment which are not directly or indirectly related to generation but are important otherwise, shall be given priority B. Such jobs are required to be attended in 5 days.
 - Breakdowns jobs which should be attended during Unit shutdown will be given priority S
 - Similarly, breakdown jobs which can be attended whenever there is an opportunity shall be given priority O.
3. The breakdown notification will mostly be raised by operation group but at times it can also be raised by maintenance personnel if required.

Priority	Description	Comments
E	Emergent	To attend in 24 hrs (immediate job)
A	Priority-A	To attend in 72 hrs (3 days)
B	Priority-B	To attend in 7 days
C	Shutdown	To attend in unit shutdown
O	Opportunity	To attend whenever getting opportunity



4. Notification release (Put in process) by maintenance dep't.
5. Creation of Breakdown Maintenance order by maint. dep't if material, external service (contractual job) and permit is needed to carry out the maintenance.
 - Planning of operations (activities)

PM- Master Data

For Internal Circulation Only

- Planning or materials required
 - Planning of manpower required
 - Planning of external service quantity required
6. Applying permit(s) required for work
 7. Release of order by authorized person/supervisor in maintenance dep't
 8. Issuing of permit(s) by Operation dep't or concerned agency
 9. Issue of materials from store.
 10. Execution of work at site by internal manpower and/or external agency.
 11. Work Completion (WOCO) of maintenance order, which denotes permit cancellation request in system.
 12. Return of permit(s) by Maintenance and closing of the same by Operations
 13. Time confirmation of order operations (internal) by maintenance dep't
 14. Entry of technical findings (Damage, cause, tasks etc.) and Malfunction end time in the breakdown notification by maintenance dep't
 15. Completion of tasks in notification and subsequently Notification completion (NOCO)
 16. Technical Completion (TECO) of order.
 17. Month-end settlement of Maintenance order by F&A dep't.

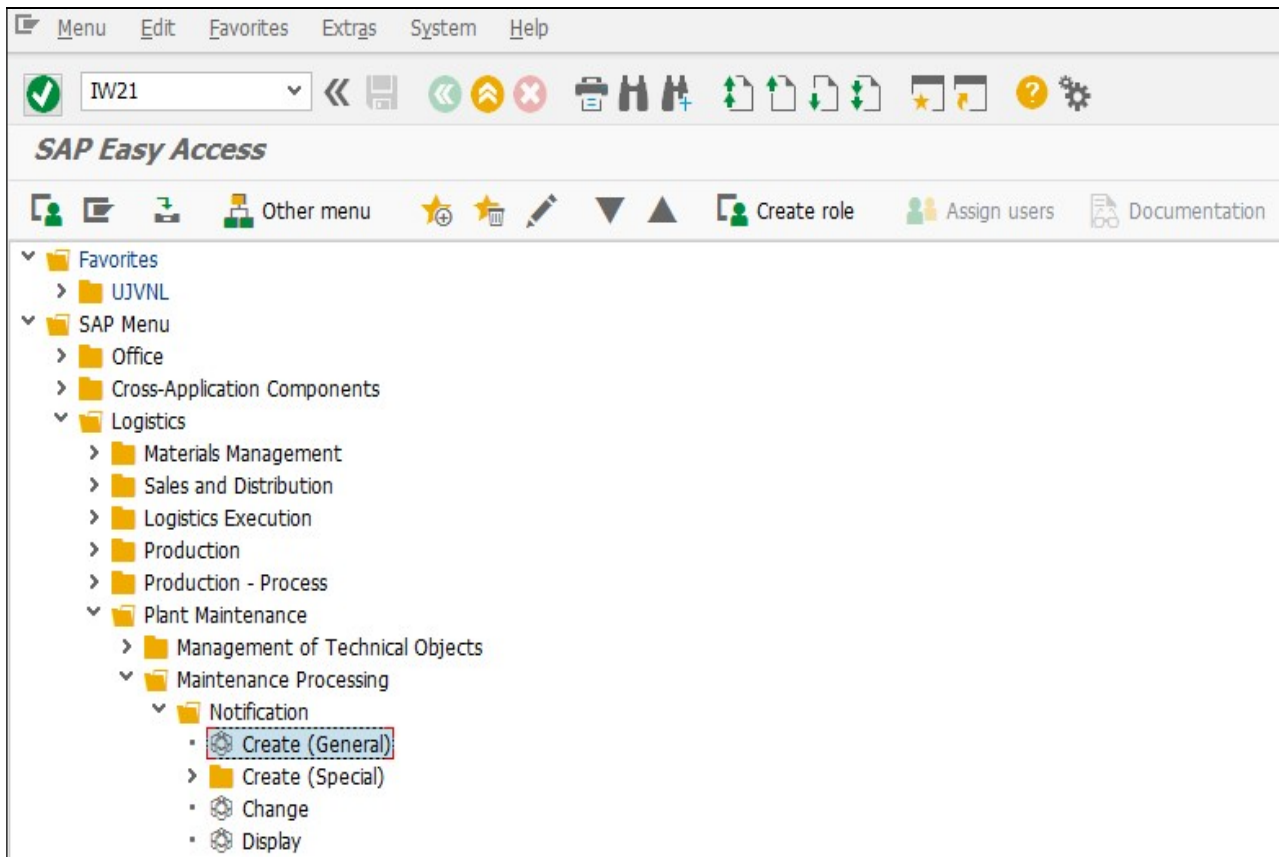
Icons:

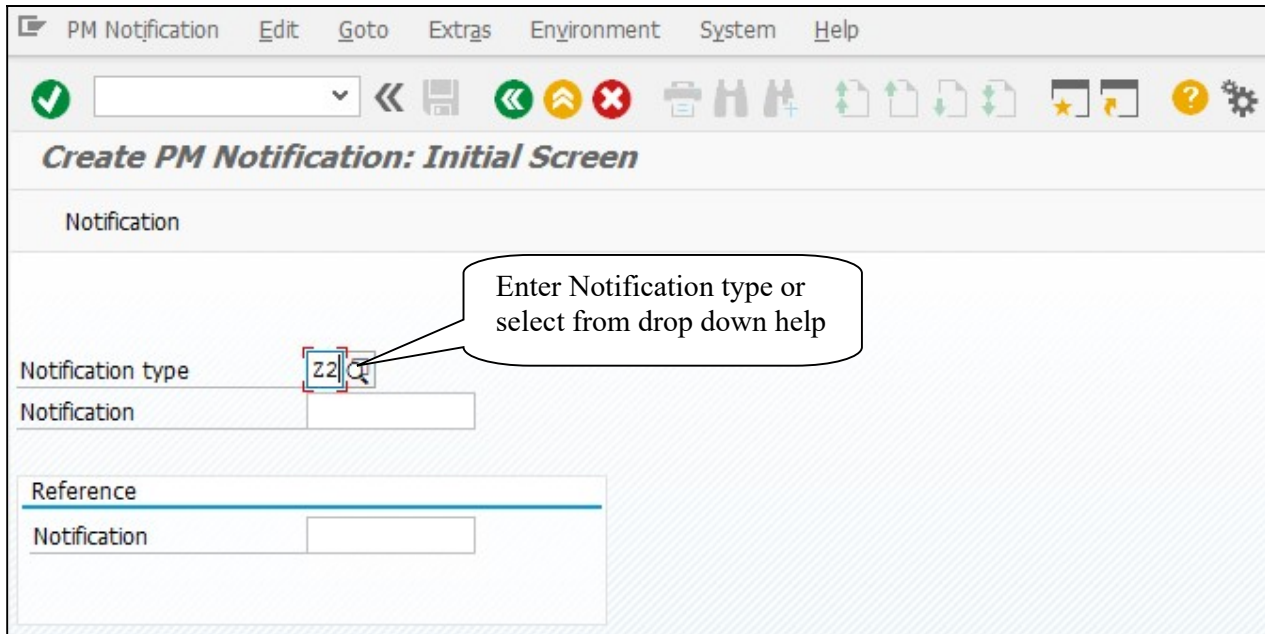
	Caution
	Note

3 CREATE BREAKDOWN NOTIFICATION

A defect has occurred and you create a Breakdown Notification. You enter a brief description of defect, technical object (Functional Location / Equipment) on which defect has occurred, optionally the detail description in subject long text about the 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 Z2 is for Breakdown 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

✓ [Dropdown] [Icons]

Create PM Notification: Breakdown Notif.

[Icons] Partner [Icons]

Notification \$000000000001 22 Breakdown Maintenance of Generator [Icon]

Notific. Status OSNO [Icon]

Order [Icon]

Notification Header Reference Object Malfunction Data Location data Items Tasks Activities

Reference object

Functional loc. 1305 SHARDA POWER HOUSE LOHIAHEAD [Icon]

Equipment [Icon]

Assembly [Icon]

Subject

Coding [Icon]

Description Breakdown Maintenance of Generator

Subject Long Text

08.02.2018 12:34:09 INDIA CHAKRAVARTHY DG (CHAKRAVARTHY)

Check Generator Earth Fault

Responsibilities

Planner group [Icon] / 1305


Main WorkCtr [Icon] / [Icon]









Reported by [Icon]


Notif.date 08.02.2018 12:33:41

















Enter concise description of notification

Enter Top Functional location for plant (plant code)








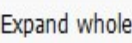


Enter the top Functional Location of plant & click the button  at the right side of the Functional location field. The structure list of the top functional location will appear, expand the list and reach to your required equipment, on which the breakdown to be reported, as shown below.

 List
  Edit
  Goto
  Extras
  Environment
  Settings
  System
  Help



Create PM Notification - General: Structure List

Functional Location 1305 Valid From 08.02.2018
 Description SHARDA POWER HOUSE LOHIAHEAD

- 1305 SHARDA POWER HOUSE LOHIAHEAD
 - 1305-COM SHARDA POWER HOUSE LOHIAHEAD COMMON
 - 1305-COM-AICR AIR CONDITIONING ROOM
 - 1305-COM-AICR-AICD AC DUCT
 - 1305-COM-AICR-AICS AIR CONDITIONING SYSTEM
 - 10000417 COMPRESSOR-1 OF AIR CONDITIONER
 - 10000418 COMPRESSOR-2 OF AIR CONDITIONER
 - 10000419 COMPRESSOR-1 OF AIR CONDITIONER
 - 10000420 COMPRESSOR-2 OF AIR CONDITIONER -2
 - 10000421 BLOWER OF AIR CONDITIONER-1
 - 10000422 BLOWER OF AIR CONDITIONER-2
 - 10000423 OUTDOOR UNIT-1 OF AIR CONDITIONER -1
 - 10000424 OUTDOOR UNIT-2 OF AIR CONDITIONER -1
 - 10000425 OUTDOOR UNIT-1 OF AIR CONDITIONER -2
 - 11000742 COMPRESSOR-1 OF AIR CONDITIONER -1
 - 4000000028 MH FLOOD LIGHT COMPLETE FITTING OF TWO N L 10 EA
 - 1305-COM-AICS AIR COMPRESSOR SYSTEM
 - 10000187 HP AIR COMPRESSOR MOTOR 1ST, 25HP
 - 10000188 HP AIR COMPRESSOR MOTOR 2, 25HP
 - 11000096 HP COMPRESSOR NO-01
 - 11000097 HP COMPRESSOR NO-01
 - 1305-COM-AICS-AICP AIR COMPRESSOR PANEL
 - 10000161 HP AIR COMPRESSOR LCC 20MEU38GH001
 - 1305-COM-AISY DHARASU POWER HOUSE AIR INJECTION SYSTEM
 - 1305-COM-BATR BATTERY ROOM
 - 1305-COM-BATR-BAC1 BATTERY CHARGER 1
 - 10000143 220V 250AH BATTERY CHARGER1 20BTL00GH501

Double click to select in Notification

Select the equipment and double click it. The exact functional location and equipment will appear in the Reference Object fields of Notification header as shown below.



Check the **Breakdown** indicator if Equipment is out of service, as shown below.

☐ Maintenance notification [Edit](#) [Goto](#) [Extras](#) [Environment](#) [System](#) [Help](#)

Create PM Notification: Breakdown Notif.

Notification Breakdown Maintenance of Generator

Notific. Status

Order

[Notification Header](#) [Reference Object](#) [Malfunction Data](#) [Location data](#) [Items](#) [Tasks](#) [Activities](#)

Reference object

Functional loc.	<input type="text" value="1305-COM-AICR-AICS"/>	AIR CONDITIONING SYSTEM	
Equipment	<input type="text" value="11000742"/>	COMPRESSOR-1 OF AIR CONDITIONER -1	
Assembly	<input type="text"/>		

Subject

Coding

Description

Subject Long Text

Check Generator earth Fault

< > < >

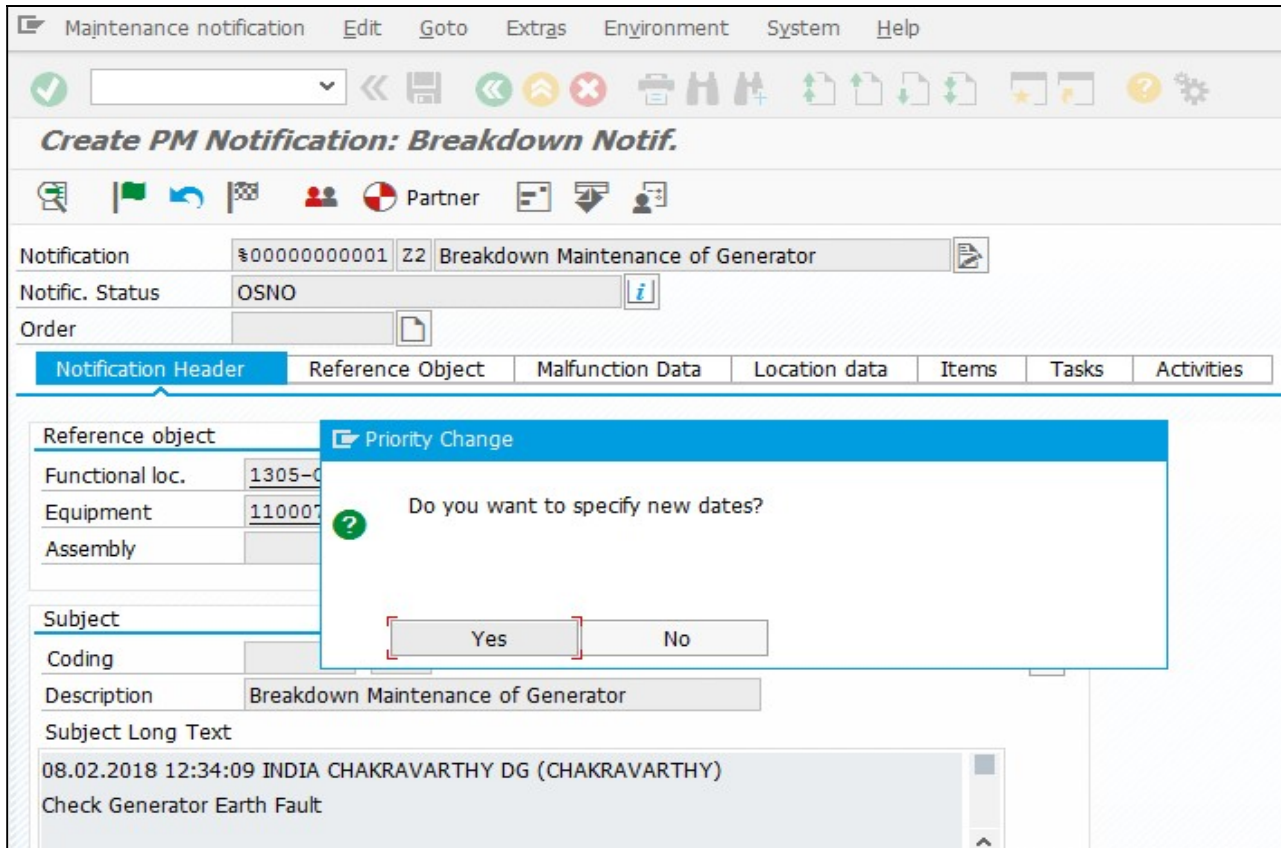
Responsibilities

Planner group	<input type="text" value="001"/> / <input type="text" value="1305"/>	OPH & ELE Maint
Main WorkCtr	<input type="text" value="E&M_PH1"/> / <input type="text" value="1305"/>	ELECTRICAL MAINTENANCE-1
Reported by	<input type="text"/>	<input type="text" value="08.02.2018"/> <input type="text" value="12:24:23"/>

Start/End Dates

Required Start	<input type="text"/>	<input type="text" value="00:00:00"/>	Priority <input type="text" value="Priority B : 5 days"/>
Required End	<input type="text" value="11.02.2018"/>	<input type="text" value="12:36:37"/>	<input checked="" type="checkbox"/> Breakdown

Press ENTER key.



Maintenance notification Edit Goto Extras Environment System Help

Create PM Notification: Breakdown Notif.

Notification \$00000000001 Z2 Breakdown Maintenance of Generator

Notific. Status OSNO

Order

Notification Header Reference Object Malfunction Data Location data Items Tasks Activities

Reference object

Functional loc. 1305-C

Equipment 11000

Assembly

Subject

Coding

Description Breakdown Maintenance of Generator

Subject Long Text

08.02.2018 12:34:09 INDIA CHAKRAVARTHY DG (CHAKRAVARTHY)


Check Generator Earth Fault

Priority Change

Do you want to specify new dates?

Yes No

Click Yes to specify dates (Required Start and End dates) as per the priority definition, e.g. here it will be 3 days for selected priority A.

Since Breakdown indicator was selected, system will ask to confirm the Malfunction start date and time (defaulted as current date/time). Click  to accept.

Maintenance notification Edit Goto Extras Environment System Help

Create PM Notification: Breakdown Notif.

Notification \$000000000001 Z2 Breakdown Maintenance of Generator

Notific. Status OSNO

Order

Notification Header Reference Object Malfunction Data Location data Items Tasks Activities

Malfuncn.Start

Reference

Functional Malfunction start 08.02.2018

Equipment

Assembly Start Malfn (T) 12:33:41

Subject

Coding


Description

Subject Long Text

Check Generator Earth Fault



The Malfunction Start date/ time can be edited if the Notification is being raised at later point of time. The Malfunction start and End date/ time is used to calculate Breakdown duration and hence MTBR & MTTR.

Notification status can be seen by clicking  button at top of the notification screen below the notification description.

Extras Edit Goto System Help

Change Status

Notification \$000000000001 Notifictn type Z2

Description Breakdown Maintenance of Generator

Notific. Status OSNO

Status Business processes

Syst. Status

X	St...	Text
<input checked="" type="checkbox"/>	OSNO	Outstanding notification

Status with Status Number

X	Status	Text	No.
---	--------	------	-----


Status Without Status No.

X	Status	Text
---	--------	------

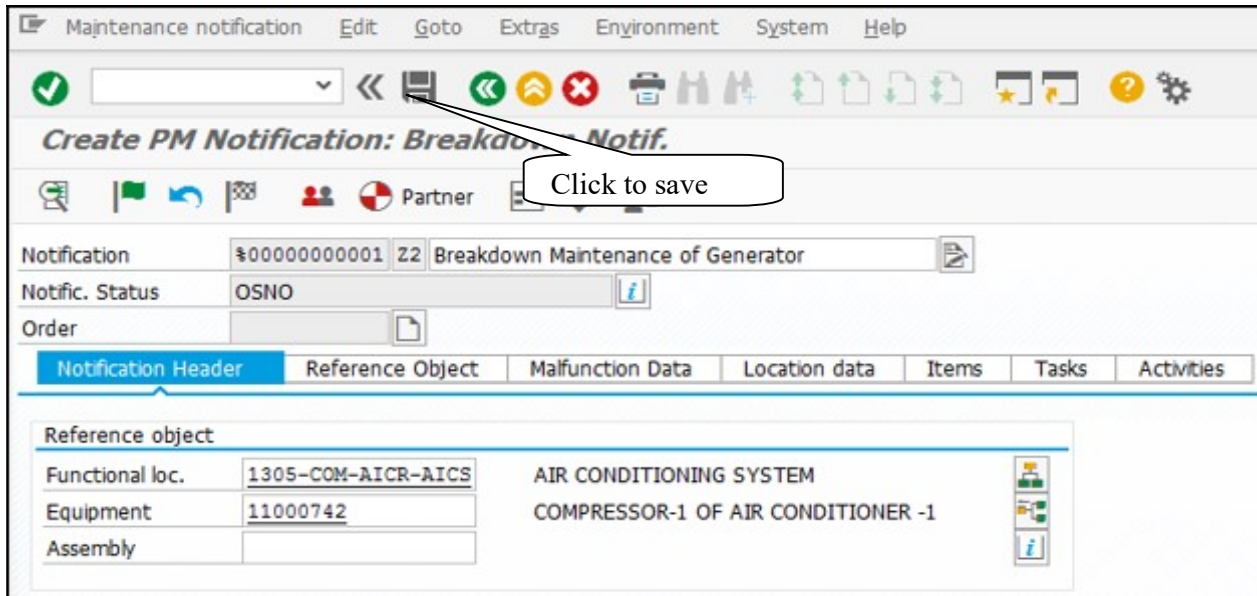
Active Status


Change Docs

System Status Window

Go back by clicking  button.

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.
9	Breakdown	Indicator for breakdown	Check the indicator if equipment is out of service. Used for technical reporting.
10	Malfunction Start	Malfunction (out of service) Start date & time	Defaults to current date and time. Is editable if reporting the BD later.
11	Malfunction End	Malfunction (Out of service) end date & time	NA at this stage.
12	Req Start	Date & time at which processing of the notification is to start.	Enter date and time as per your requirement.
13	Priority	The key in this field indicates the Notification job priority	Select code from drop down list
14	Req End Date	Date & time on which the processing of the notification is to be completed.	Enter date and time as per your requirement.



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

 Notification 200000080 saved

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

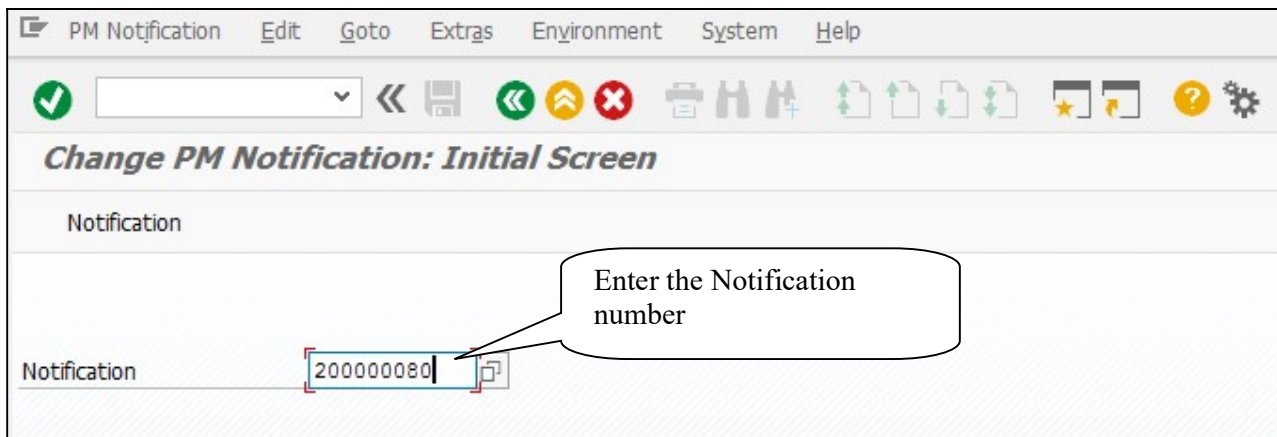


The Breakdown notification cannot be saved until breakdown indicator is marked.

