Honeywell

Use Documentation Tool for UCN

L53690
UCN

TotalPlant®

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Figures and Tables

Acronyms

AM ..... Application Manager
APM ..... Advanced Process Manager
DT ..... Documentation Tool
EB ..... Exception Build
HG ..... Hiway Gateway
I/O ..... Input/Output
LM ..... Logic Manager
PID ..... Proportional plus Integral plus Derivative
PM ..... Process Manager
UCN ..... Universal Control Network
US ..... Universal Station

References

Publication Title	Publication Number	Binder Title	Binder Number
For R5xx :			
Documentation Tool	*SW11-509*	Implementation/Startup & Reconfiguration - 1	*TPS 3030-1*
For R4xx :			

Introduction

Overview

Purpose

The purpose of this course module is to explore ways in which the **TotalPlant** Solution (TPS) system can be used to help you document and analyze current conditions on your UCN. A brief overview of the Documentation Tool (Doc Tool) will be presented first, followed by application examples for the UCN.

Objective

Given the *Documentation Tool* manual and an established database, use the Documentation Tool to do the following:

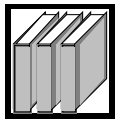
- manipulate the results of a Find Names search,
- obtain the configuration of the Failure Option (FAILOPT) for a UCN node's analog output points,
- identify the configured User IDs (USERID) in a UCN node,
- correlate CL object file names to sequence program names,
- verify that each field output is addressed by only one control point, and
- identify the disabled and inhibited alarms for UCN node.

Sample Test Items

This course module's Criterion Test includes the following items:

1. Describe three ways in which Doc Tool can be used to document the UCN. Describe scenarios that you could use in the future to meet your own documentation needs.

2. Use the Doc Tool to document one of the scenarios described above.



REFERENCE—Because the purpose of this course module is to use Doc Tool for the UCN, it does not include specific step by step instructions on how to use Doc Tool.

The course module provides references to the *Documentation Tool* manual. The reading is optional, but suggested if you are not familiar with Doc Tool.