4 RECEIPT OF BREAKDOWN 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/edit 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

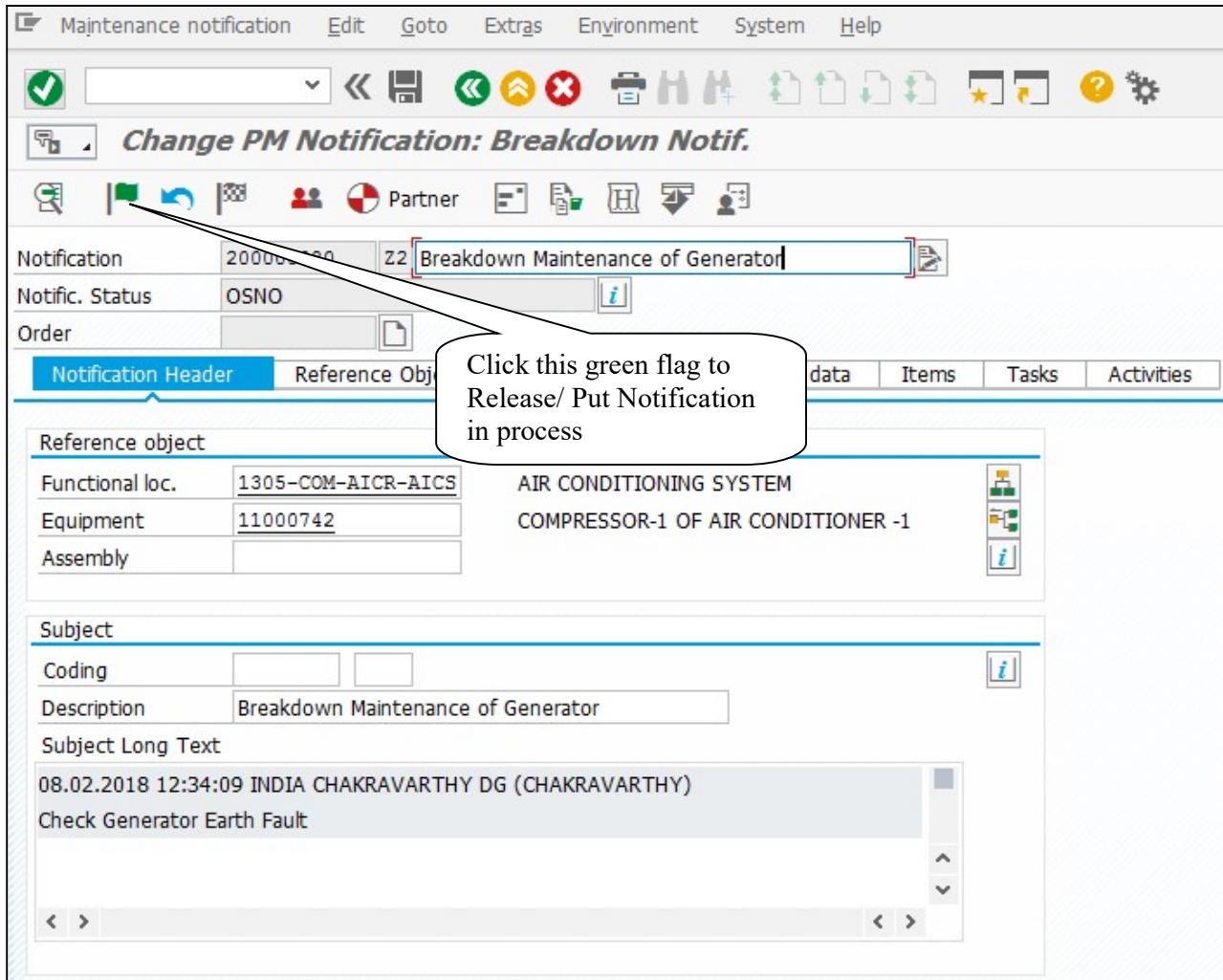


Enter the following data in the Input screen to open the notification in Change mode

Step No	Field Name	Description	User Action and Values
1	Notification	Number of the notification to be changed / updated	Enter the notification number 200000080

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

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).



Maintenance notification Edit Goto Extras Environment System Help

Change PM Notification: Breakdown Notif.

Notification 200000080 Z2 Breakdown Maintenance of Generator

Notific. Status OSNO

Order

Notification Header Reference Obj

Reference object

Functional loc. 1305-COM-AICR-AICS AIR CONDITIONING SYSTEM

Equipment 11000742 COMPRESSOR-1 OF AIR CONDITIONER -1

Assembly

Subject


Coding

Description Breakdown Maintenance of Generator

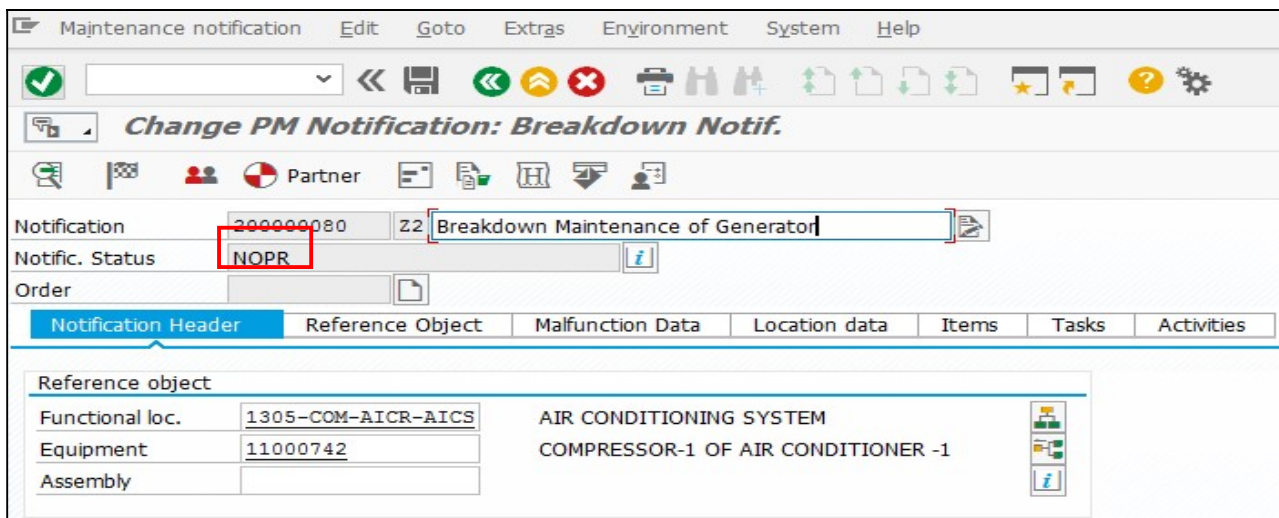
Subject Long Text

08.02.2018 12:34:09 INDIA CHAKRAVARTHY DG (CHAKRAVARTHY)

Check Generator Earth Fault

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.



Maintenance notification Edit Goto Extras Environment System Help

Change PM Notification: Breakdown Notif.

Notification 200000080 Z2 Breakdown Maintenance of Generator

Notific. Status NOPR

Order

Notification Header Reference Object Malfunction Data Location data Items Tasks Activities

Reference object

Functional loc. 1305-COM-AICR-AICS AIR CONDITIONING SYSTEM

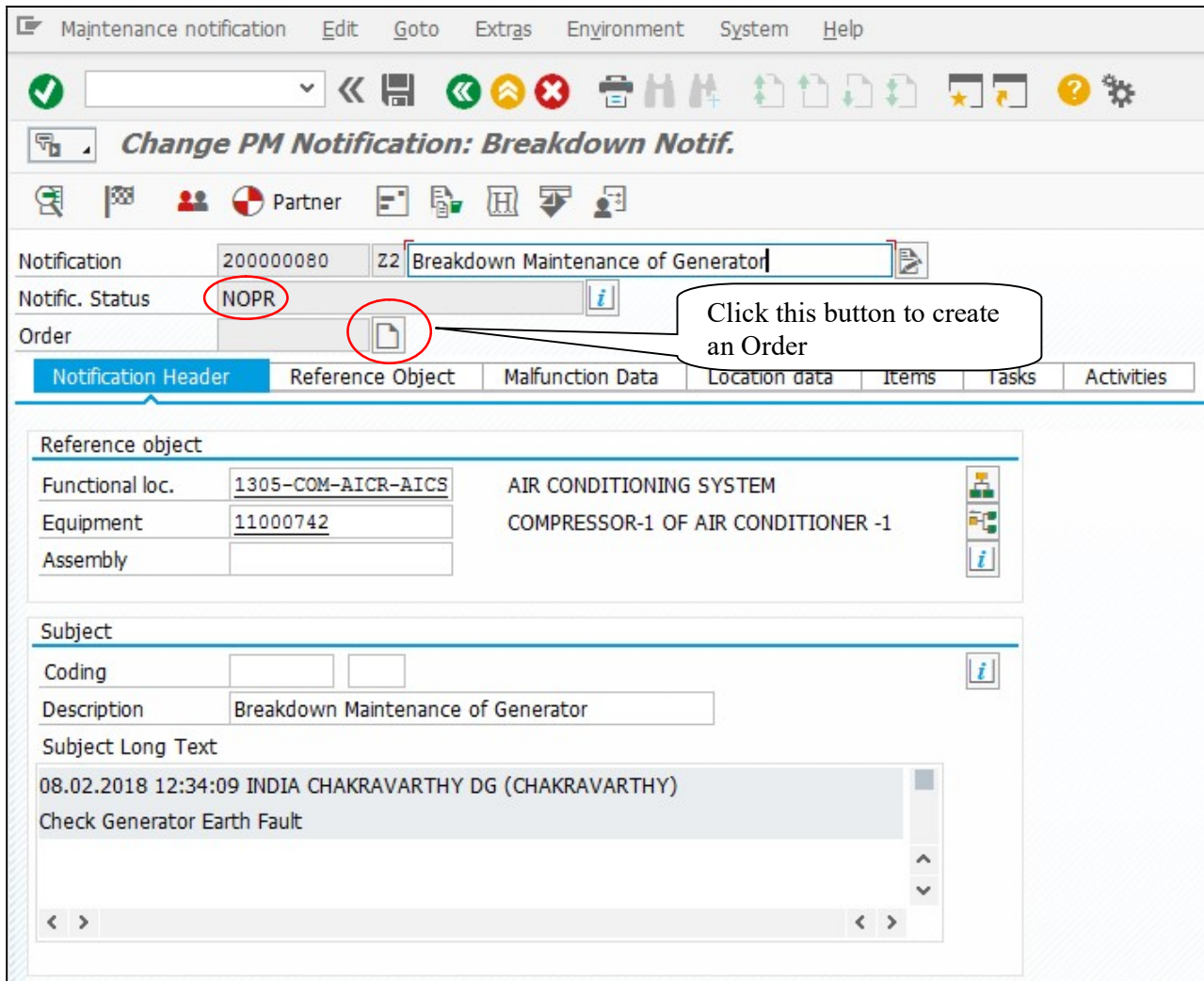
Equipment 11000742 COMPRESSOR-1 OF AIR CONDITIONER -1

Assembly

PM- Master Data

For Internal Circulation Only

5 CREATION OF BREAKDOWN ORDER BY MAINTENANCE




Maintenance notification Edit Goto Extras Environment System Help

Change PM Notification: Breakdown Notif.

Notification 200000080 Z2 Breakdown Maintenance of Generator

Notific. Status **NOPR**

Order 

Click this button to create an Order

Notification Header Reference Object Malfunction Data Location data Items Tasks Activities

Reference object

Functional loc.	1305-COM-AICR-AICS	AIR CONDITIONING SYSTEM
Equipment	11000742	COMPRESSOR-1 OF AIR CONDITIONER -1
Assembly		

Subject

Coding



Description Breakdown Maintenance of Generator

Subject Long Text

08.02.2018 12:34:09 INDIA CHAKRAVARTHY DG (CHAKRAVARTHY)
Check Generator Earth Fault

After releasing the Notification, if permit, material or external service (contractual job) 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 

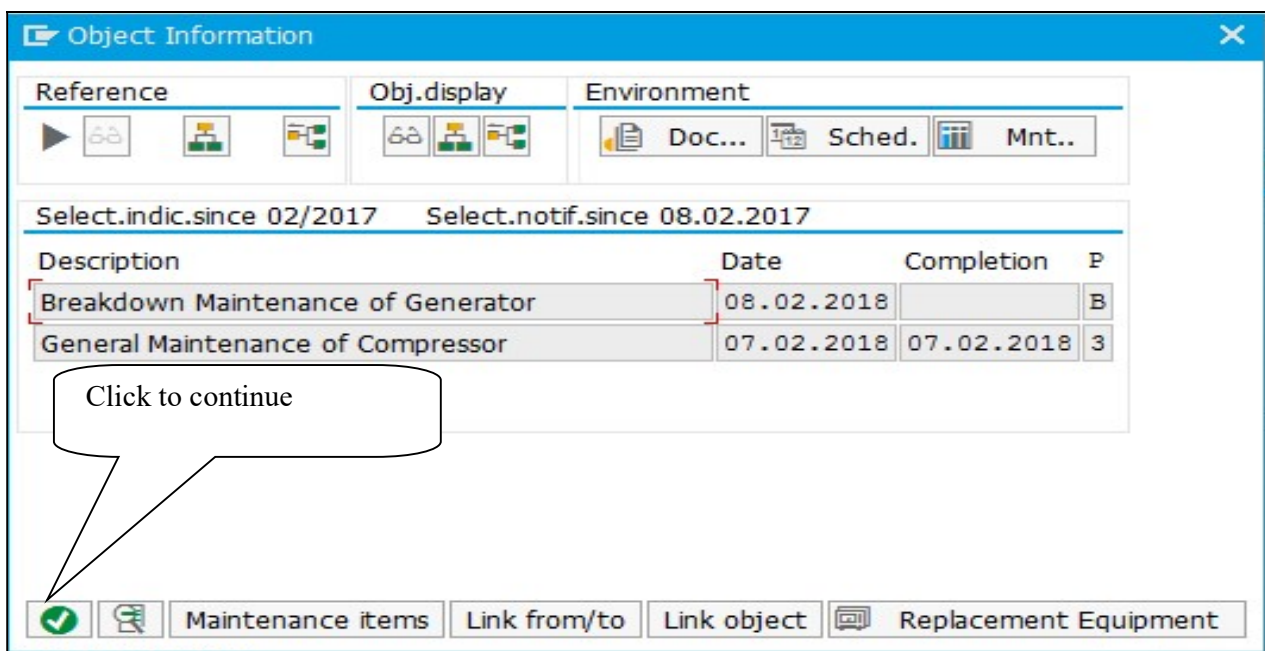


Click to continue

Order Type	ZM02	
Planning plant	1305	
Business Area		
Main work center	E&M_PH1 / 1305	ELECTRICAL MAINTENANCE-1

✓ ✗


Object Information window (for Equipment) will open for viewing as shown below.



Click to continue

Reference	Obj.display	Environment
		Doc... Sched. Mnt..
Select.indic.since 02/2017 Select.notif.since 08.02.2017		
Description	Date	Completion P
Breakdown Maintenance of Generator	08.02.2018	
General Maintenance of Compressor	07.02.2018	07.02.2018 3

✓ Maintenance items Link from/to Link object Replacement Equipment

Press "Enter" key or select "Enter" icon . Create Breakdown 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.

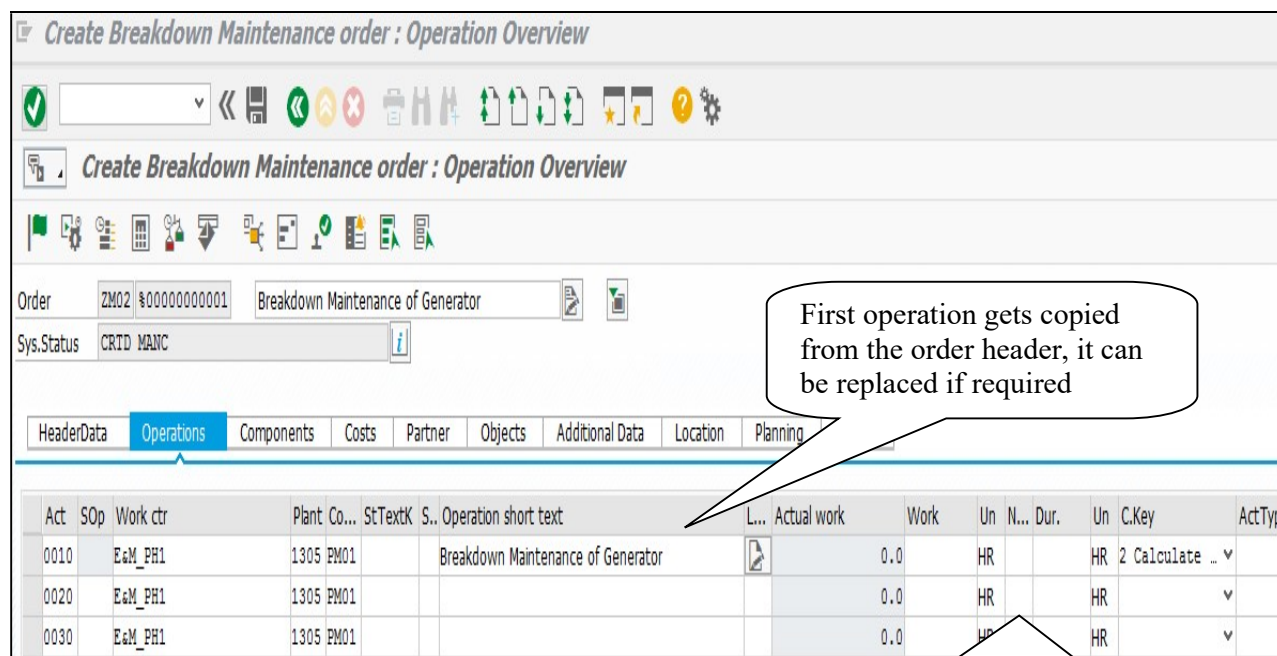
Order Edit Goto Extras Environment System Help									
<div> </div>									
<div> Create Breakdown Maintenance order : Central Header </div>									
<div> </div>									
Order	ZM02	000000000001	Breakdown Maintenance of Generator						
Sys.Status	CRID MANC								
<div> <div>HeaderData</div> <div>Operations</div> <div>Components</div> <div>Costs</div> <div>Partner</div> <div>Objects</div> <div>Additional Data</div> <div>Location</div> <div>Planning</div> <div>Control</div> </div>									
<div> <div> <div>Person responsible</div> <div> PlannerGrp 001 / 1305 OPH & ELE Maint Mn.wk.ctr E&M_PH1 / 1305 ELECTRICAL MAI... </div> </div> <div> <div>Message</div> <div>200000080</div> </div> <div> <div>Costs</div> <div></div> <div>INR</div> </div> <div> <div>PMActType</div> <div></div> </div> <div> <div>SystCond.</div> <div></div> </div> <div> <div>Address</div> <div></div> </div> </div>									
<div> <div>Dates</div> <div> <div>Bsc start</div> <div>13.02.2018</div> <div>00:00</div> <div>Priority</div> <div>B Priority B : 5 days</div> </div> <div> <div>Basic fin.</div> <div>13.02.2018</div> <div>12:37</div> <div>Revision</div> <div></div> </div> </div>									
<div> <div>Reference object</div> <div> <div>Func. Loc.</div> <div>1305-COM-AICR-AICS</div> <div>AIR CONDITIONING SYSTEM</div> </div> <div> <div>Equipment</div> <div>11000742</div> <div>COMPRESSOR-1 OF AIR CONDITIONER -1</div> </div> <div> <div>Assembly</div> <div></div> </div> </div>									
<div> <div>Malfnctn data</div> <div>Damage</div> <div>Notif. dates</div> </div>									
<div> <div> <div>Malf.start</div> <div>08.02.2018</div> <div>12:33:41</div> </div> <div> <div>MalfEnd</div> <div></div> <div>00:00:00</div> </div> <div> <div><input checked="" type="checkbox"/> Breakdown</div> <div>Breakdown dur.</div> <div></div> <div>H</div> </div> </div>									
<div> <div>First operation</div> <div> <div>Operation</div> <div>Breakdown Maintenance of Generator</div> <div>CckKey 2 Calculate work</div> </div> <div> <div>WkCtr/Plnt</div> <div>E&M_PH1 / 1305</div> <div>Ctrl key</div> <div>PM01</div> <div>Acty Type</div> <div></div> <div><input type="checkbox"/> PRT</div> </div> <div> <div>Work durtn</div> <div></div> <div>HR</div> <div>Number</div> <div></div> <div>Oprtn dur.</div> <div></div> <div>HR</div> <div><input type="checkbox"/> Comp.</div> </div> <div> <div>Person. no</div> <div></div> </div> </div>									

6 RESOURCE PLANNING IN BREAKDOWN ORDER

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 **Operations**



Order: ZM02 \$000000000001 Breakdown Maintenance of Generator

Sys.Status: CRTD MANC

HeaderData | **Operations** | Components | Costs | Partner | Objects | Additional Data | Location | Planning

Act	SOp	Work ctr	Plant Co...	StTextK	S...	Operation short text	L...	Actual work	Work	Un	N...	Dur.	Un	C.Key	ActTyp
0010	E&M_PH1		1305 PM01			Breakdown Maintenance of Generator		0.0		HR			HR	2 Calculate ...	
0020	E&M_PH1		1305 PM01					0.0		HR			HR		
0030	E&M_PH1		1305 PM01					0.0		HR			HR		

After entering the Operation text, enter the no. of manpower in Number field and enter the proposed duration in the Dur. field, based on these entries system will calculate the value of Work.

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)

Enter the Operations as shown below.

Create Breakdown Maintenance order : Operation Overview

Order: ZM02 \$00000000001 Breakdown Maintenance of Generator
 Sys.Status: WCM CRID MANC NTUP

HeaderData | **Operations** | Components | Costs | Partner | Objects | Additional Data | Location | Planning | Control

Act	SOp	Work ctr	Plant Co...	StTextK	S...	Operation short text	L...	Actual work	Work	Un	N...	Dur.	Un	C.Key	ActTyp
0010	E&M_PH1		1305	WCM		Obtain Permit		0.0		HR			HR	2 Calculate ...	
0020	E&M_PH1		1305	FM01		Check Generator Earth Fault		0.0		1.0 HR	1	1.0 HR	2 Calculate ...		
0030	E&M_PH1		1305	FM01				0.0		HR					

Select Control Key WCM for to obtain permit if required

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

Create Breakdown Maintenance order : Component Overview

Order: ZM02 \$00000000001 Breakdown Maintenance of Generator
 Sys.Status: WCM CRID MANC NTUP

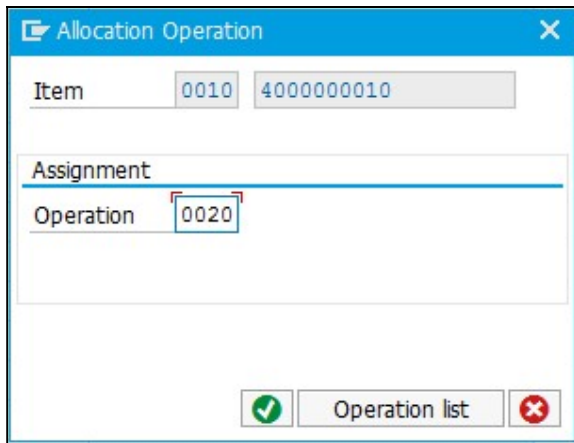
HeaderData | Operations | **Components** | Costs | Partner | Objects | Additional Data | Location | Planning | Control

Ite...	Component	Description	L...	Reqmnt Qty	UM	IC	S..	SLoc	Plnt	Act	Batch	Proc. Category
0010												
0020												

Enter the material code no. here if known or choose from the drop-down list

Enter the required quantity of that material in this field and press enter

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.



Allocation Operation

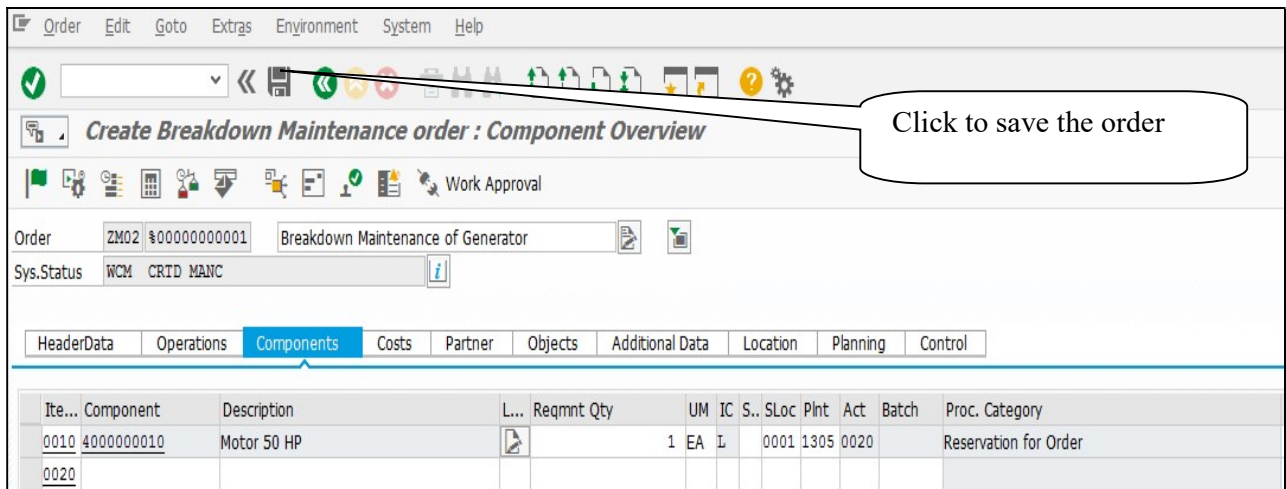
Item: 0010 4000000010

Assignment

Operation: 0020

Buttons: [Green Checkmark] [Operation list] [Red X]

click on 




Order: ZM02 00000000001 Breakdown Maintenance of Generator

Sys.Status: WCM CRTD MANC

Buttons: HeaderData, Operations, **Components**, Costs, Partner, Objects, Additional Data, Location, Planning, Control

Ite...	Component	Description	L...	Reqmnt Qty	UM	IC	S..	SLoc	Plnt	Act	Batch	Proc. Category
0010	4000000010	Motor 50 HP		1	EA	L		0001	1305	0020		Reservation for Order
0020												

Callout: Click to save the order (pointing to the Save icon in the toolbar)

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

 Order 200000060 saved with notification 200000080

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

7 PERMIT(S) APPLYING BY MAINTENANCE

Now Maintenance department will apply for permit(s) which will be required to carry out the job.



In SAP, Work Clearance Management (WCM) component is used for Permit for work process to control and monitor the safety measures.

To execute the maintenance work, maintenance dep't requires permits from operations dep't. For this purpose, maintenance dep't specifies required isolations while applying PTW and operation dep't issues the approval and does the tagging (isolations) so that the work can be performed, after the work completion operation dep't does the untagging (normalization) of those isolations and close the PTW.

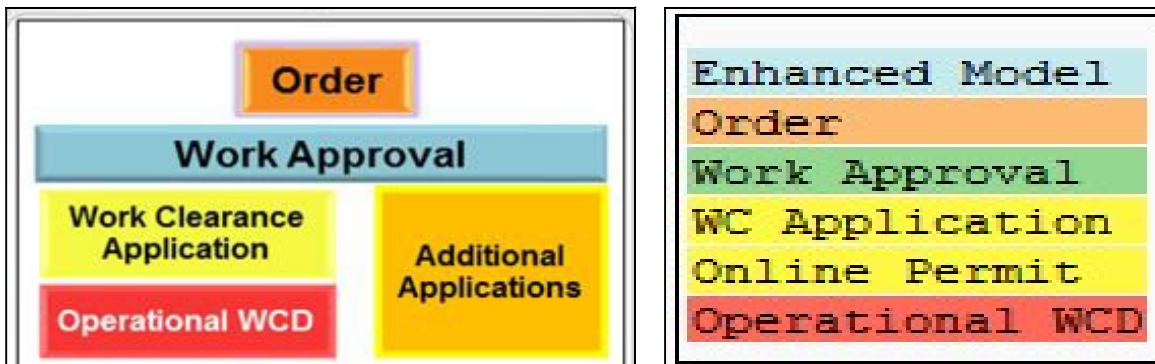


If any permit is required to carry out the job, no work can be executed by maintenance on the site until and unless operation person do the tagging and issues PTW and other permit.

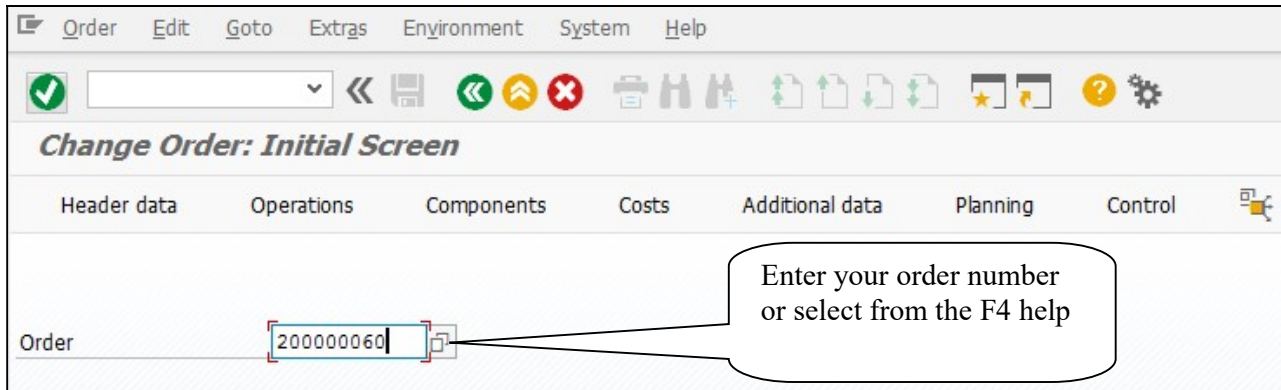
WCM Architecture:

The Enhanced model of WCM, used in UJVNL, comprises the following Work clearance management objects:

- **Work approval** - top level permit approval document.
- **Work clearance application (WCA)** - for Isolations based permit application, e.g. PTW
- **Operational Work clearance document (WCD)** - contains applicable isolations list.
- **Additional Applications** – online permit



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



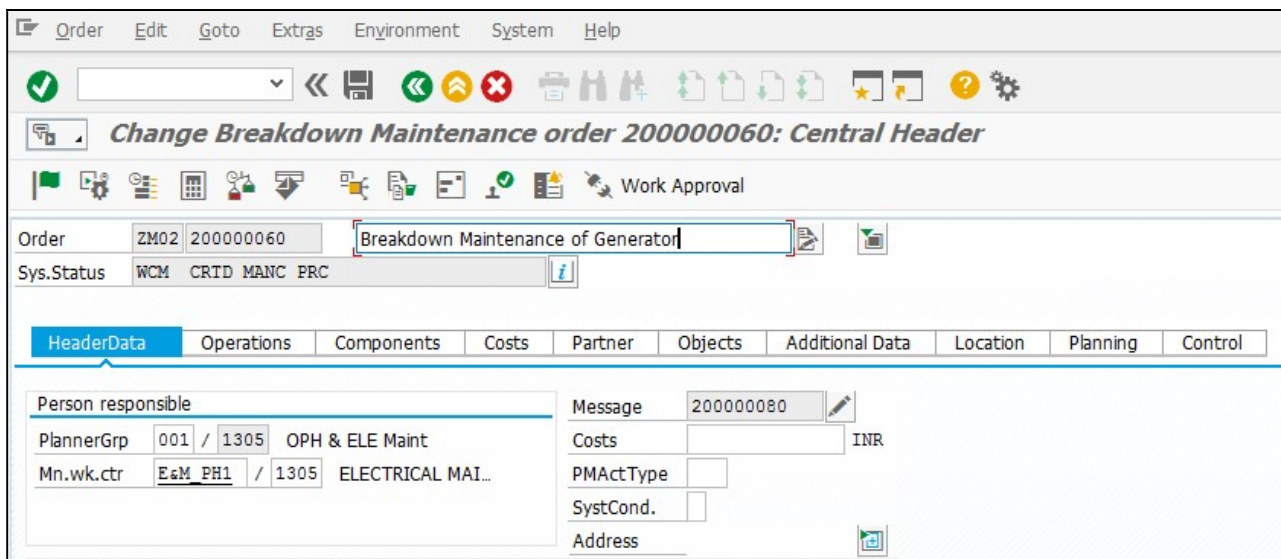
Change Order: Initial Screen

Header data Operations Components Costs Additional data Planning Control

Order: 200000060

Enter your order number or select from the F4 help

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



Change Breakdown Maintenance order 200000060: Central Header

Order: ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status: WCM CRTD MANC PRC

HeaderData Operations Components Costs Partner Objects Additional Data Location Planning Control

Person responsible

PlannerGrp: 001 / 1305 OPH & ELE Maint

Mn.wk.ctr: E&M_PH1 / 1305 ELECTRICAL MAI...

Message: 200000080

Costs: INR

PMActType

SystCond.

Address

Now assign the standard Isolations template of the Equipment (required for PTW) to the permit operation as shown below.

Change Breakdown Maintenance order 200000060: Operation Overview

Order: ZM02 | 200000060 | Breakdown Maintenance of Generator
Sys.Status: WCM CRID MANC PRC

HeaderData | **Operations** | Components | Partner | Objects | Additional Data | Location | Planning | Control

Act	Seq	Work ctr	Plant Co...	StTextK	S...	Operation short text	L...	Actual work	Work	Un	N...	Dur.	Un	C.Key
0010		E&M_PH1	1305	WCM		Obtain Permit		0.0		HR			HR	2 Calculate ...
0020		E&M_PH1	1305	PM01		Check Generator Earth Fault		0.0	1.0	HR	1	1.0	HR	2 Calculate ...
0030		E&M_PH1	1305	PM01				0.0		HR			HR	
0040		E&M_PH1	1305	PM01				0.0		HR			HR	
0050		E&M_PH1	1305	PM01				0.0		HR			HR	
0060		E&M_PH1	1305	PM01										
0070		E&M_PH1	1305	PM01										
0080		E&M_PH1	1305	PM01										
0090		E&M_PH1	1305	PM01										
0100		E&M_PH1	1305	PM01										
0110		E&M_PH1	1305	PM01										
0120		E&M_PH1	1305	PM01										
0130		E&M_PH1	1305	PM01				0.0		HR			HR	
0140		E&M_PH1	1305	PM01						HR			HR	
0150		E&M_PH1	1305	PM01				0.0		HR			HR	

General | Internal | External | Dates | Act. Data | **Enhancement** | Ex. Factor | Catalog

Select the permit operation with control key WCM

Click this button

Enhancement Tab will open in the Operation details screen as shown below.

Enter or select the required WCD template (i.e. isolations template).

Order | Edit | Goto | Extras | Environment | System | Help

Change Breakdown Maintenance order 200000060: User Data

Header data | Operations | Components

Order: 200000060 | Activity: 0010 / | Ctrl key: WCM
StdTextKey/ShrtText: Obtain Permit

General | Internal | External | Dates | Act. Data | **Enhancement**

Field key: PM/WCM
WCD Template:


Click to get the drop-down list of WCD templates specific to the Equipment.

List Editing - Display WCD Templates



WCD	Short Text	Long Text	Valid from	Valid to	MaintS
Func. Loc. Equipment ObjList Usg.					
System status	UsrStatus	Template			
<input checked="" type="checkbox"/> 1300000000400	WCD: ISOLATIONS FOR GENERATOR		08.02.2018	09.02.2018	
	11000742	001			
CRTE					
<input type="checkbox"/> 1300000000401	ISOLATIONS FOR COMPRESSOR		08.02.2018	09.02.2018	
	11000742	001			
CRTE					

Select the required WCD template

Click this button



Order Edit Goto Extras Environment System Help

Change Breakdown Maintenance order 200000060: User Data

Header data Operations Components

Order 200000060 Activity 0010 / Ctrl key WCM

StdTextKey/ShrtText Obtain Permit

General Internal External Dates Act. Data **Enhancement**

Field key PM/WCM

WCD Template 1300000000400

Go back to Operations tab page, using  button at top of the screen.

Change Breakdown Maintenance order 200000060: Operation Overview

Order: ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status: **WCM** CRID MANC PRC

Click to create WCM objects automatically.

HeaderData	Operations	Components	Costs	Partner	Objects	Additional Data	on	Planning
Act	SOp	Work ctr	Plant	Co...	StTextK	S.. Operation short text	L...	Actual
0010		E&M_PH1	1305	WCM		Obtain Permit		
0020		E&M_PH1	1305	PM01		Check Generator Earth Fault		




After the assignment of control key WCM to any of the operation in the Operations tab, a new button



will appear at the top as shown above and order gets new status WCM, which shows that WCM is active in order, as shown above.



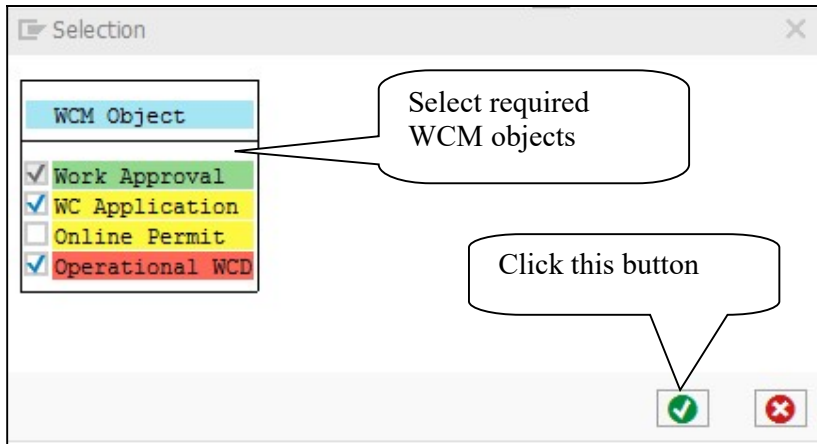
Now click on **Work Approval** button on the top of the screen, then Work Approval assignment screen will appear as shown below. Click on the automatic generation button  to generate required WCM objects, including operational WCD with isolations copied from the selected WCD template.

Assignments - Change Work Approvals

WAP	Short Text	Long Text	Valid from	Valid to
Func. Loc.	Equipment	ObjList		
System status	UsrStatus	Template		

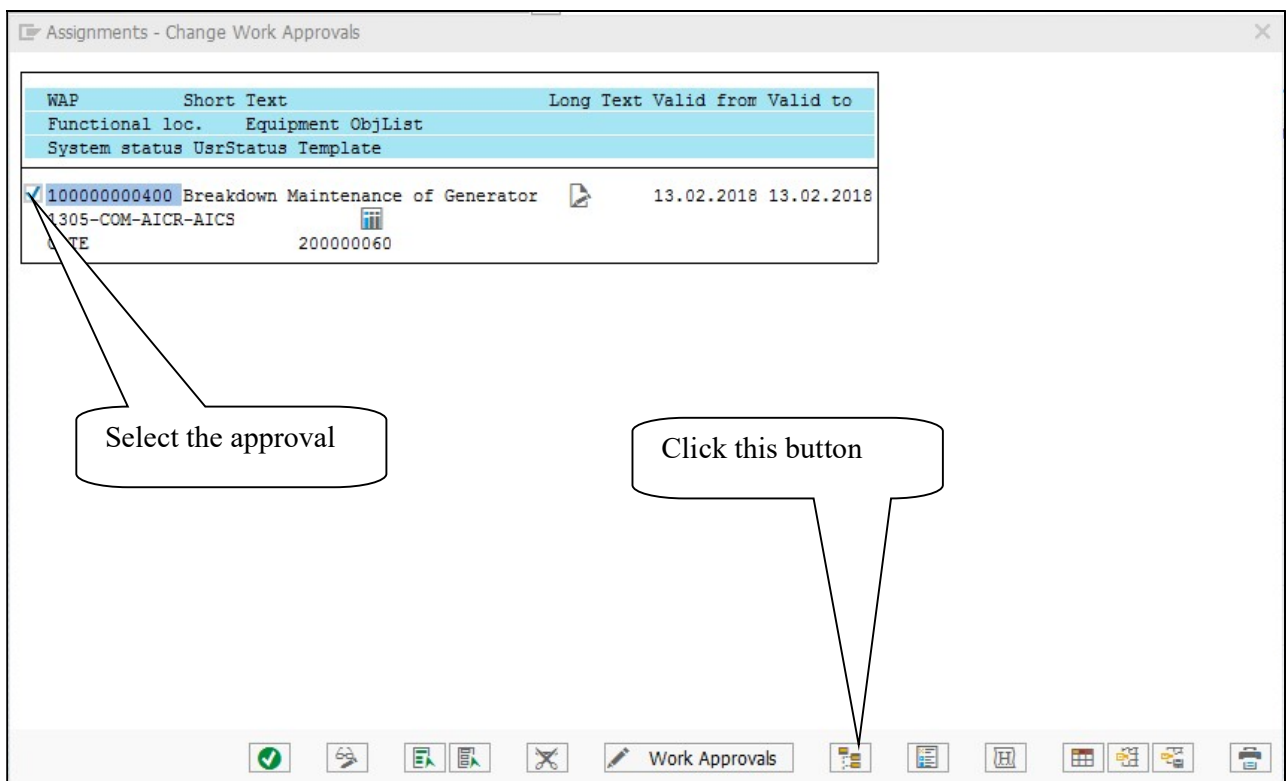
List does not contain any data

WCM objects selection screen will appear as shown below. Choose objects to generate as per your requirement and then press ENTER key.



All the WCM objects will be generated automatically by the system including Operational WCD by using the WCD template assigned in the permit operation.

The Work Approval (top level WCM object) assignment pop-up box will open as shown below.



The WCM objects hierarchy will open as shown below.

Multi-Level List Editing - Display

1305

- 100000000400 Breakdown Maintenance of Generator 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS
CRTE ●○○
- 110000000400 Breakdown Maintenance of Generator 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS
CRTE ●○○
- 130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742
CRTE ●○○

Color Legend

- Work Approvals
- Applications
- Operational WCDs
- Catalogs


Go back using  button.

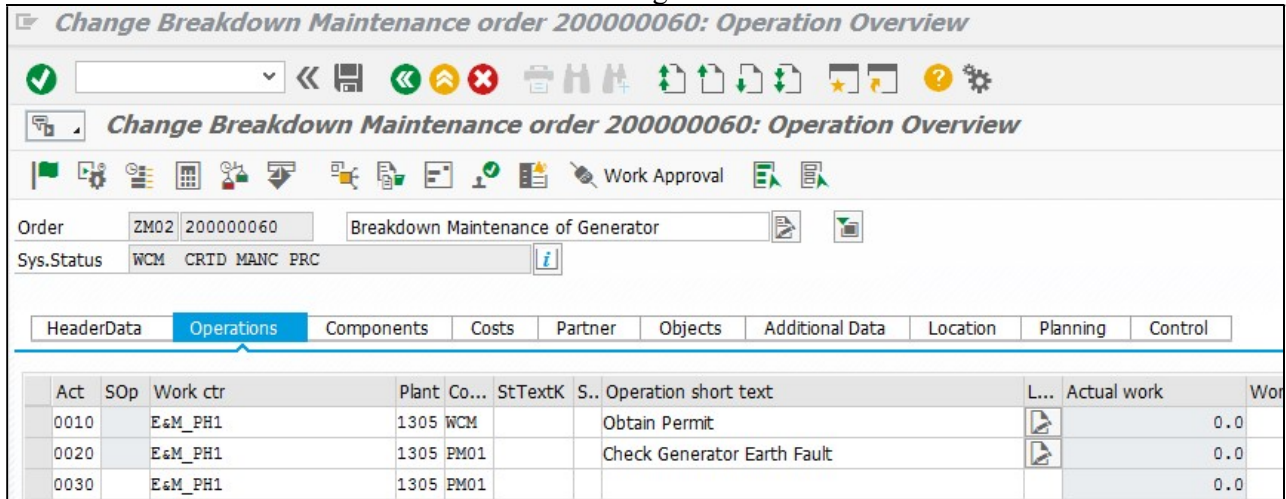
Assignments - Change Work Approvals

WAP	Short Text	Long Text	Valid from	Valid to
Functional loc.	Equipment ObjList			
System status	UtrStatus	Template		
✓ 100000000400	Breakdown Maintenance of Generator		13.02.2018	13.02.2018
	1305-COM-AICR-AICS			
CRTE	200000060			

Click to continue and close the screen

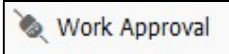
Work Approvals


Click  button to continue and close the WAP assignment box.



Act	SOp	Work ctr	Plant Co...	StTextK	S...	Operation short text	L...	Actual work	Wor
0010		EaM_PH1	1305 WCM			Obtain Permit		0.0	
0020		EaM_PH1	1305 PM01			Check Generator Earth Fault		0.0	
0030		EaM_PH1	1305 PM01					0.0	

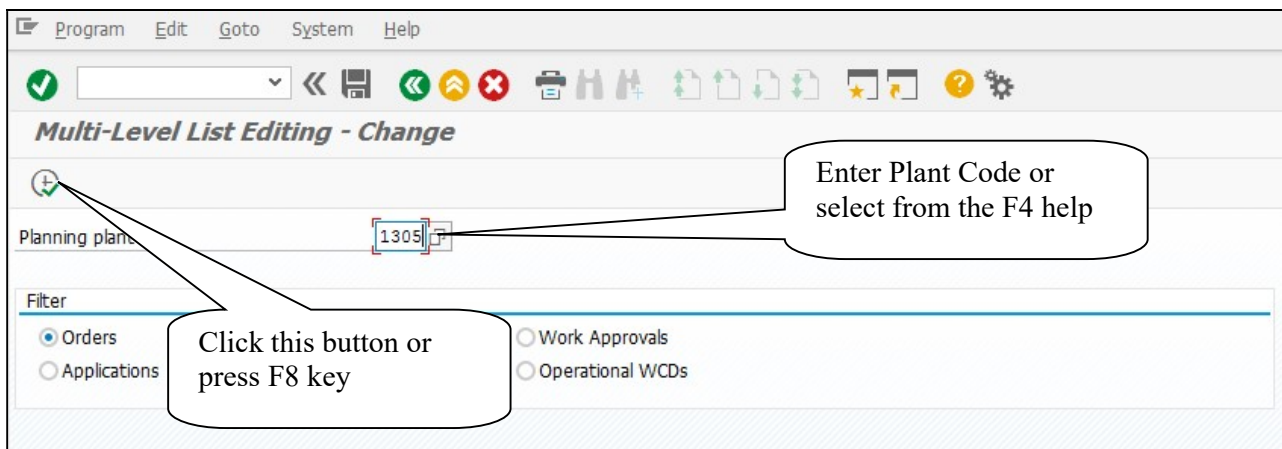


Now the Work approval button at top change and appears like this  , It means that order is assigned to a Work Approval, since all the WCM objects have been generated.

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

Next step is to prepare all the WCM objects after reviewing/ editing.