Doc Tool Review

Doc Tool Prerequisites

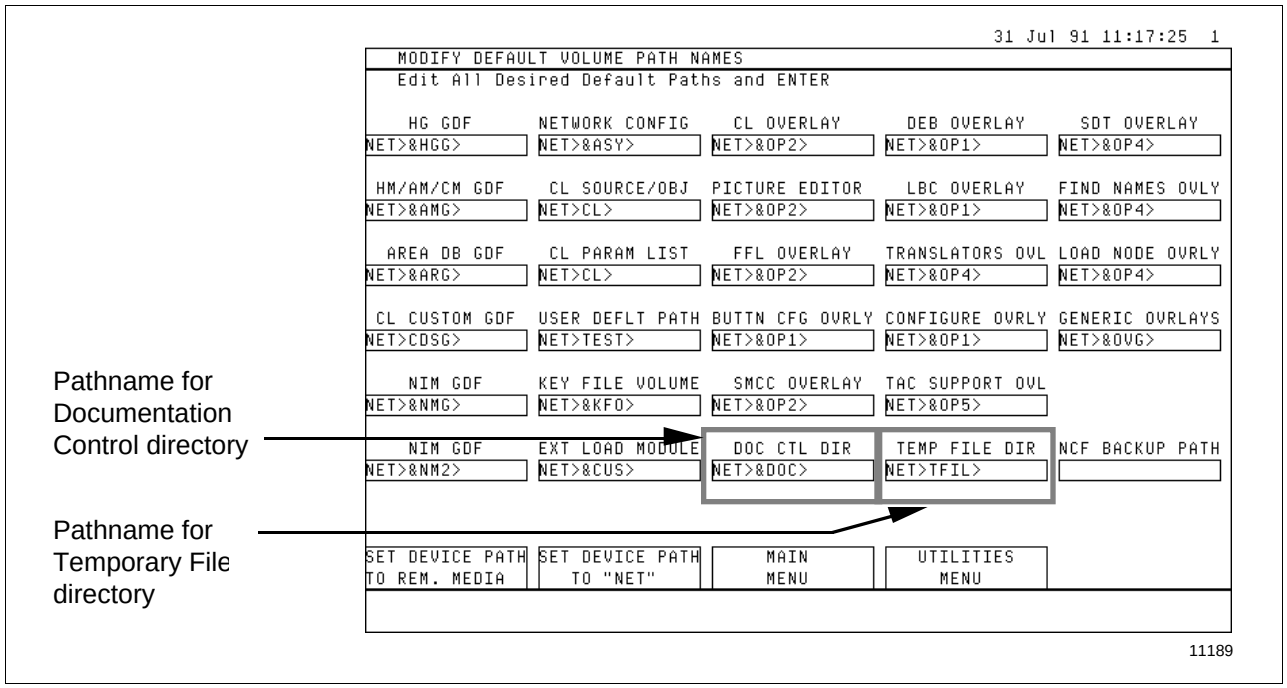
Prerequisites

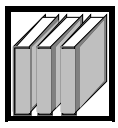
Before using Doc Tool for the first time, the directories and files used by Doc Tool must be in place and accessible from your Universal Station. The following prerequisites must be met before using the Doc Tool:

1. Create a Documentation Control directory (&DOC),
2. Create a Temporary File directory (&TFIL),
3. Set the appropriate pathnames to your US (see Figure 1), and
4. Create the Documentation Control file using
   Doc Tool target: DEFINE CNTRL FILES

Figure 2 shows the locations of the directory pathnames on the volume paths display of a US.

Figure 1 Doc Tool Directories





REFERENCE—The following section details the procedure for setting up the Doc Tool:

Section 1.3—Before Using the Documentation Tool
Documentation Tool manual
Binder TPS 3030-1

Doc Tool Functions

Retrieving data

Data can be retrieved from Doc Tool by using one of the following commands:

Command	Data retrieved and source	Subcommands
QUERY	Retrieves user-created entity data (not system or "$" entities) from the on-line databases residing in • LCN nodes, • Process-connected devices, or • HM journals.	Operations under QUERY: • Build Creates and executes a query, which can be saved to a file and printed. • Select Pre-built Selects a previously built query. • Delete Pre-built Deletes a previously built query.
OPEN	Retrieves a file from • History Module or • Removeable media.	

Manipulating data

Once retrieved, data can be displayed or manipulated by using commands within Doc Tool to create more customized and useful information.

Command	Description
FIND	Searches the displayed data for the next occurrence of a specified pattern. If fields have been defined, the search can be performed on a specific field.
FILTER	Displays only the lines of data that match a specified condition while the Filter State is ON . The original data is redisplayed once the Filter State is set to OFF . (NOTE: Fields must be defined in order to use the Filter command)
SORT	Arranges records within the displayed data in *ascending* order while the Sort State is ON . The data can be sorted by record, or by one or more fields. Data is redisplayed in its original order once the Sort State is set to OFF .

Use of Fields

Fields are columns of data displayed in an open file. Fields are identified by a name shown at the top of the column and are bounded by lines. The user can create fields by using the CTL/F10 (DEFINE FIELD) command.

Fields are necessary when using the following Doc Tool commands:

- Find
- Filter
- Sort

Continued on next page

Doc Tool Functions, Continued

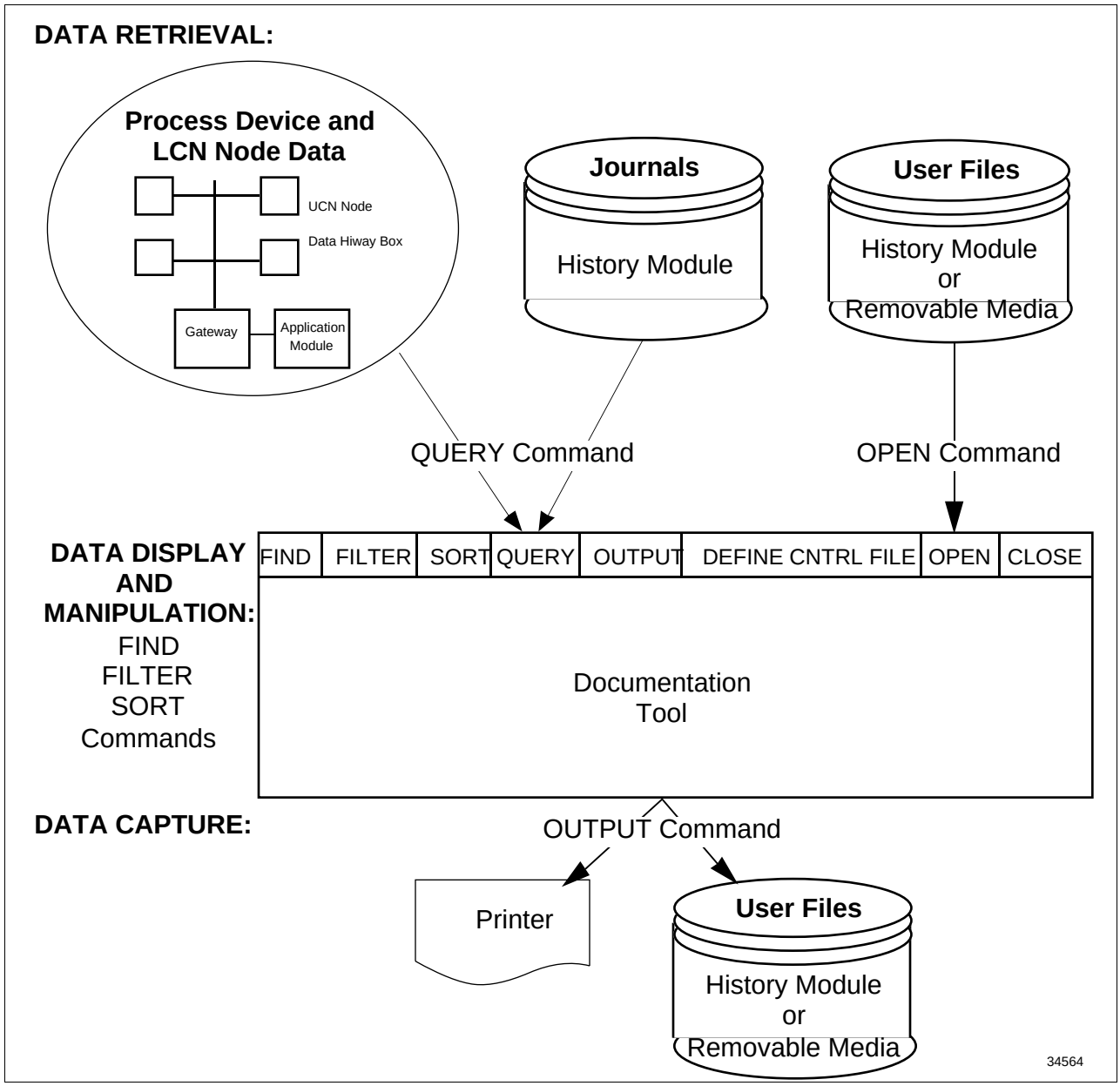
Outputting data

After data has been retrieved and manipulated into a useful format that you would like to save, it can be output to either a printer or a file by using the OUTPUT command.

Functional diagram

Figure 2 illustrates the Doc Tool targets used to retrieve, manipulate, and output data.