Menu Path	SAP Menu → Logistics → Plant Maintenance → Work Clearance Management → Work Approval → List Editing → Change (Multilevel)
Transaction Code	WCLE



Enter Plant Code or select from the F4 help

Click this button or press F8 key

Program Edit Goto System Help

Display PM orders: Selection of Orders

Settlement Receivers PRT

Order status

☒ Outstanding ☒ In process ☐ Completed ☐ Historical Sel.pro

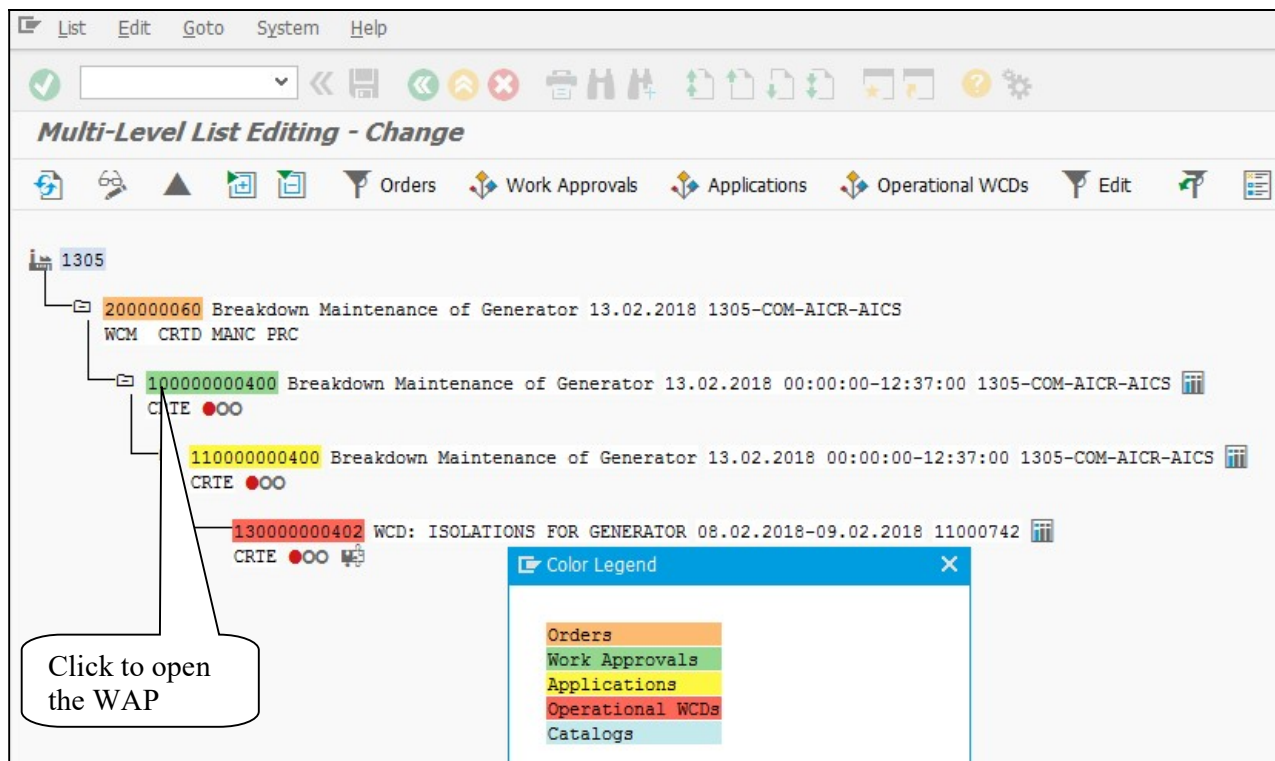
Address

Order selection

Order	200000060	to		
Order Type		to		
Functional Location		to		
Equipment		to		
Material		to		
Serial Number		to		
Addit. device data		to		
Notification		to		
Main work center		to		
Plant for WorkCenter		to		
Period	10.11.2017	to	08.02.2018	
Partners				
Currency				

Click this button or press F8 key

Enter order number or select from the F4 help



Multi-Level List Editing - Change

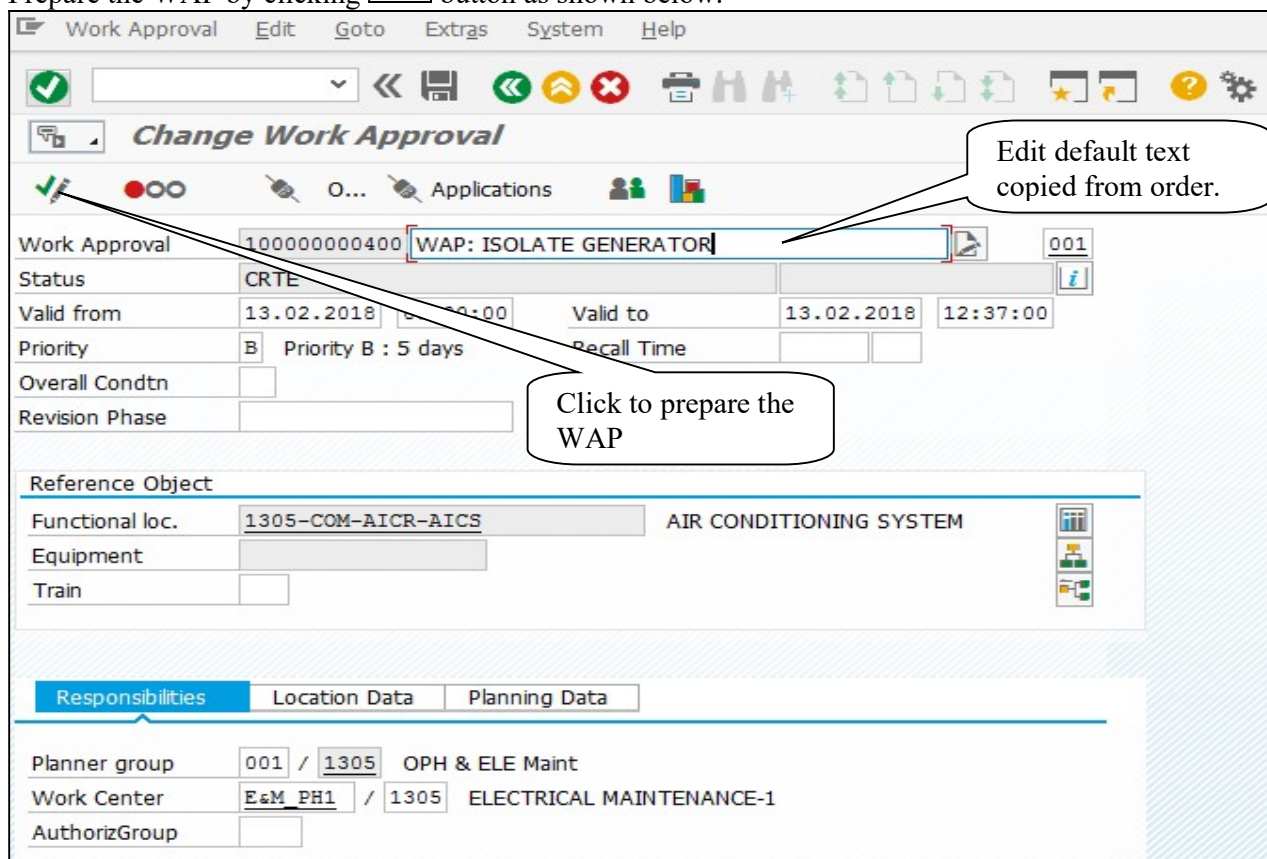
Click to open the WAP

Color Legend

- Orders
- Work Approvals
- Applications
- Operational WCDs
- Catalogs

Open the Work Approval, change its description (defaulted as order description) as required.

Prepare the WAP by clicking  button as shown below.



Change Work Approval

Edit default text copied from order.

Click to prepare the WAP

Work Approval: 100000000400 WAP: ISOLATE GENERATOR 001

Status: CRTE

Valid from: 13.02.2018 00:00 Valid to: 13.02.2018 12:37:00

Priority: B Priority B : 5 days Recall Time

Overall Condtn

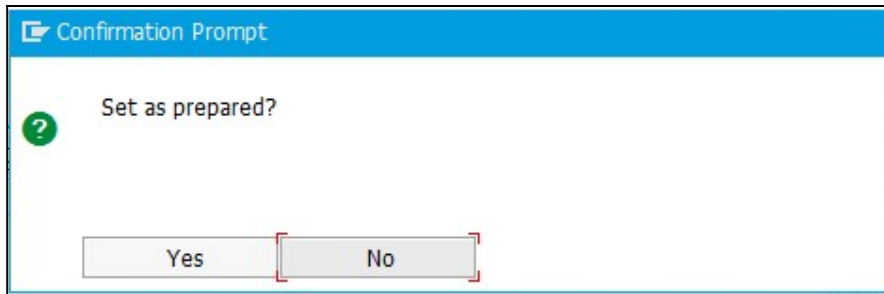
Revision Phase

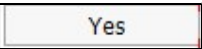
Reference Object

Functional loc.	1305-COM-AICR-AICS	AIR CONDITIONING SYSTEM
Equipment		
Train		

Responsibilities Location Data Planning Data

Planner group	001 / 1305	OPH & ELE Maint
Work Center	E&M_PH1 / 1305	ELECTRICAL MAINTENANCE-1
AuthorizGroup		

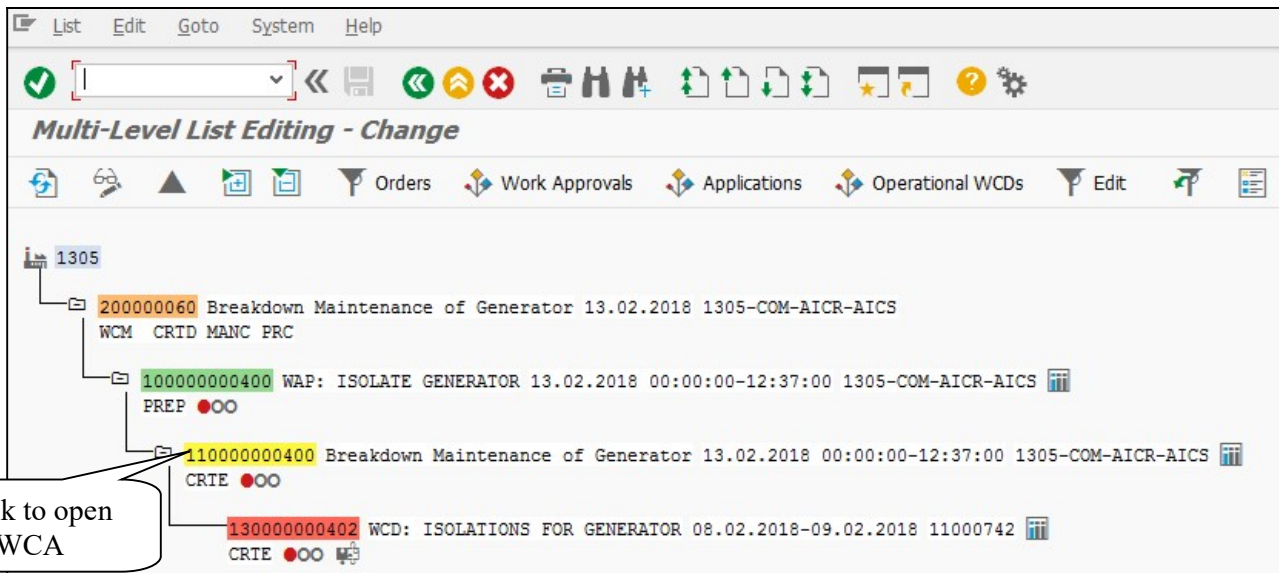


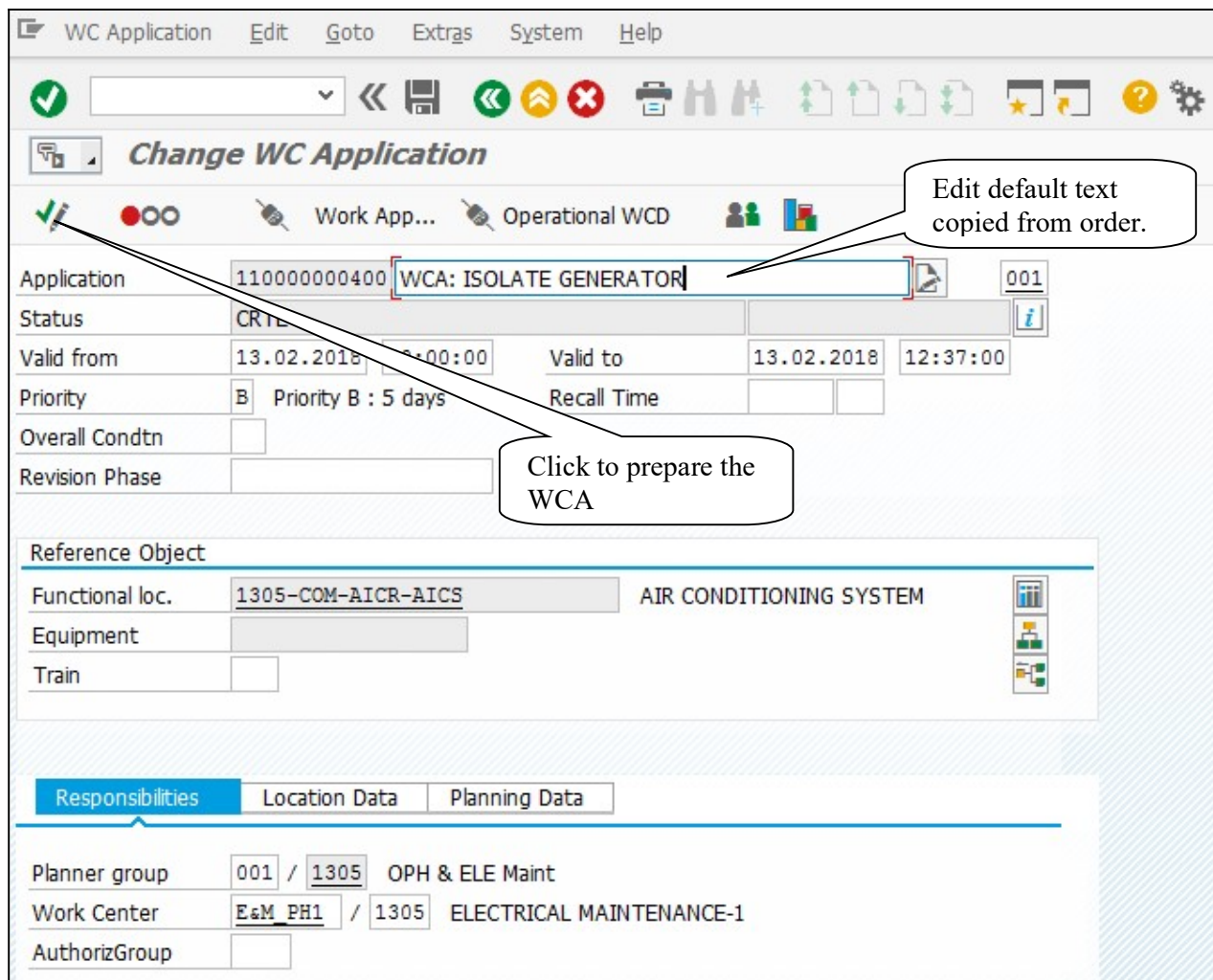
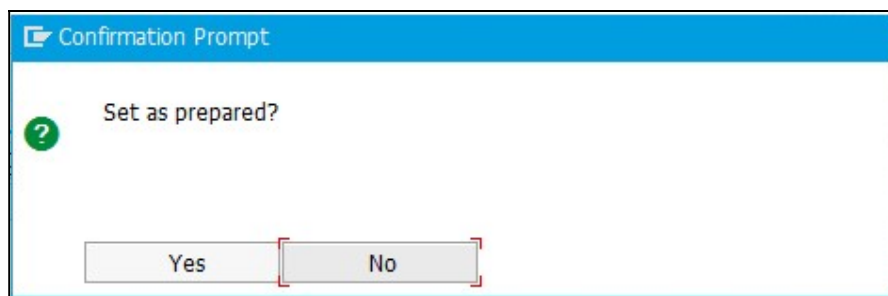
Confirm the message as shown above by clicking  button.

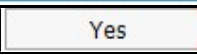
WAP will be saved with following system message.



Now Open the Work Clearance Application, change its description as required.
Prepare the WCA as shown below.



Confirm the message as shown above by clicking  button.

WCA will be saved with following system message.

 WC Application was saved with number 110000000400

Now Open the Work Clearance Document.

Prepare the WCD, after reviewing the isolation list and selecting safety instruction codes, as shown below.

List Edit Goto System Help

Multi-Level List Editing - Change

Orders Work Approvals Applications Operational WCDs Edit

1305


2000000060 Breakdown Maintenance of Generator 13.02.2018 1305-COM-AICR-AICS
WCM CRTD MANC PRC

100000000400 WAP: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS
PREP ●●●

110000000400 WCA: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS
PREP ●●●

130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742
CRTE ●●●

Click to open the WCD

Go to Isolation maintenance screen by clicking  button.

Operational WCD Edit Goto Extras System Help

Change Operational WCD: Header

WC Application

WC Document 130000000402 WCD: ISOLATIONS FOR GENERATOR 001

Status CRTE

Valid from 08.02.2018 00:00:00 Valid to 09.02.2018 00:00:00

Priority

Overall Condtm

Revision Phase

Click to go to Maintenance screen

Reference Object

Functional loc.

Equipment 11000742 COMPRESSOR-1 OF AIR CONDITIONER -1

Train

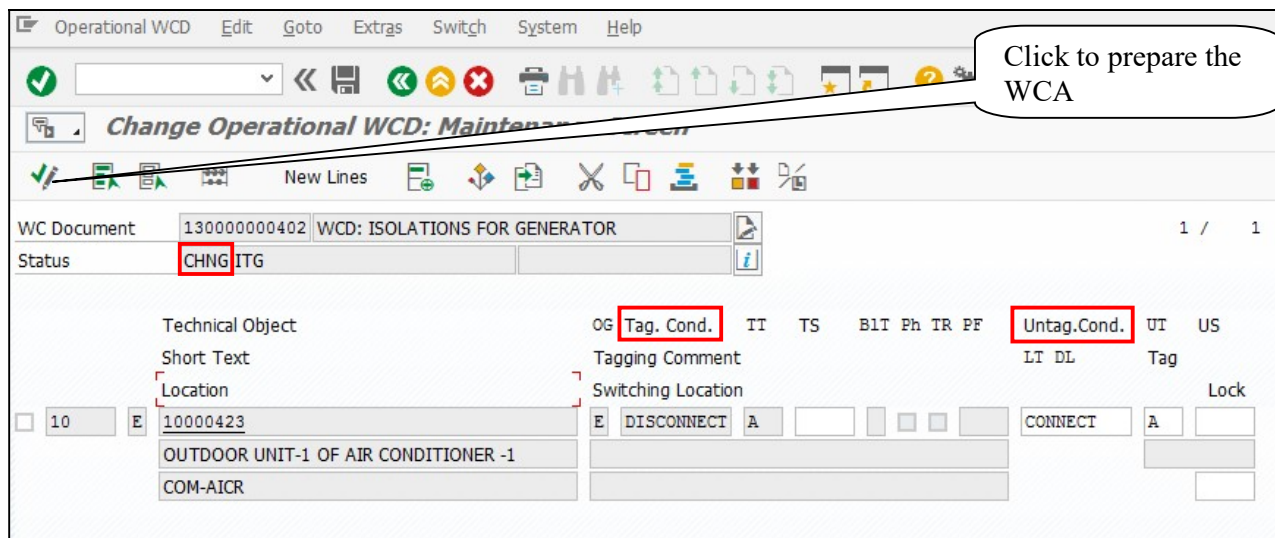
Responsibilities Location Data Planning Data

Planner group 001 / 1305 OPH & ELE Maint

Work Center E&M_PH1 / 1305 ELECTRICAL MAINTENANCE-1



AuthorizGroup

Edit default text copied from order.




Review the isolations and edit if required.

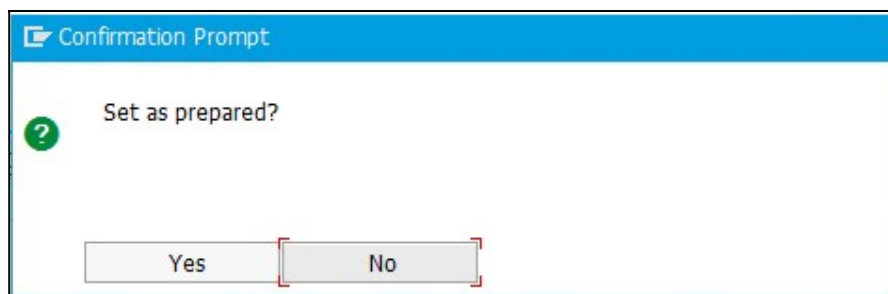


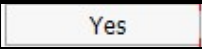
The Isolations can be deleted (using  button) or new isolations can be inserted here (using  button), if required before preparing the WCD.




The WCM object (WAP, WCA, WCD etc.) fields cannot be edited, once they are prepared. Only very limited fields can be edited after revoking the prepared status (via Menu option: Operational WCD > Functions > Revoke prepared).

For Example: Here  icon for deleting isolations is not available as it was prepared without reviewing the isolations & then the prepare status is revoked. So now the status is CHNG instead of CRTE and only new isolations can be added.



Confirm the message as shown above by clicking  button. WCA will be saved with following system message.

 Operational WCD was saved with number 130000000402

8 PERMIT(S) APPROVAL – BY OPERATION IN – CHARGE



For executing the work, Maintenance department has applied for permit(s) by creating applicable WCM objects and then making status of those as prepared (PREP). For PTW, the operational WCD is prepared with required isolations, which need to be tagged by operations department before PTW can be issued.

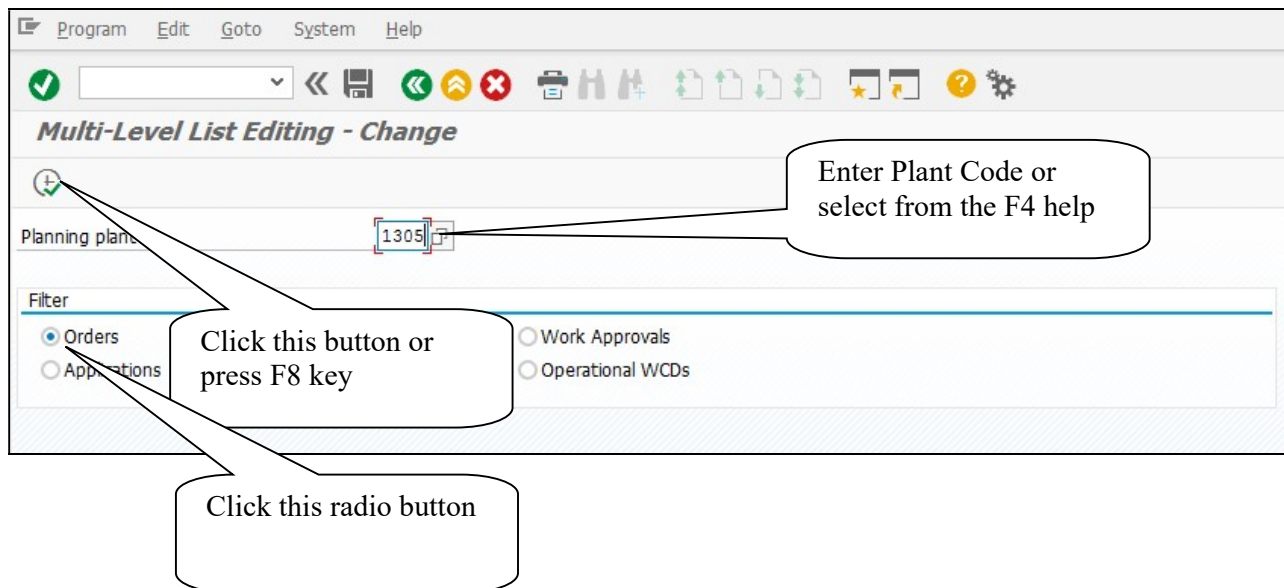


Operation department will see the list of permits that maintenance has applied for (i.e. with status-PREP) The operation shift in-charge approves the Work Approval after deciding whether the required isolations can be done in case of PTW



After only this go-ahead approval by in-charge, the Operation executive can arrange required isolations at site for PTW & then issues the work permit to Maintenance dep't.

Menu Path	SAP Menu → Logistics → Plant Maintenance → Work Clearance Management → Work Approval → List Editing → Change (Multilevel)
Transaction Code	WCLE



The screenshot shows the SAP 'Multi-Level List Editing - Change' window. The title bar includes 'Program', 'Edit', 'Goto', 'System', and 'Help'. The main window has a toolbar with various icons. The title 'Multi-Level List Editing - Change' is displayed. Below the title, there is a 'Planning plant' field with a dropdown arrow and a text box containing '1305'. A callout bubble points to this text box with the text 'Enter Plant Code or select from the F4 help'. Below the 'Planning plant' field, there is a 'Filter' section with two radio buttons: 'Orders' (selected) and 'Applications'. A callout bubble points to the 'Orders' radio button with the text 'Click this radio button'. To the right of the 'Filter' section, there are two radio buttons: 'Work Approvals' and 'Operational WCDs'. A callout bubble points to the 'Orders' radio button with the text 'Click this button or press F8 key'.

Program Edit Goto System Help

Display PM orders: Selection of Orders

Settlement Receivers PRT

Order status

☒ Outstanding ☒ In process ☐ Completed ☐ Historical Sel.pro Address

Order selection

Order 200000060 to

Order Type to

Functional Location to

Equipment to

Material to

Serial Number to

Addit. device data to

Notification to

Main work center to

Plant for WorkCenter to

Period 10.11.2017 to 08.02.2018

Partners

Currency

Click this button or press F8 key

Enter order number or select from the F4 help

List Edit Goto System Help

Multi-Level List Editing - Change

Orders Work Approvals Applications Operational WCDs Edit

1305

200000060 Breakdown Maintenance of Generator 13.02.2018 1305-COM-1305-WCM CRTD MANC PRC

100000000400 WAP: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

110000000400 WCA: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742

Click on this traffic light to give approval

Maint.
Order

Work
Approval

WCA

Operational
WCD

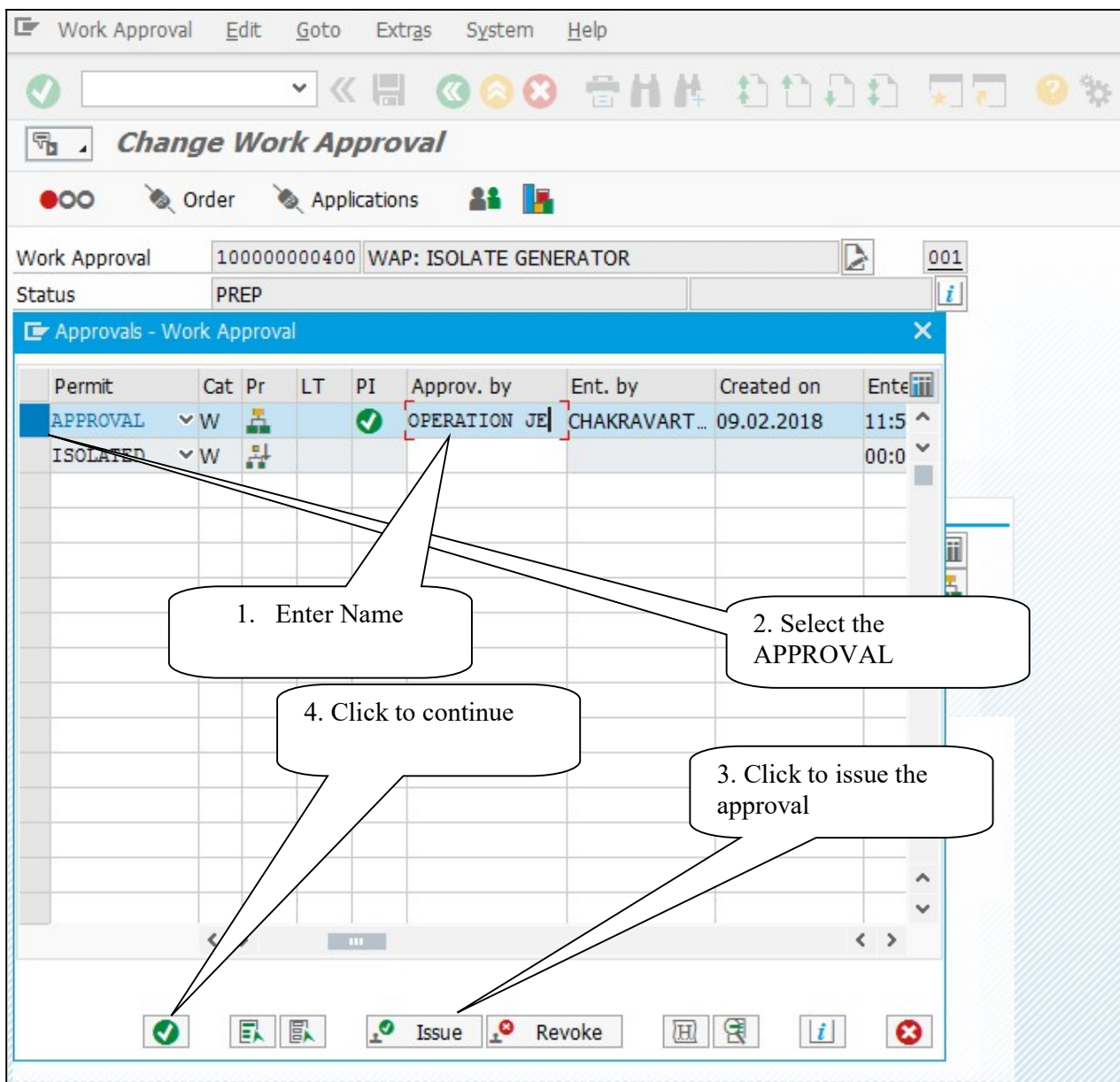
You can review each document by clicking on its number and the document will open.



You can go in to the detail screen of any document by just clicking directly on its number, system will open that document, e.g. if you want to see the order then you can directly click on the order no. and system will open the order screen directly from here.

After reviewing the documents, the operation shift in-charge will approve the Work Approval as shown below by clicking the red traffic light of WAP.

Approval screen will open, enter name in Approved by, now select the APPROVAL and click  **Issue** button or press Enter key.



The screenshot shows the 'Change Work Approval' window. At the top, there's a menu bar with 'Work Approval', 'Edit', 'Goto', 'Extras', 'System', and 'Help'. Below the menu is a toolbar with various icons. The main area displays the 'Work Approval' details: '100000000400 WAP: ISOLATE GENERATOR' and 'Status: PREP'. A table titled 'Approvals - Work Approval' is shown with the following data:

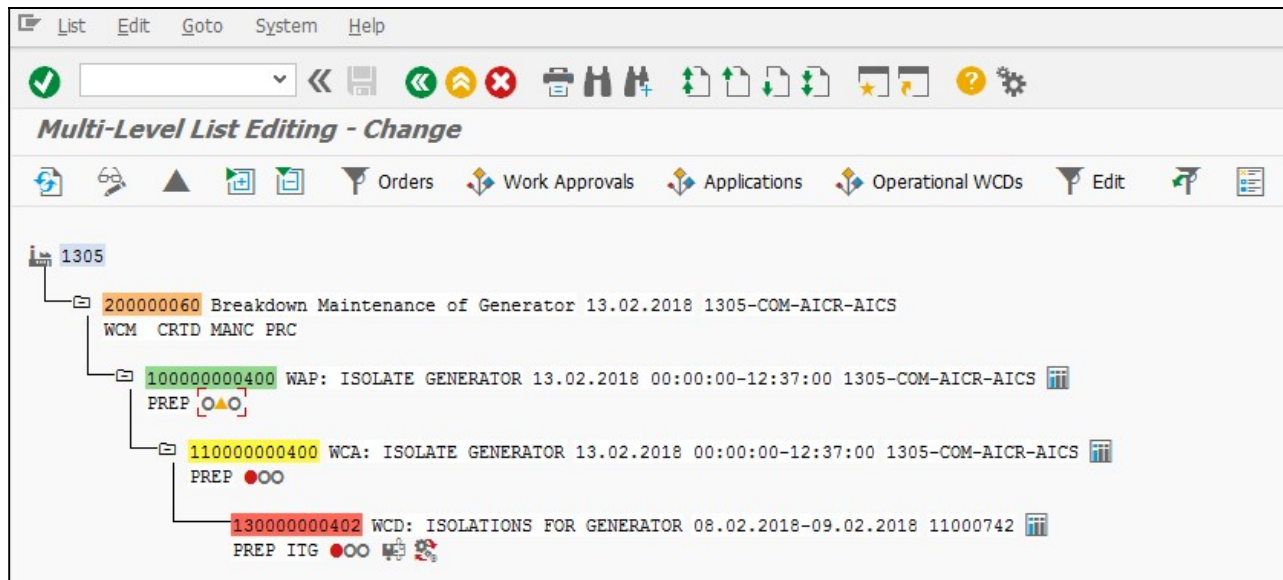
Permit	Cat	Pr	LT	PI	Approv. by	Ent. by	Created on	Ente
APPROVAL	W			✓	OPERATION JE	CHAKRAVART...	09.02.2018	11:5
ISOLATED	W							00:0

Four numbered callouts are present:

1. Enter Name (points to the 'Approv. by' field)
2. Select the APPROVAL (points to the 'APPROVAL' row in the table)
3. Click to issue the approval (points to the 'Issue' button in the bottom toolbar)
4. Click to continue (points to the green checkmark icon in the bottom toolbar)


The approval is activated with details & Work Approval will be saved with following system message

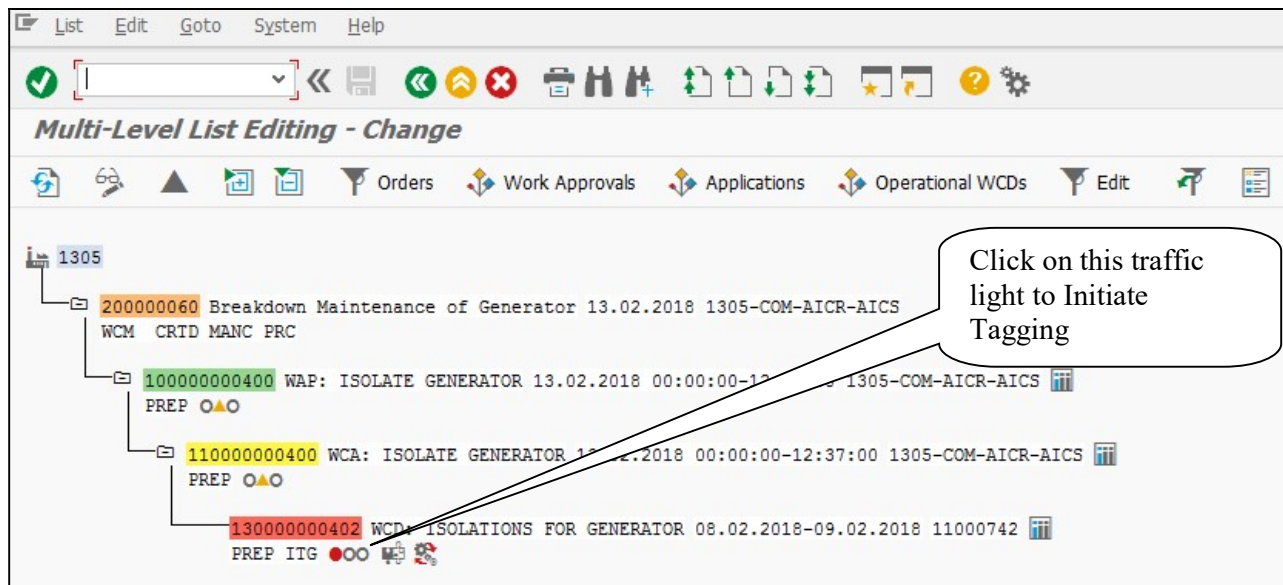
✓ Work Approval was saved with number 100000000400



Note that now the traffic light of Work Approval, which was just approved, has become yellow, which shows that the approval has been issued.

Now there is no need to issue the approval for each WCA document since the approval from top WCM object- WAP flows to WCA object automatically.

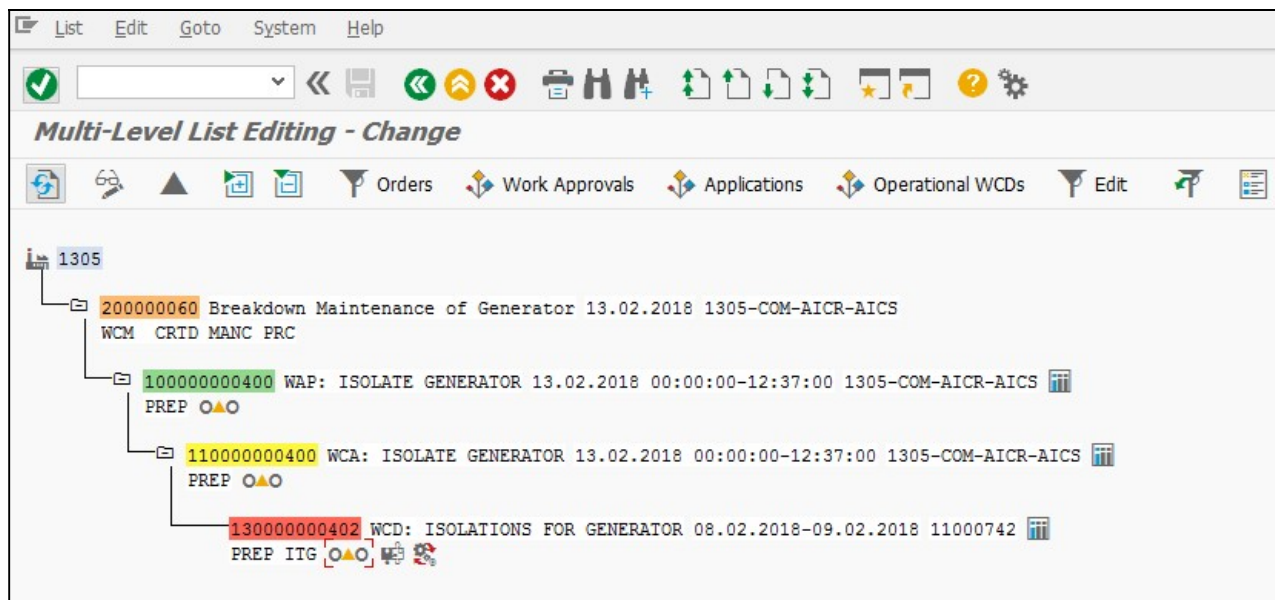
Click on the refresh  button at top and traffic light of all the WCA document will become yellow except the operational WCD



 Issue

3. Click to issue the approval

✔ Operational WCD was saved with number 130000000402

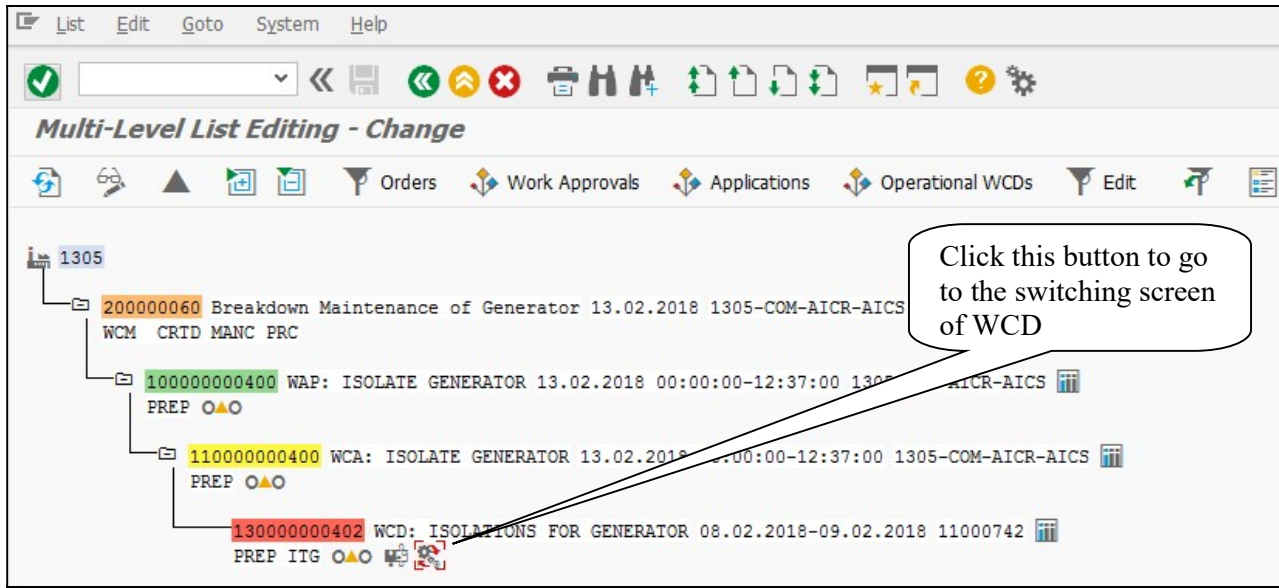


Now all the traffic lights has become yellow.


9 TAGGING/PERFORMING ISOLATIONS – BY OPERATIONS EXECUTIVE

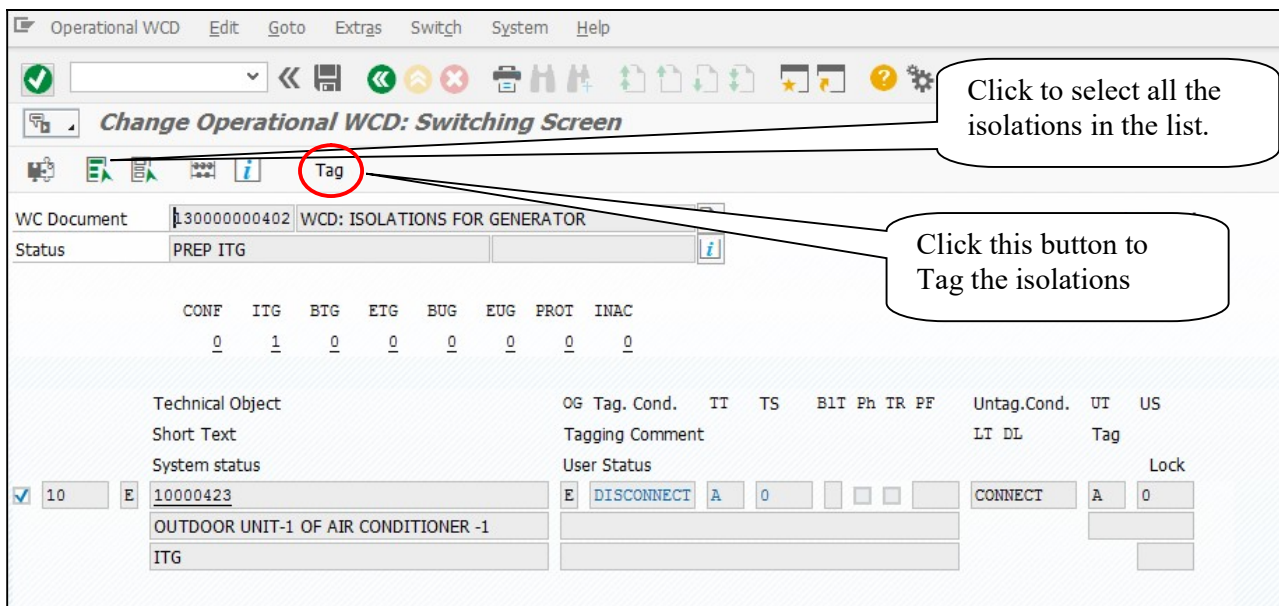
The operations executive will open the WCLE transaction as in previous section, for listing the approved Work Approvals by shift in-charge, for doing the required isolations (for PTW) before permit can be issued to maintenance dep't.



The steps will be same to run **WCLE** transaction and access required WCM objects.

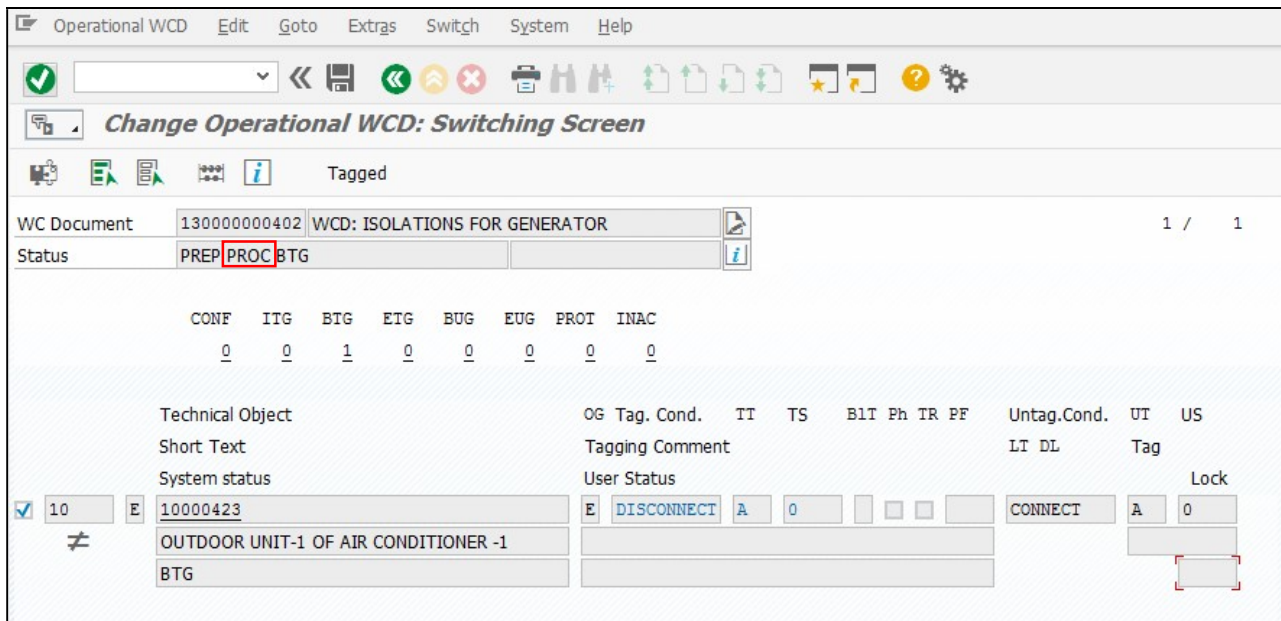


The tagging of isolations, listed in the operational WCD document, is performed from the switching screen.

Next step is to go to the switching screen, & clicking  on button as shown above.



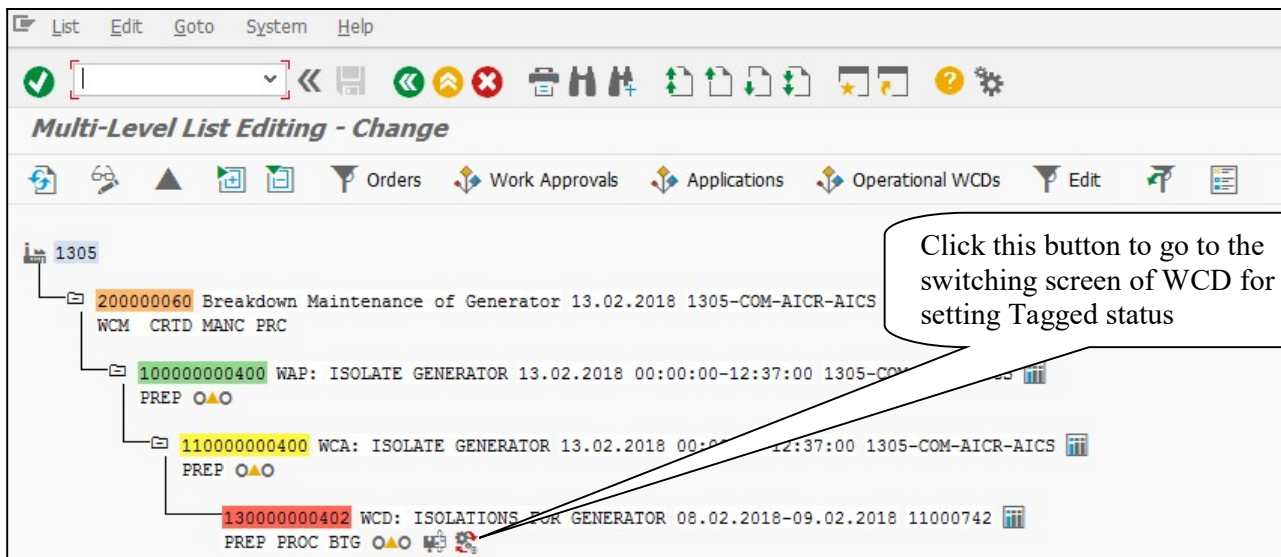
Select all the isolations and click  button to start the tagging process. The isolations will get  symbol to show that tagging/ isolation is under process as shown below.

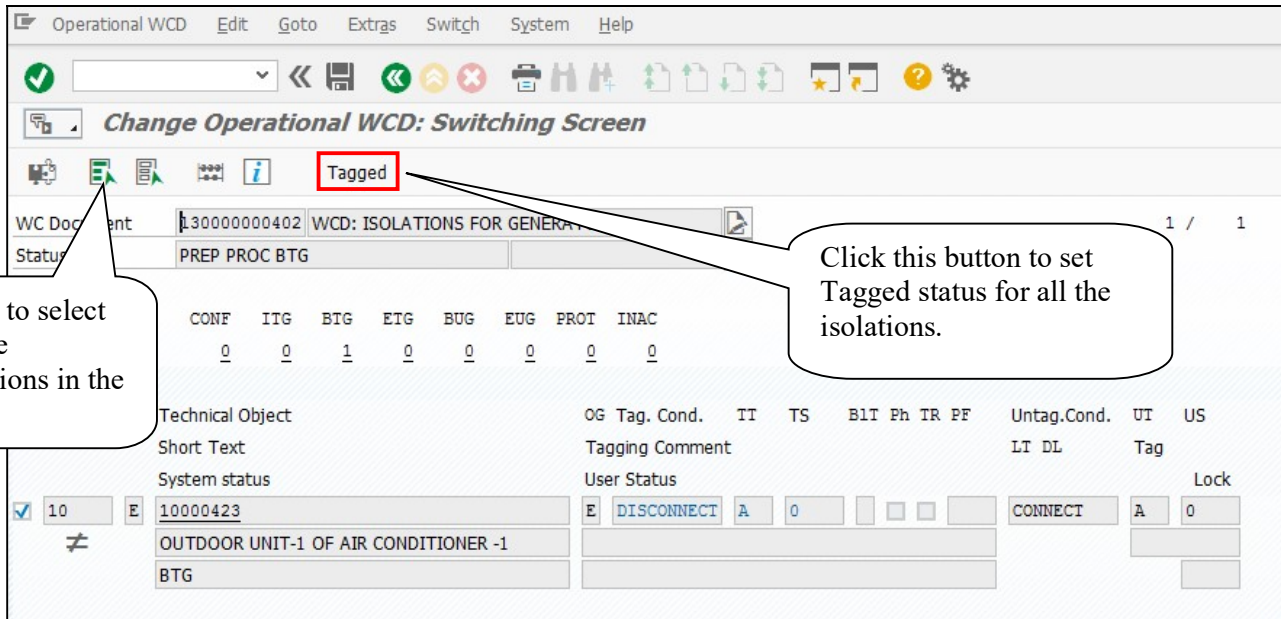


Operational WCD will be saved with following system message

✓ Operational WCD was saved with number 130000000402

The Tag action starts processing of Tagging/ Isolating. The system status PROC is set. The technician will make all the isolations and inform to the Operation executive in control room.





Operational WCD Edit Goto Extras Switch System Help

Change Operational WCD: Switching Screen

WC Document: 130000000402 WCD: ISOLATIONS FOR GENERATOR

Status: PREP PROC BTG

CONF	ITG	BTG	ETG	BUG	EUG	PROT	INAC
0	0	1	0	0	0	0	0

Technical Object: OUTDOOR UNIT-1 OF AIR CONDITIONER -1

OG Tag. Cond. IT TS B1T Ph TR PF Untag. Cond. UT US

Tagging Comment: DISCONNECT A 0

User Status: CONNECT A 0

Lock: 0

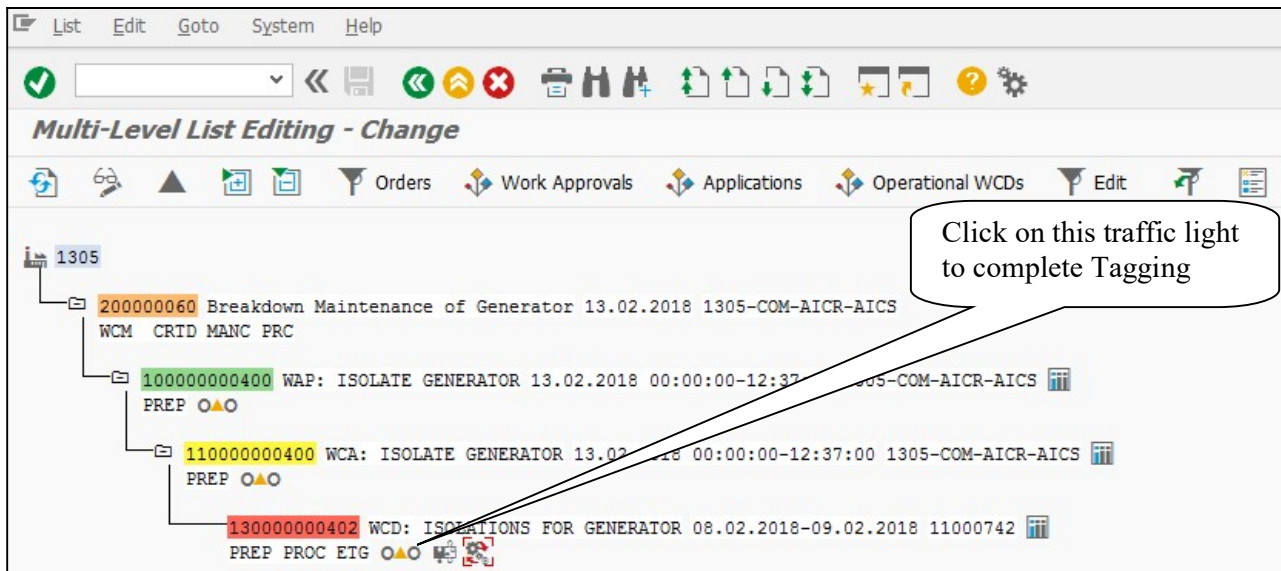
Operational WCD will be saved with following system message

Operational WCD was saved with number 130000000402

Now save the operational WCD by clicking save button.

After saving, the system will take you to the originating screen as below.

The traffic light of WCD will become green as all the required approvals for WCD are in place, the last one being the Tagged status after all the isolations completed.



List Edit Goto System Help

Multi-Level List Editing - Change

Orders Work Approvals Applications Operational WCDs Edit

1305

200000060 Breakdown Maintenance of Generator 13.02.2018 1305-COM-AICR-AICS

WCM CRTD MANC PRC

100000000400 WAP: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

PREP ○●○

110000000400 WCA: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

PREP ○●○

130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742

PREP PROC ETG ○●○

Approval screen will open, enter name in Approved by, now select the APPROVAL and click button or press Enter key.

Operational WCD Edit Goto Extras System Help

Change Operational WCD: Header

WC Document 130000000402 WCD: ISOLATIONS FOR GENERATOR 001

Status PREP PROC ETG

Approvals - Operational WCD

Permit	Cat	Pr	LT	PI	Approv. by	Ent. by	Created on	Ente
TAG	W			✓	OPERATION AE	CHAKRAVART...	09.02.2018	12:2
TAGGED	W			✓	OPERATION JE	CHAKRAVART...	12.02.2018	17:1

1. Enter Name

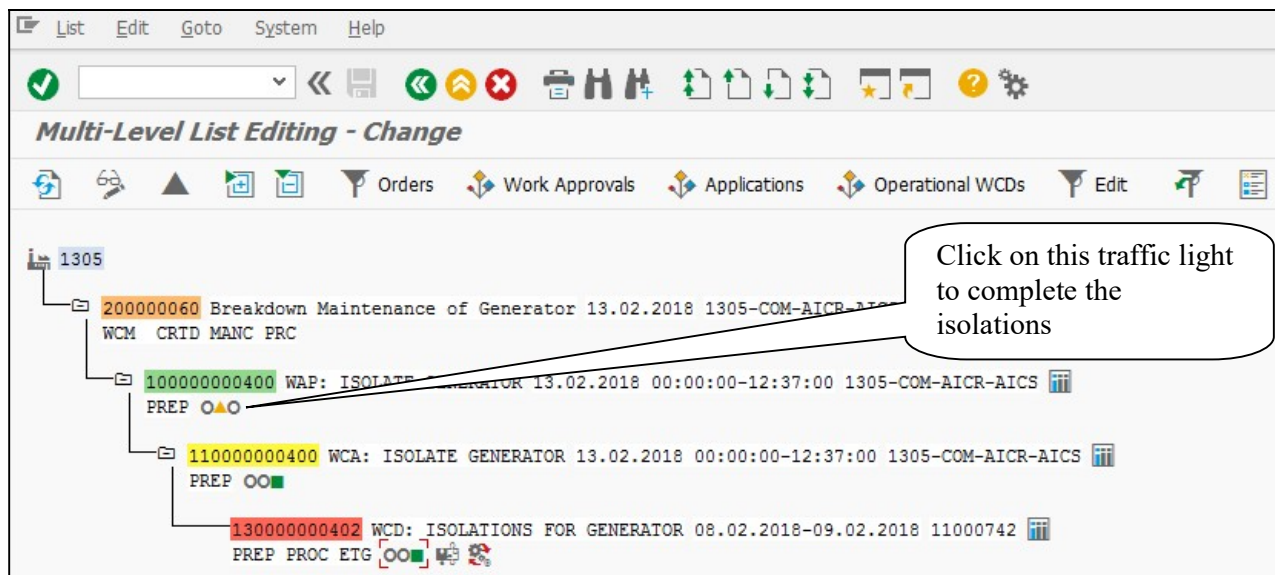
2. Select the APPROVAL

3. Click to continue


✓ Revoke

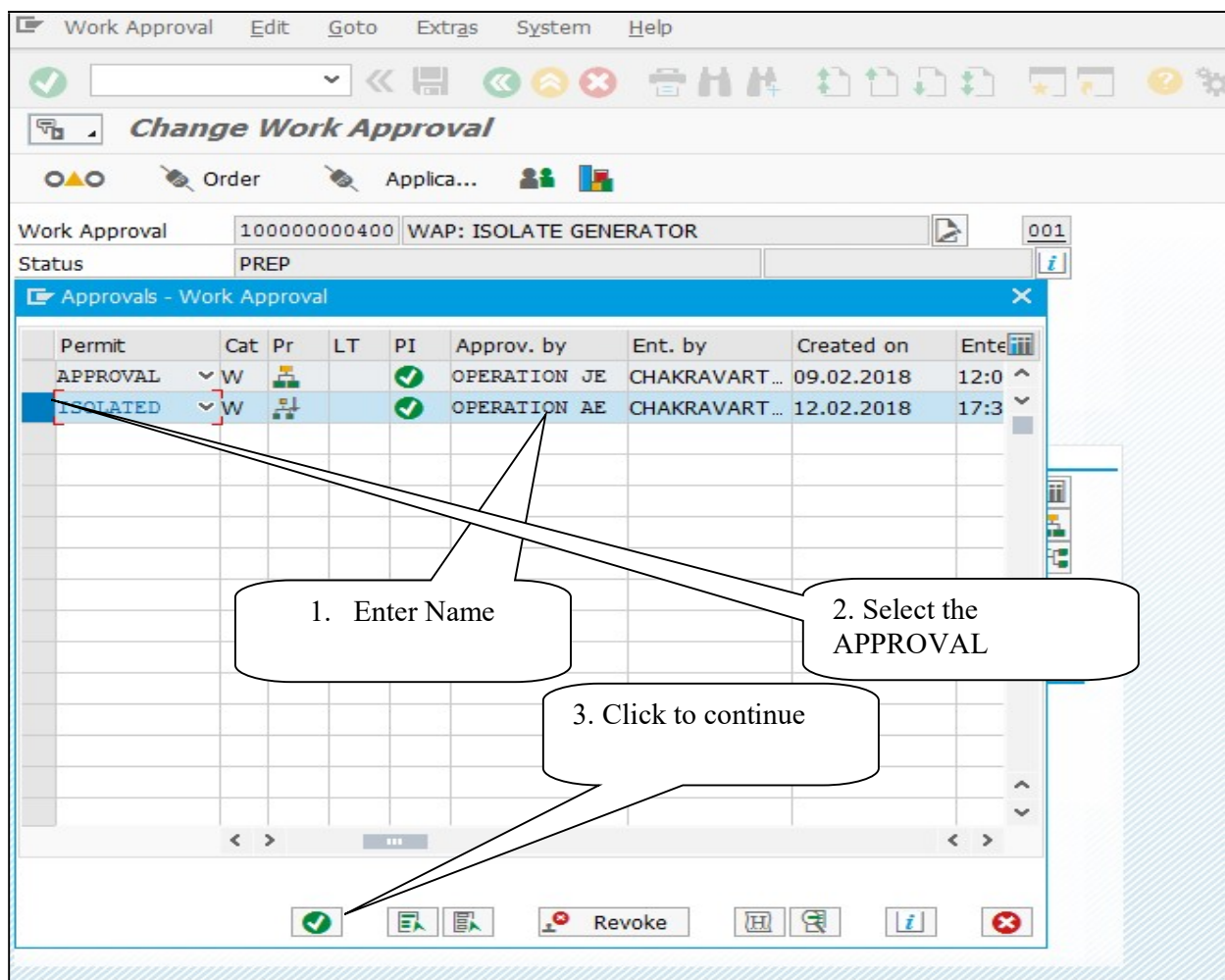
The WCD is activated with details & Operational WCD will be saved with following system message

✓ Operational WCD was saved with number 130000000402




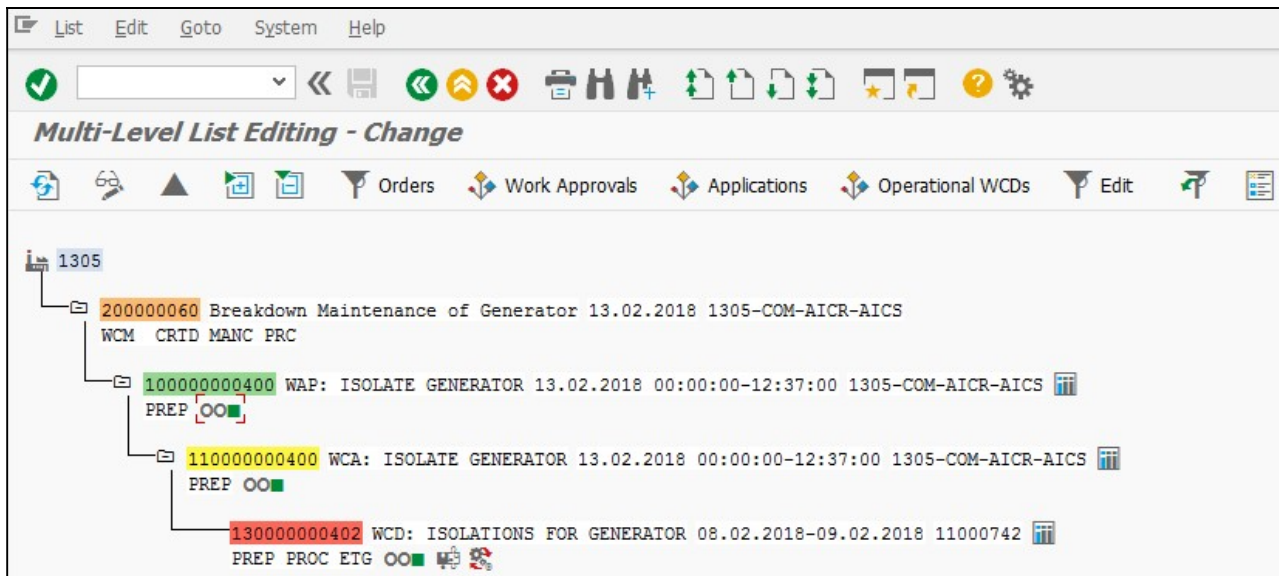
Refresh the screen and the traffic lights of WCA & Operational WCD document will turn green.

Approval screen will open, enter name in Approved by, now select the APPROVAL and click  button or press Enter key.











WA will be saved with following system message

 Work Approval was saved with number 100000000400



The screenshot shows the 'Multi-Level List Editing - Change' window. The tree structure is as follows:

- 1305
 - 2000000060 Breakdown Maintenance of Generator 13.02.2018 1305-COM-AICR-AICS
 - WCM CRID MANC PRC
 - 100000000400 WAP: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS 
 - PREP 
 - 110000000400 WCA: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS 
 - PREP 
 - 130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742 
 - PREP PROC ETG   

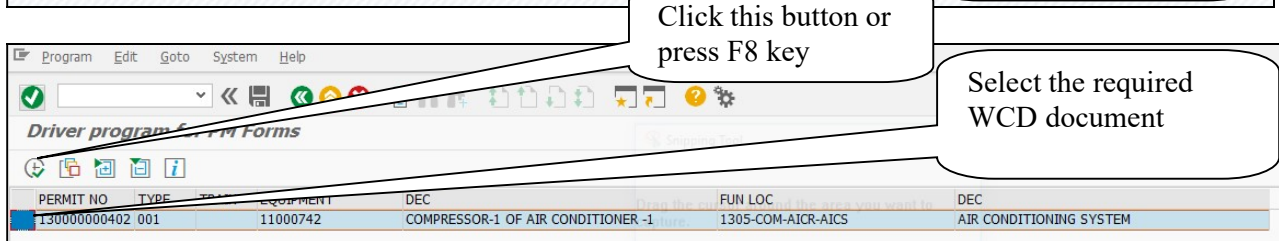
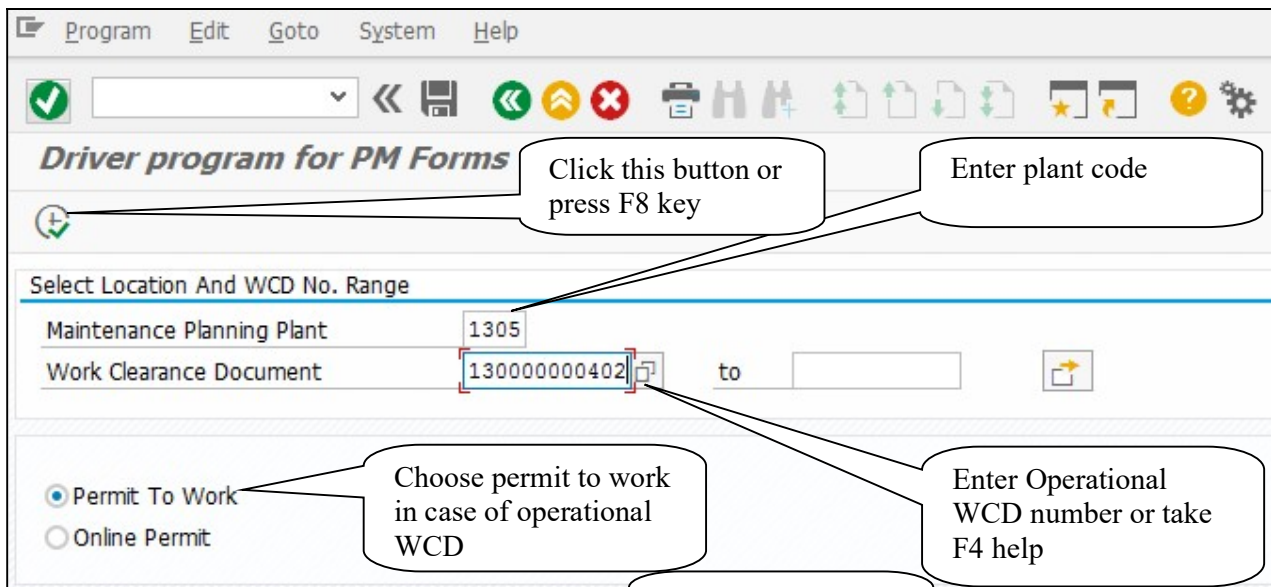
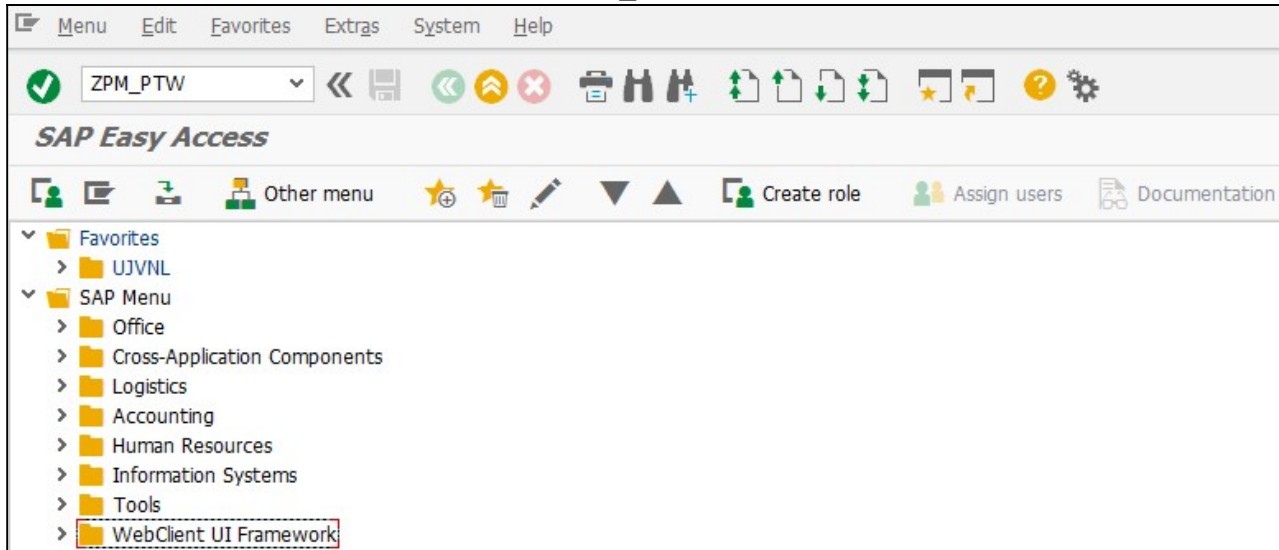


All the traffic lights become green as the final approval status flows from bottom WCM object (operational WCD) to the top WCM object (Work approval) automatically as shown above.

10 ISSUE OF PERMIT(S) FOR WORK

Since all the permits are approved, they can be now issued to maintenance by Operation dep't by printing the permits, signing and handing over to the maintenance team.

Print the PTW (Permit to work) from transaction **ZPM_PTW**




System will give the print dialog screen as shown below:

Program Edit Goto System Help

Driver program for PM Forms

Print:

Output Device: LP01  Beispieldrucker. Mit SPAD anpass

Page selection:

Spool Request

Name: SMART SFP CHAKRAVARTHY

Title:

Authorization:

Spool Control

☒ Print Now

☐ Delete After Output

☐ New Spool Request

☐ Close Spool Request

Spool Retention: 8 Day(s)

Storage Mode: 1 Print only

Number of Copies

Number: 1




☐ Group (1-1-1,2-2-2,3-3-3,...)

Cover Page Settings

SAP cover page: Do Not Print

Recipient:

Department:

 Print preview  Print 

FUN LOC
1305-COM-AICR-AICS

Default output device

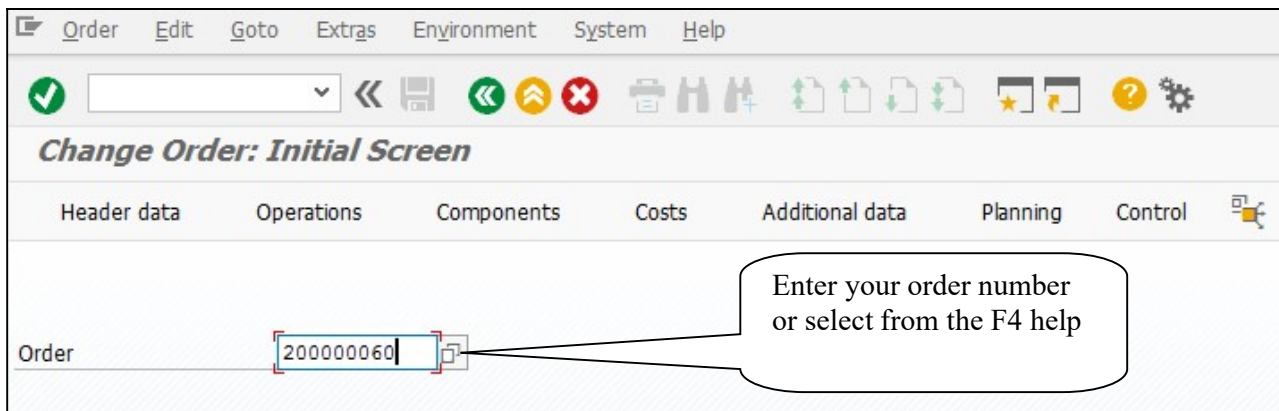
Click to preview the print form

Uttarakhand Jal Vidyut Nigam Limited, Khatima			
PERMIT TO WORK			
1.0)EQUIPMENT DETAILS:			
PERMIT NO:130000000402	EQPT CODE:11000742		
WORK ORDER NO:200000060	EQPT DESCRIPTION:COMPRESSOR-1 OF AIR		
VALID FROM:08.02.2018 00:00:00	FUNC LOCATION:1305-COM-AICR-AICS		
VALID TO:09.02.2018 00:00:00	FUNC DESCRIPTION:AIR CONDITIONING SYSTEM		
NOTIFICATION NO:200000080	PG / WORK CENTER:001/E&M_PH1		
UNIT:COM			
1.1)DESC OF WORK: Breakdown Maintenance of Generator			
2.0)EQUIPMENT ISOLATIONS:			
State safety precautions applied state points of isolation, action taken to avoid danger by draining, venting, purging, containment or dissipation of stored energy. State positions of earthen devices and caution notices applied.			
NOTE-1:FOR ISOLATION DETAILS, REFER ANNEXURE-I			
3.0)PERMIT ISSUE:			
I _____ have confirmed with the field operator that precautions in Section-2 & in Annexure-I have been applied & field operator will maintain these until PTW is cancelled. I certify precautions in Section-2 are adequate to provide safety from the system in Section-1 of this PTW			
ISSUED BY:OPERATION AE	SIGN:	DATE:12.02.2018 TIME:17:36:02	
4.0)PERMIT RECEIPT:			
I understand and accept my responsibilities for PTW and received items in Section-2.0			
RECEIVED BY:	SIGN:	DATE:	TIME:
NOTE-2:FOR PERMIT EXTENTION/SURRENDER & REISSUE DETAILS,REFER ANNEXURE-II			
5.0)PERMIT CLEARANCE:			
DESCRIPTION OF WORK DONE:			
I certify that all persons working under this PTW have been withdraw from the work area/HV apparatus & warned not to continue work/test on the plant/HV apparatus. All equipment's tools, loose material and drain earths are removed, guards & access doors refitted. State any EXCEPTIONS to above:_____ (or write Nil). I also confirm that the waste generated during the job is cleared.			
RETURNED BY:	SIGN:	DATE:	TIME:

11. RELEASE OF BREAKDOWN ORDER – BY MAINTENANCE,

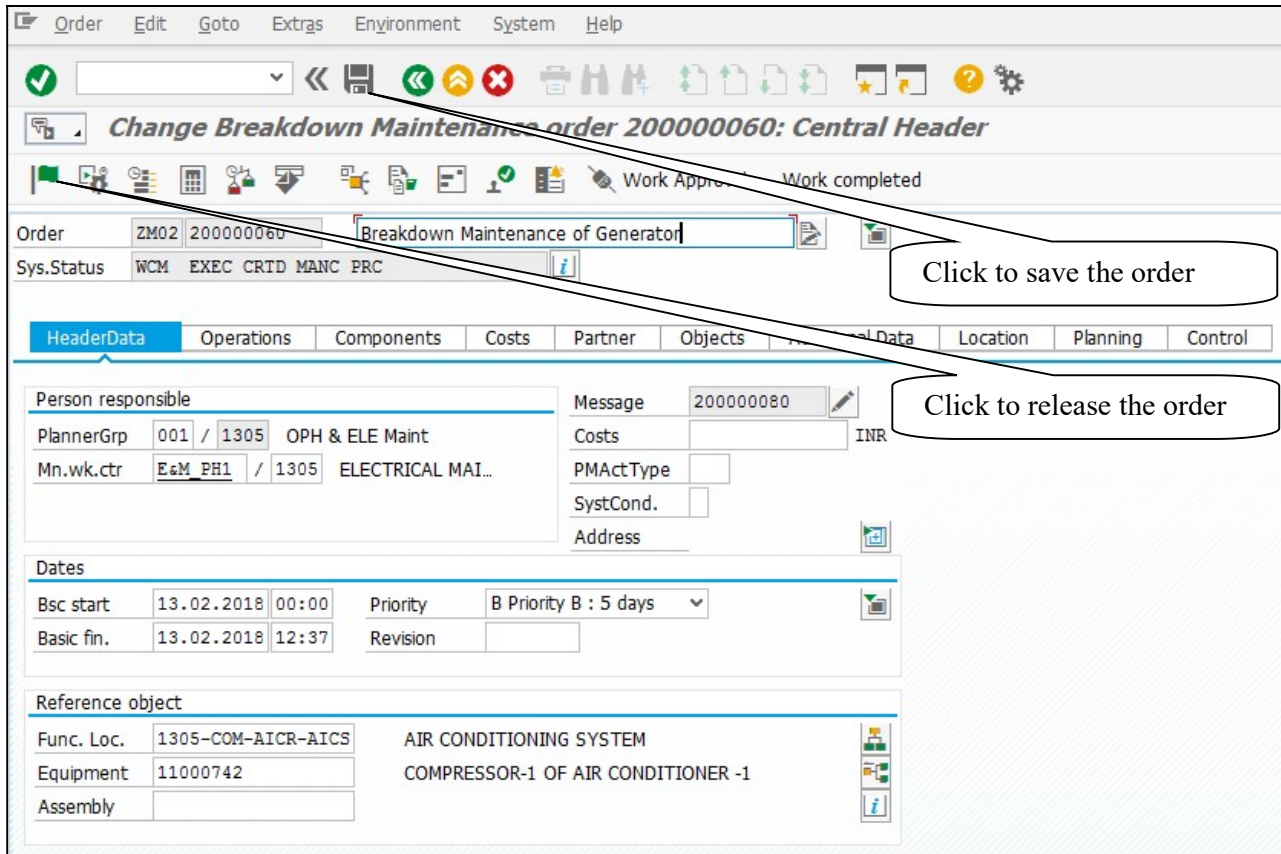
- Maintenance order needs to be released by authorized maintenance person, because only after the order release, one can withdraw materials from store against the Material Reservation no. generated by system for any stock material assigned in the order, so that work can be started at site.
- Secondly 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



The screenshot shows the SAP 'Change Order: Initial Screen' interface. At the top, there is a menu bar with 'Order', 'Edit', 'Goto', 'Extras', 'Environment', 'System', and 'Help'. Below the menu bar is a toolbar with various icons. The main area has a title 'Change Order: Initial Screen' and a tabbed interface with 'Header data', 'Operations', 'Components', 'Costs', 'Additional data', 'Planning', and 'Control'. The 'Header data' tab is active, and the 'Order' field is highlighted with a red box, containing the value '200000060'. A callout box points to this field with the text 'Enter your order number or select from the F4 help'.

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



Order: ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status: WCM EXEC CRTD MANC PRC


HeaderData | Operations | Components | Costs | Partner | Objects | Additional Data | Location | Planning | Control


Person responsible: PlannerGrp 001 / 1305 OPH & ELE Maint; Mn.wk.ctr E&M_PH1 / 1305 ELECTRICAL MAI...

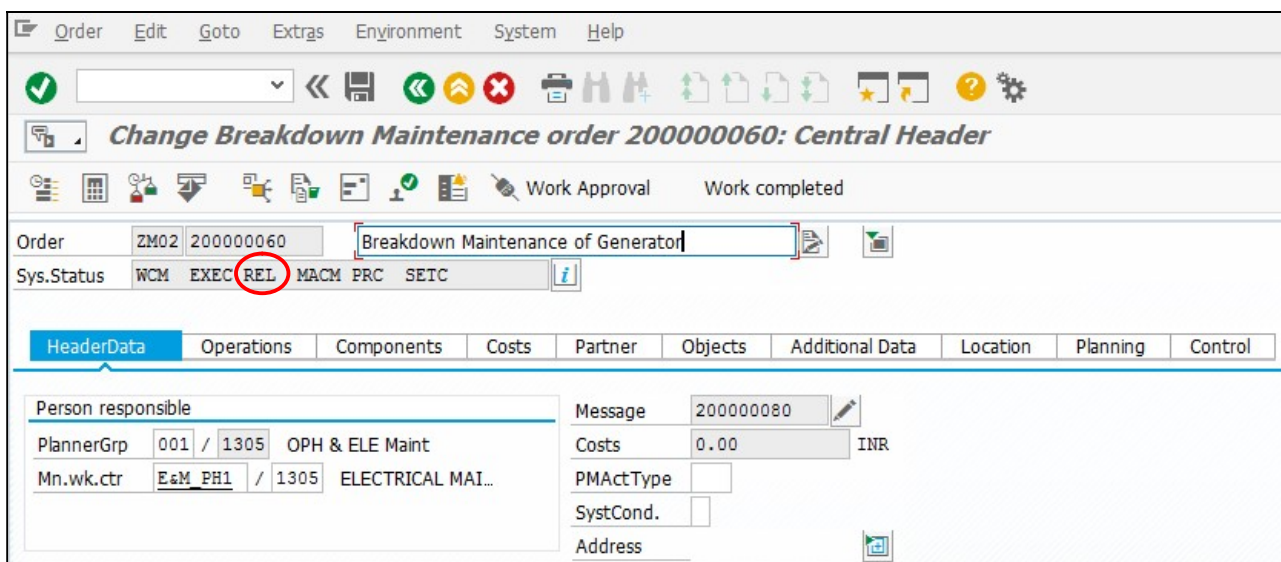
Message: 200000080; Costs: INR; PMActType; SystCond.; Address

Dates: Bsc start 13.02.2018 00:00; Basic fin. 13.02.2018 12:37; Priority B Priority B : 5 days; Revision

Reference object: Func. Loc. 1305-COM-AICR-AICS AIR CONDITIONING SYSTEM; Equipment 11000742 COMPRESSOR-1 OF AIR CONDITIONER -1; Assembly

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

You will get system message  Order 200000060 will be released after update and the order gets REL status by replacing CRTD, as shown below.




Order: ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status: WCM EXEC **REL** MACM PRC SETC

HeaderData | Operations | Components | Costs | Partner | Objects | Additional Data | Location | Planning | Control

Person responsible: PlannerGrp 001 / 1305 OPH & ELE Maint; Mn.wk.ctr E&M_PH1 / 1305 ELECTRICAL MAI...

Message: 200000080; Costs: 0.00 INR; PMActType; SystCond.; Address

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

PM- Master Data

For Internal Circulation Only

Extras Edit Goto System Help

Change Status

Order 200000060 Order Type ZM02 Planning plant 1305

Description Breakdown Maintenance of Generator

Status Business processes

Syst. Status		
X	St...	Text
<input checked="" type="checkbox"/>	BLTC	Block technical completion
<input checked="" type="checkbox"/>	WCM	Work Clearance Management
<input checked="" type="checkbox"/>	EXEC	Released for execution
<input checked="" type="checkbox"/>	REL	Released
<input checked="" type="checkbox"/>	MACM	Material committed
<input checked="" type="checkbox"/>	PRC	Pre-costed
<input checked="" type="checkbox"/>	SEIC	Settlement rule created

Status with Status Number			
X	Status	Text	No.

Status Without Status No.		
X	Status	Text

Active Status

☒ Change Docs

Status Profile



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.



Order 200000060 saved with notification 200000080

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

12. 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.

13. ISSUE OF MATERIALS FROM THE STORE – BY MM DEP'T

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

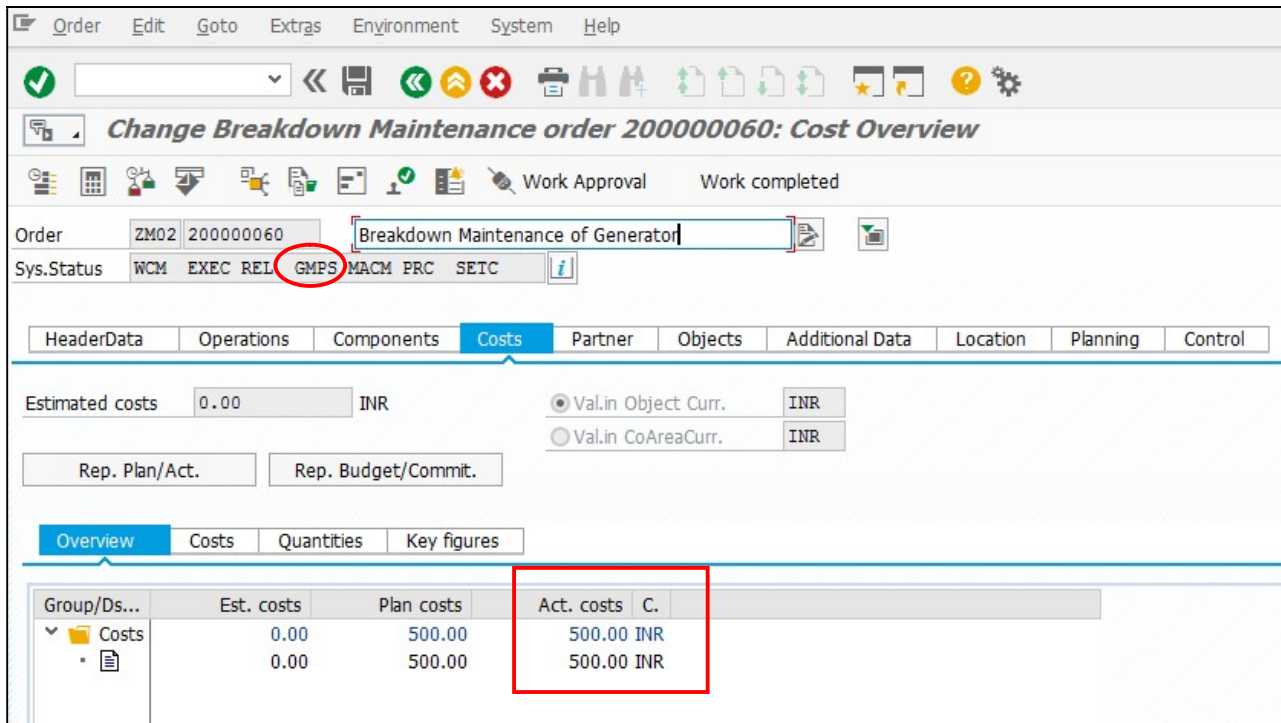
following system message

 Material document 4900000154 posted

- 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.



Order: ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status: WCM EXEC REI **GMPS** MACM PRC SETC

HeaderData | Operations | Components | **Costs** | Partner | Objects | Additional Data | Location | Planning | Control

Estimated costs: 0.00 INR

Val.in Object Curr.: INR

Val.in CoAreaCurr.: INR

Rep. Plan/Act. | Rep. Budget/Commit.

Overview | Costs | Quantities | Key figures

Group/Ds...	Est. costs	Plan costs	Act. costs	C.
Costs	0.00	500.00	500.00	INR
	0.00	500.00	500.00	INR

14. EXECUTION OF WORK AT SITE

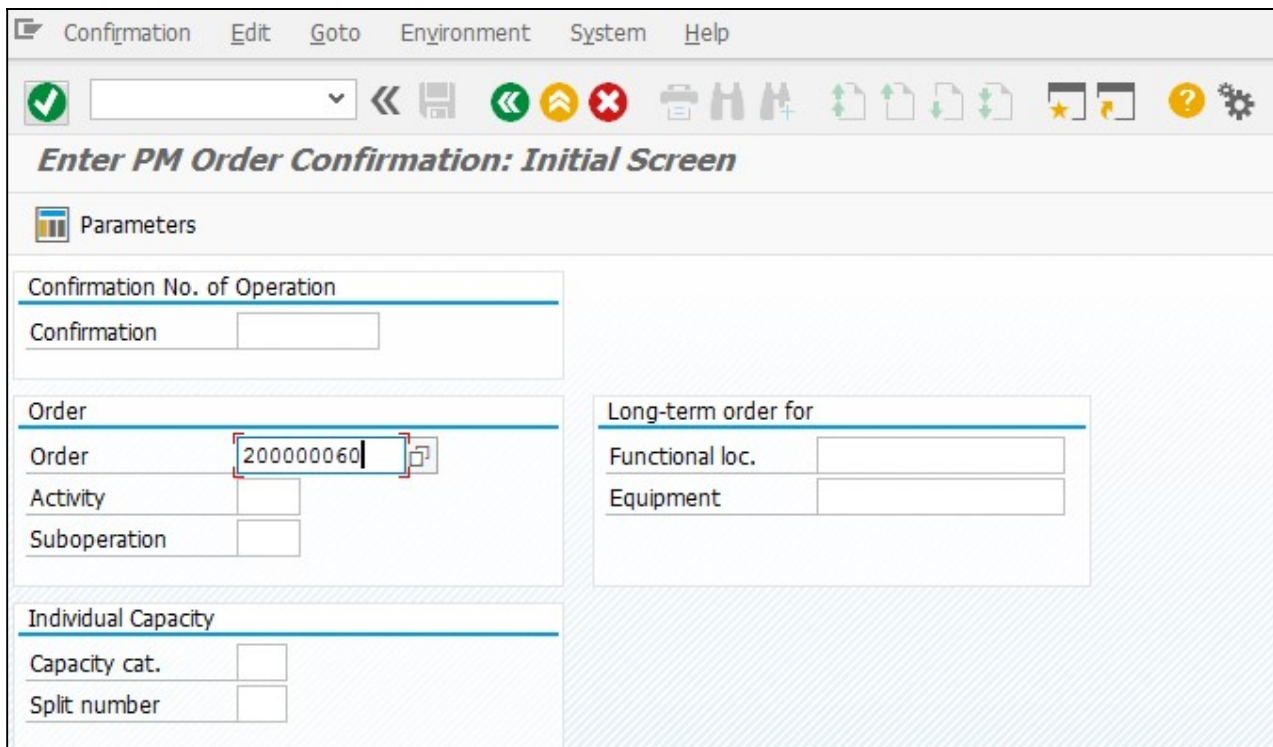
The internal manpower can execute the work at site now as per order operations, since following functions are performed.


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

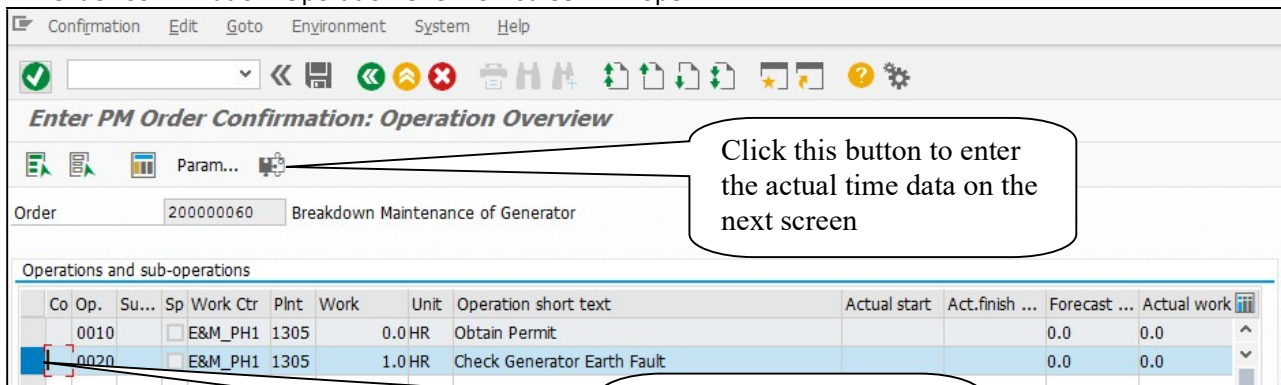
15. TIME CONFIRMATION OF ORDER OPERATIONS– BY MAINT. DEP'T

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.



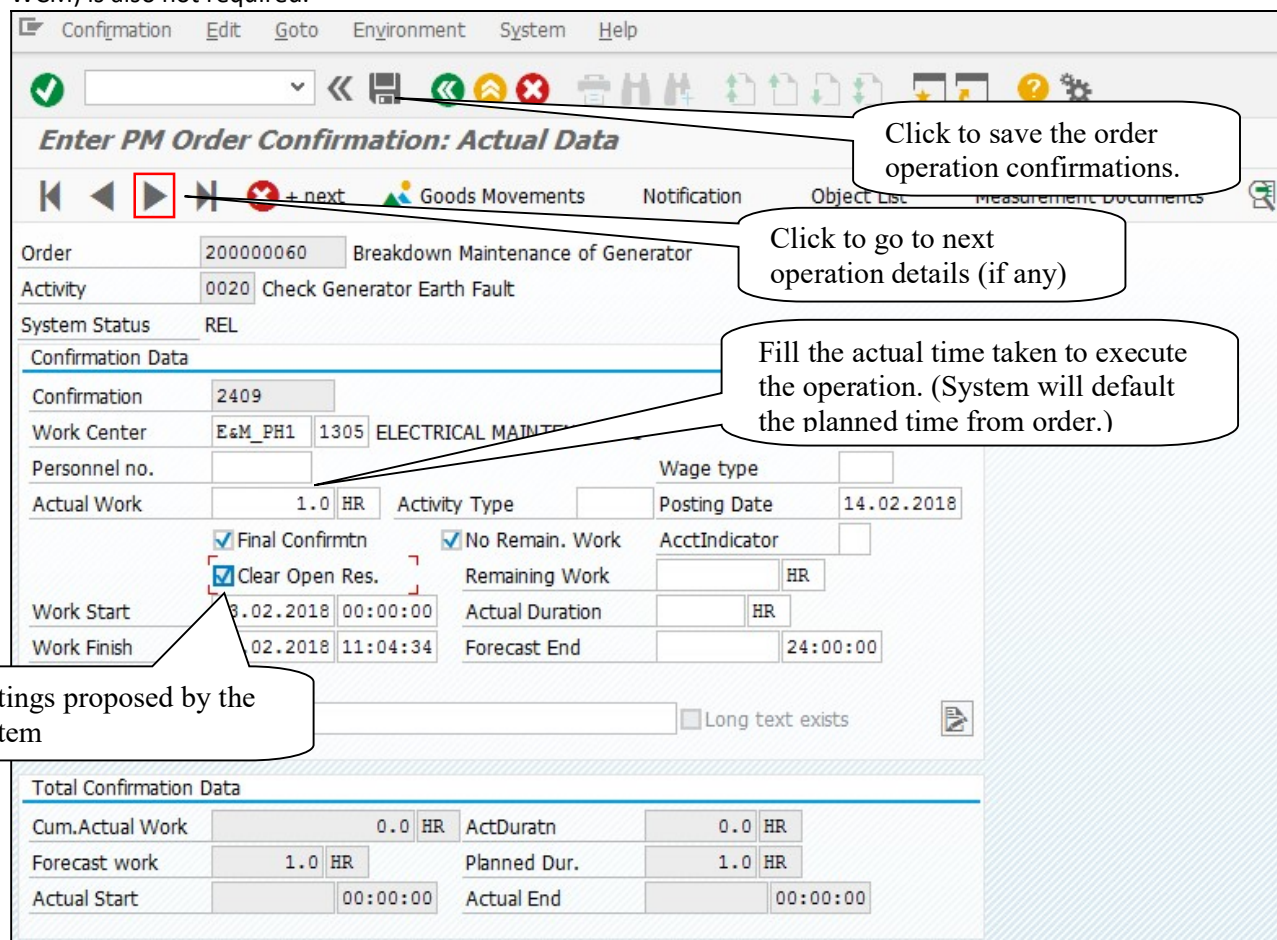
Co Op.	Su...	Sp	Work Ctr	Plnt	Work	Unit	Operation short text	Actual start	Act.finish ...	Forecast ...	Actual work
0010			E&M_PH1	1305		0.0 HR	Obtain Permit			0.0	0.0
0020			E&M_PH1	1305		1.0 HR	Check Generator Earth Fault			0.0	0.0

PM- Master Data

For Internal Circulation Only



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.



The screenshot shows the 'Enter PM Order Confirmation: Actual Data' window. Callouts include:

- Click to save the order operation confirmations.** (Points to the Save button in the toolbar)
- Click to go to next operation details (if any)** (Points to the Next button in the toolbar)
- Fill the actual time taken to execute the operation. (System will default the planned time from order.)** (Points to the 'Actual Work' field)
- Settings proposed by the system** (Points to the 'Clear Open Res.' checkbox)

Form Fields:


Order: 200000060 Breakdown Maintenance of Generator
 Activity: 0020 Check Generator Earth Fault
 System Status: REL



Confirmation Data

Confirmation: 2409
 Work Center: E&M_PH1 1305 ELECTRICAL MAINTENANCE
 Personnel no.:
 Actual Work: 1.0 HR
 Activity Type:
 Posting Date: 14.02.2018
☒ Final Confirmtn ☒ No Remain. Work
☒ Clear Open Res. Remaining Work: HR
 Work Start: 08.02.2018 00:00:00 Actual Duration: HR
 Work Finish: 02.2018 11:04:34 Forecast End: 24:00:00

Total Confirmation Data

Cum.Actual Work	0.0 HR	ActDuratn	0.0 HR
Forecast work	1.0 HR	Planned Dur.	1.0 HR
Actual Start	00:00:00	Actual End	00:00:00

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.  Number of confirmations saved for order 200000060: 1

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.

Order Edit Goto Extras Environment System Help

Change Breakdown Maintenance order 200000060: Central Header

Work Approval Work completed

Order ZM02 200000060 Breakdown Maintenance of Generator

Sys.Status WCM EXEC REL CNF GMPS MACM PRC SE...

HeaderData Operations Components Costs Partner Objects Additional Data Location Planning Control

Person responsible

PlannerGrp 001 / 1305 OPH & ELE Maint

Mn.wk.ctr E&M_PH1 / 1305 ELECTRICAL MAI...

Message 200000080

Costs 0.00 INR

PMActType

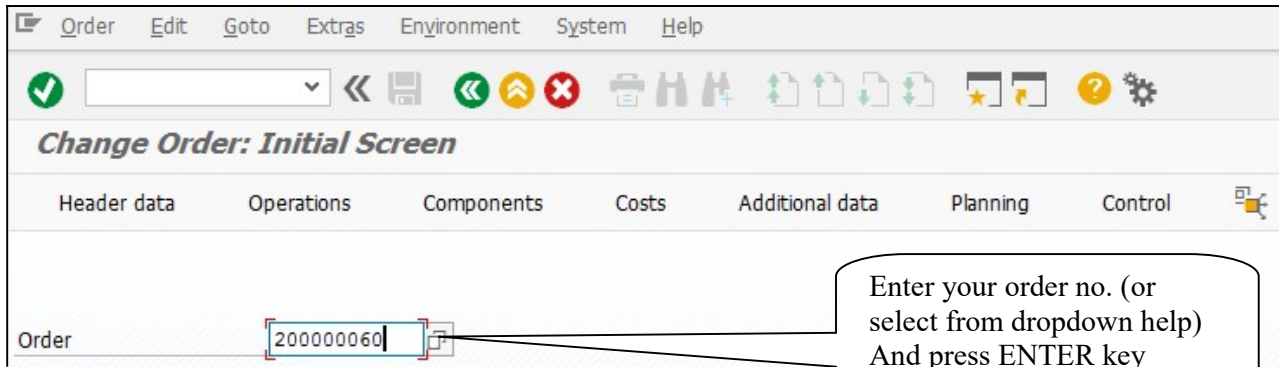
SystCond.

Address

16. WORK COMPLETION IN THE BREAKDOWN ORDER – PERMIT RETURN

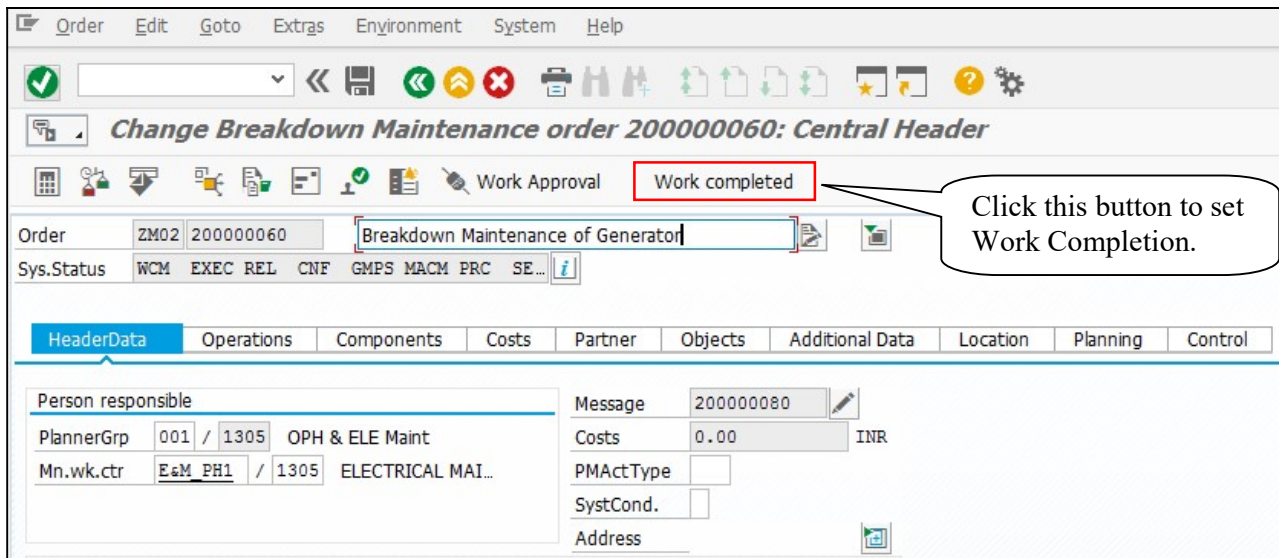
After all the order operations are completed at site and all the Permit(s) requirement is over, Maint. Person will do the Work completion of order. This is taken by system as permit(s) closing request by maintenance. Maintenance supervisor will return the Permit(s) physically also to the operation control room.

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



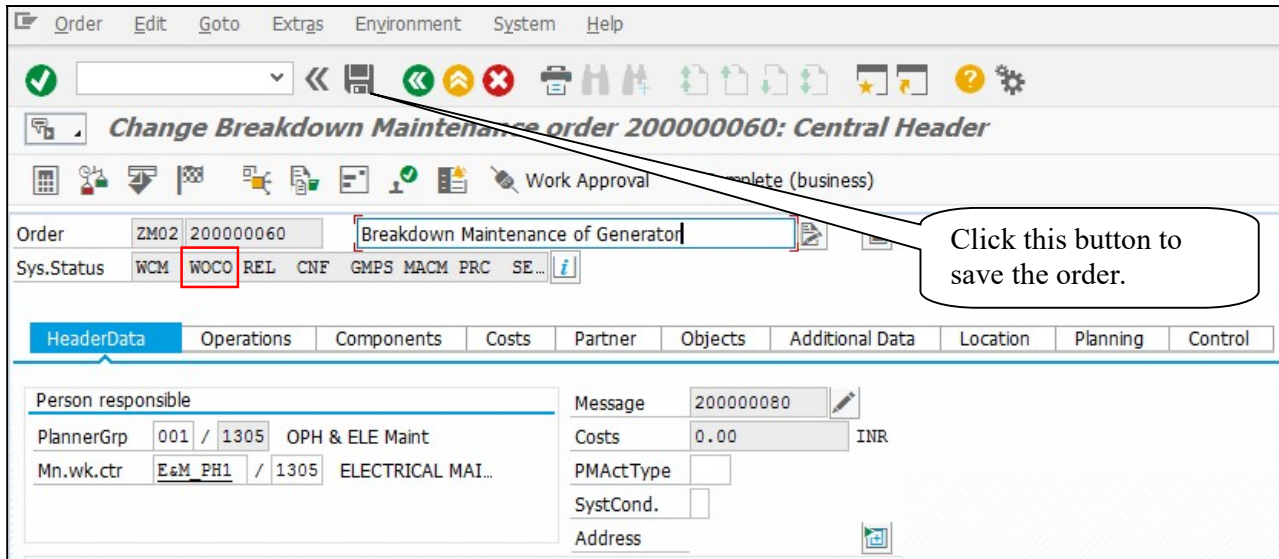
The screenshot shows the 'Change Order: Initial Screen' in SAP. The 'Order' field is highlighted with a red box and contains the value '200000060'. A callout bubble points to this field with the text: 'Enter your order no. (or select from dropdown help) And press ENTER key'.


Click **Work completed** button at application toolbar to do Work Completion of order.




The screenshot shows the 'Change Breakdown Maintenance order 200000060: Central Header' screen. The 'Work completed' button in the toolbar is highlighted with a red box. A callout bubble points to this button with the text: 'Click this button to set Work Completion.'.

System will give a message in the message bar **Work for order 200000060 has been completed**
 Now Order will get new status WOCO (Work completed), denoting permit closure request, as shown below.



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

 Order 200000060 saved with notification 200000080

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



When the WOCO status is set in order, the system closes all the higher level WCM objects (e.g. Work Approval, Work Clearance application automatically except operational WCDs (e.g. PTW) which contain isolations since isolations need to be normalized and after that WCD to be closed manually by operations.

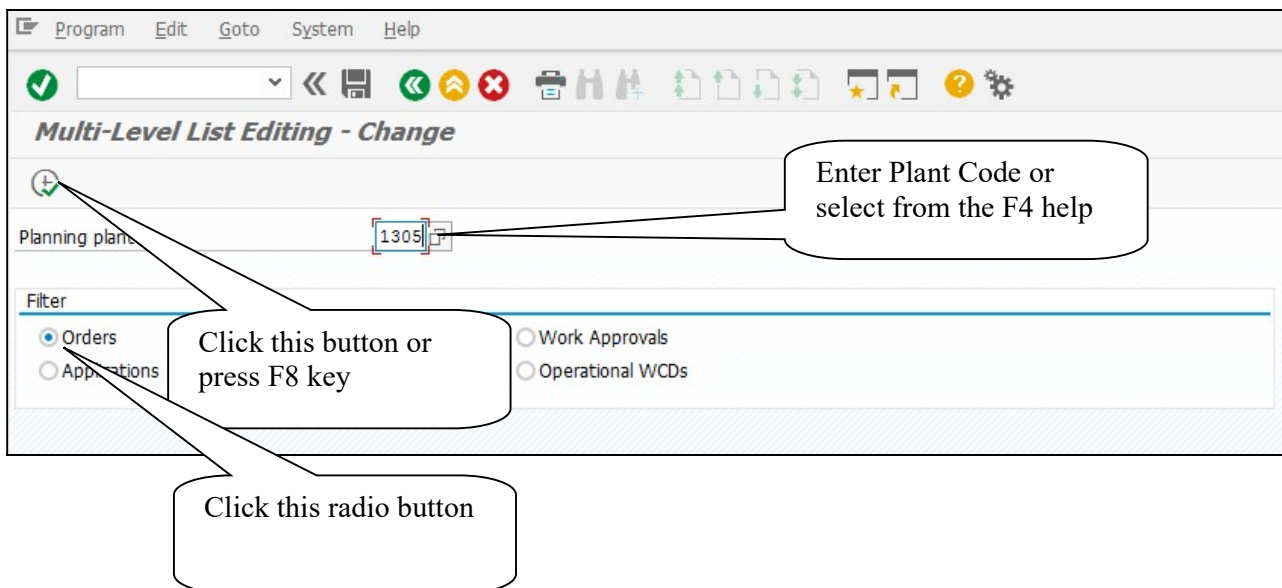


If the current permits use is over but any new permit is still to be applied, then the WOCO status should not be set, otherwise you will not be able to apply for that new permit since the Work Approval and WCA will be closed by system at the time of WOCO and you will not be able to create and prepare the new permit.

17. UNTAGGING/NORMALISATION OF ISOLATIONS – BY OPERATIONS DEP'T

After the Work Completion by maintenance and physical returning of permit to work to control room, operation dep't will do the untagging or normalisation of isolations at site which were done before issuing the permit to work.

Menu Path	SAP Menu → Logistics → Plant Maintenance → Work Clearance Management → Work Approval → List Editing → Change (Multilevel)
Transaction Code	WCLE



Program Edit Goto System Help

Display PM orders: Selection of Orders

Settlement Receivers PRT

Order status

☒ Outstanding ☒ In process ☐ Completed ☐ Historical Sel.pro Address

Order selection

Order 200000060 to

Order Type to

Functional Location to

Equipment to

Material to

Serial Number to

Addit. device data to

Notification to

Main work center to

Plant for WorkCenter to

Period 10.11.2017 to 08.02.2018

Partners

Currency

Click this button or press F8 key

Enter order number or select from the F4 help

List Edit Goto System Help

Multi-Level List Editing - Change

Orders Work Approvals Applications Operational WCDs Edit

1305

200000060 Breakdown Maintenance of Generator 13.02.2018 1305-COM-AICR-AICS

WCM WOCO REL CNF GMPS MACM PRC SEIC

100000000400 WAP: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

PREP CLSD OO

110000000400 WCA: ISOLATE GENERATOR 13.02.2018 00:00:00-12:37:00 1305-COM-AICR-AICS

PREP CLSD OO

130000000402 WCD: ISOLATIONS FOR GENERATOR 08.02.2018-09.02.2018 11000742

PREP PROC UNIT ETG OO

Click to go to the switching screen for doing untagging

Maint.
Order

Work
Approval

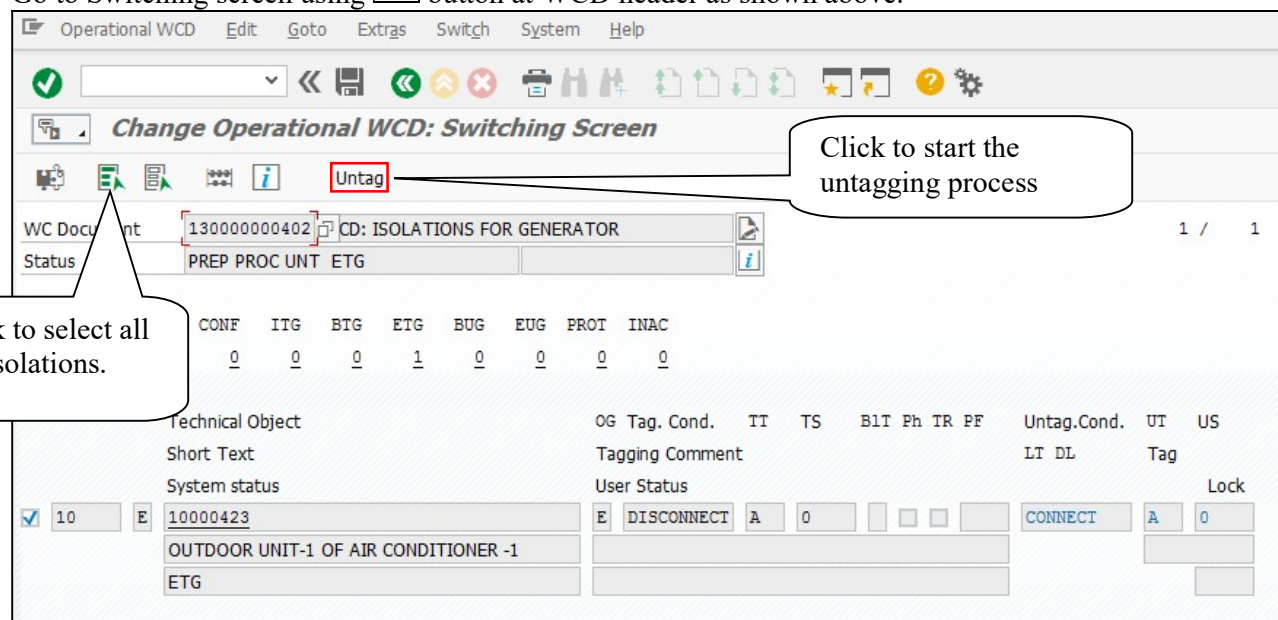
WCA



Operational
WCD



You can review each document by clicking on its number and the document will open.

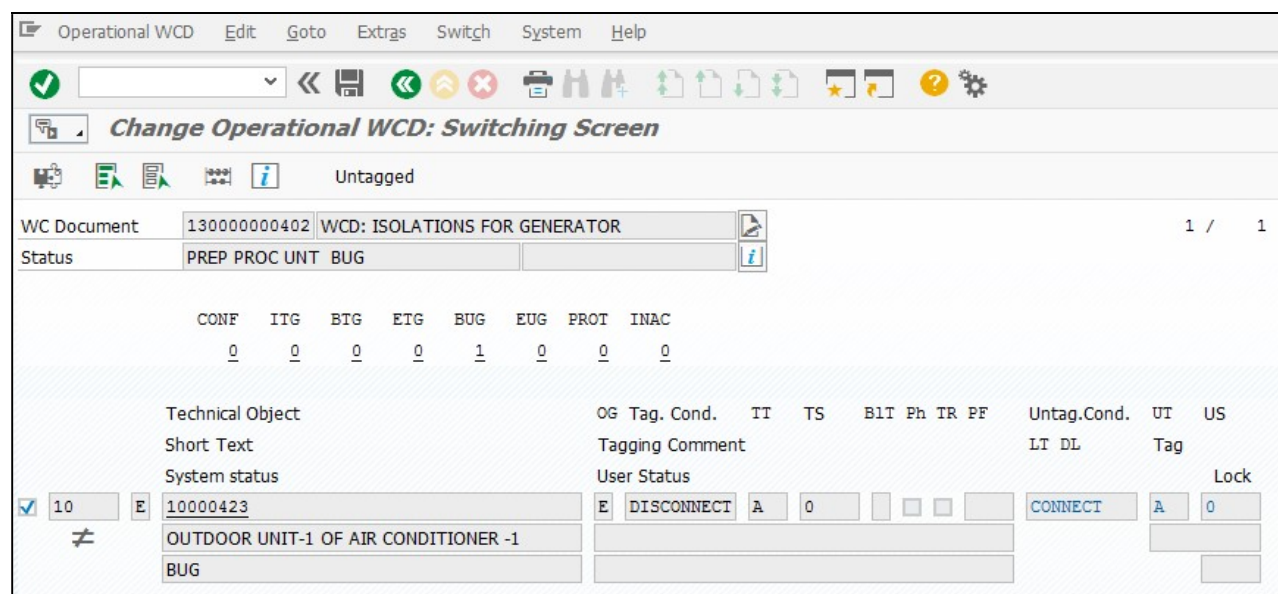
Now operation executive will start untagging (normalizing) process of all the isolations pertaining to the returned permit to work.

Go to Switching screen using  button at WCD header as shown above.



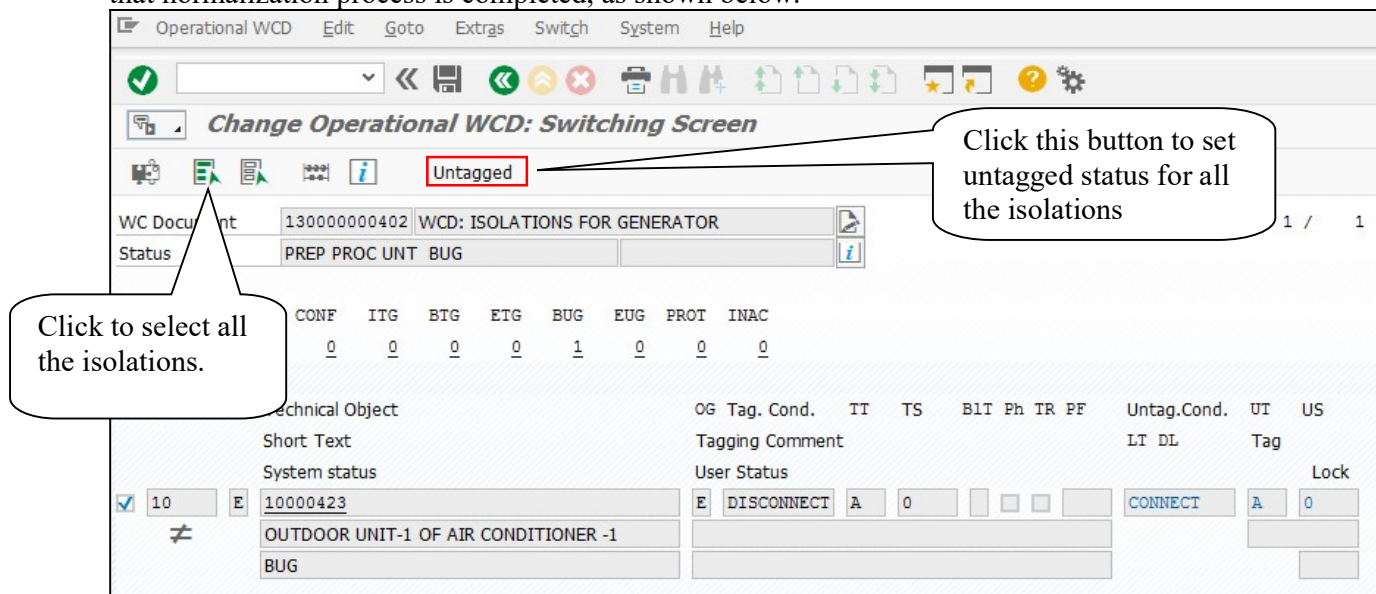

Before starting the untagging, you can do conflict check (with other permits to work) by clicking  button in the application toolbar. System will show message  Check completed successfully, if all checks found O.K.

Select all the isolation items from the switching list and press  button. The isolation items will get  symbol to show that untagging/ normalization is under process and ETG status is replaced by the BUG status as shown below.



The technician responsible will perform normalization of all the isolations in the field as per the normalizations handed over to him by operation executive.

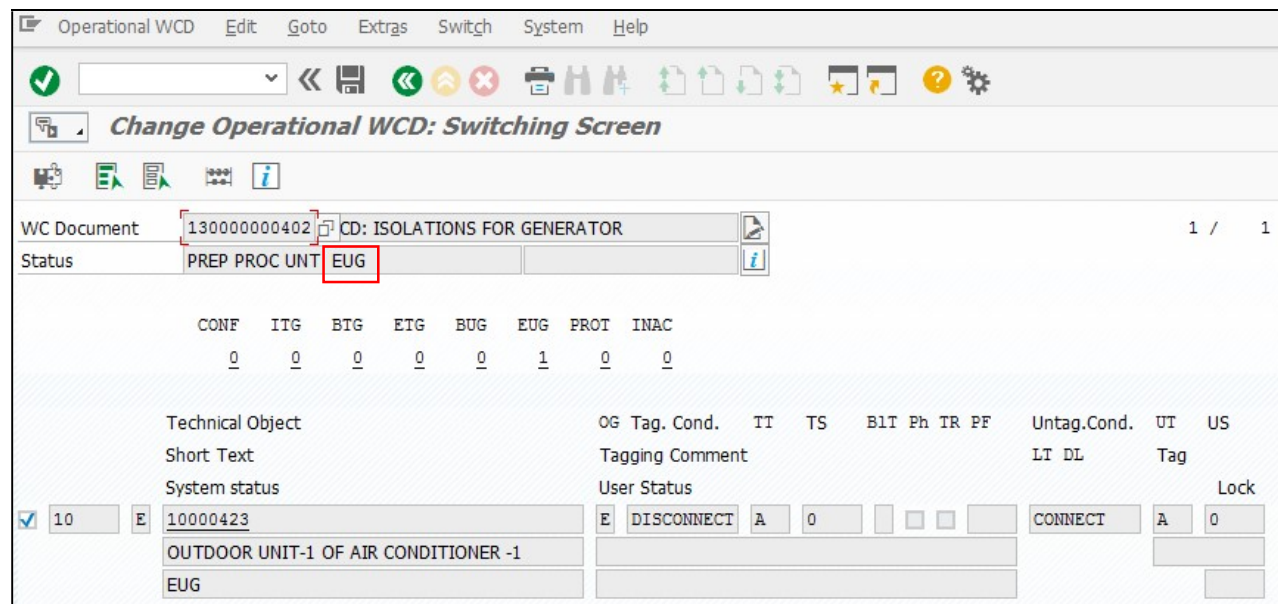
Now the Operation executive will select all the isolation items and press **Untagged** button for indicating that normalization process is completed, as shown below.



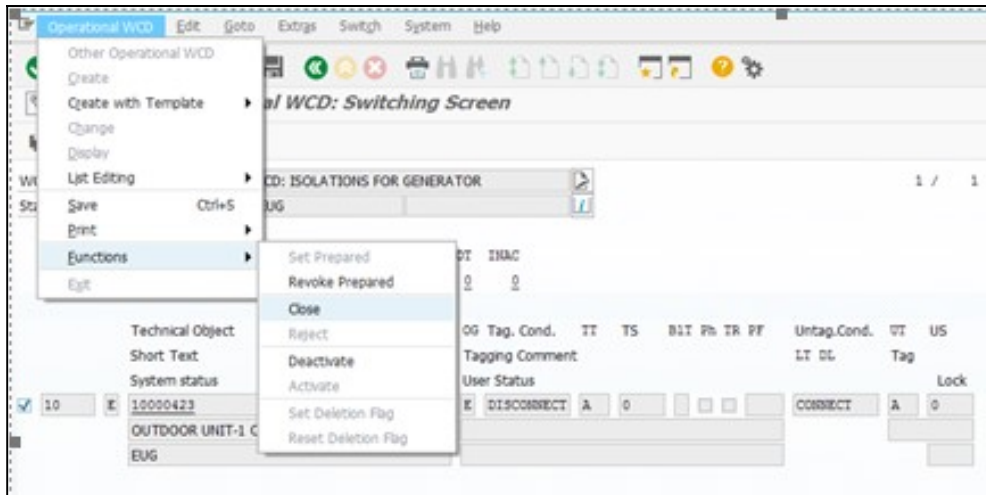
Click to select all the isolations.

Click this button to set untagged status for all the isolations

The system will give message: **Operational WCD was saved with number 130000000402** and BUG status is replaced by the EUG (untagged) status as shown below.



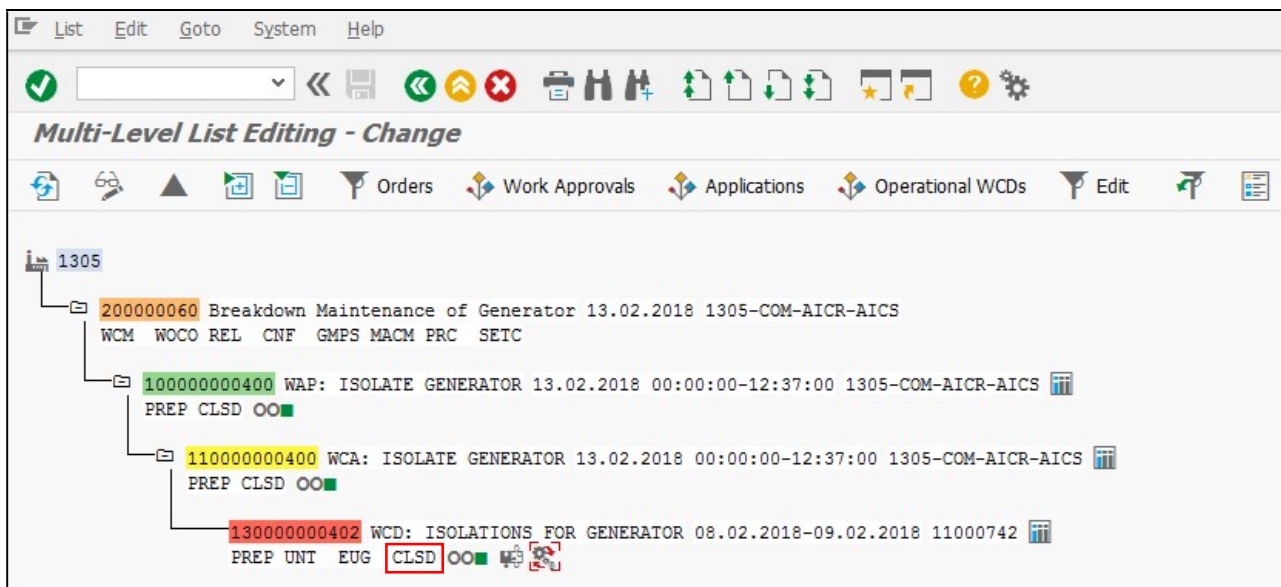
Now Operational WCD can be closed by following the menu path as shown below:
Operational WCD → Functions → Close



The Operational WCD is saved by the system automatically at this action with following message

✓ Operational WCD was saved with number 130000000402

And you will be taken back to the originating screen shown below.



This completes the Permit to work closing process by operations dep't.
The PROC status of operational WCD is replaced by CLSD (Closed) as shown above.

18. NOTIFICATION:TECHNICAL COMPLETION – BY MAINTENANCE DEP'T

Please refer General Maintenance user manual to complete this step.

19. MAINTENANCE ORDER: TECHNICAL COMPLETION – BY MAINTENANCE DEP'T

Please refer General Maintenance user manual to complete this step.

20. COST SETTLEMENT0020OF THE ORDER – BY FINANCE DEP'T (AT MONTH END)

Please refer General Maintenance user manual to complete this step.

21. 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.

22. APPENDIX

22.1 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

22.2 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