Figure 2 Documentation Tool Conceptual Diagram



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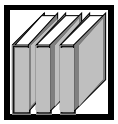

REFERENCE—The following sections of the Doc Tool manual provide detailed procedures:

Section 1.3—Before Using the Documentation Tool
Section 2.9—Opening Files
Section 2.16—Building, Saving, and Executing a Query
Section 2.17—Query Journal Events
Section 2.14—Outputting Files
Section 2.15—Define, Changing, and Deleting Fields

Documentation Tool manual
Binder TPS 2032

UCN Documentation Needs

UCN Examples and Solutions

Description

There are numerous ways in which Doc Tool can be used to help document the UCN database and current conditions on the UCN. Following are a few practical examples of documentation needs and problems that could be addressed by using Doc Tool.

Example 1

Definition

Schematics at your site have been designed around the value of the state descriptor text on flag, digital composite, digital input, and device control points. You have set up standard values for state descriptor text; however, if an error was made in entering in the text, the schematics will not function as designed. (This situation would apply to CL as well) You need a convenient way to verify that the state descriptor text is correct.

Possible solution

Queries can be created in Doc Tool to list flag, digital composite, digital input, and device control points and their corresponding state descriptor text (STATETXT0-2). The resulting lists can then be sorted by STATETXT. Any STATETXT values that are not standard will be easily identifiable.

Example 2

Definition

You need to build an analog output point. You could identify an available slot by selecting each analog output IOP from the APM status display and invoking a Slot Summary; however, this could take some time. You want to find a method to quickly identify a spare AO slot in your APM.

Possible solution

A Doc Tool query can be designed to list **all** the analog output points in the APM, along with their modules (MODNUM) and slots (SLOTNUM). This list could then be sorted by module and slot in order to identify open slots.

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Example 3

Definition

Your UCN is experiencing overruns. You have examined the normal things such as cable health and peer load. You know that you have disabled alarming (ALENBST = DISABLE) for some digital input points. Disabling alarms for these points will prevent the alarms from being displayed; however, they continue to be reported to the LCN level through the NIM because disabled alarms are journaled on the HM. If these are "chattering" alarms, they may be affecting communications on your UCN. You would like to generate a list of digital input points that currently have alarms disabled.

Possible solution

You can use Doc Tool to create a query that will list all digital inputs that have their ALENBST = DISABLE on your UCN. You could then use this list to determine which points need to retain their disable status and which points could possibly have their ALENBST set to INHIBIT rather than DISABLE. In addition to ALENBST, it may also be helpful to list the DLYTIME for each point, in case these values need to be adjusted to reduce the possibility of a chattering alarm.

Lab Exercises

Overview

Purpose

The purpose of the following labs is to give you practice in using Doc Tool for the UCN. You must perform the first lab in order to setup for a Doc Tool work session. You should then review the remaining labs and select those that will be most useful to you.

While the purpose of Documentation Tool is to aid in system documentation, in this lab exercise Documentation Tool is used as a technical support tool. Some examples follow that illustrate several approaches, although you may find variations that work better for you.

Prerequisites

Some prior experience using Documentation Tool is recommended.

Rather than provide step by step procedures, the lab exercise gives a broad outline of a solution approach.

To begin

To begin, obtain a “blank” cartridge from your course manager.

Doc Tool Setup

Prepare media

☐

Create two directories (&DOC and TFIL) on your student cartridge for use by the Doc Tool.

Set pathnames

☐

Call up the Modify Default Volume Pathnames display on your US (SP from the Command Processor).

Change the two Doc Tool pathnames to “point” to your disk drive:

- DOC CTL DIR = $Fn>&DOC
- TEMP FILE DIR = $Fn>TFIL

Create control file

☐

Access the Doc Tool (DT from the Command Processor).

Execute the command that creates a query control file:

DEFINE CNTRL FILES

[ENTER]

Lab 1—Sort Find Names Output

Introduction

In this lab, you will use a file you created earlier in the Find Names lab and stored on your student cartridge

(NOTE: The Find Names lab in in course module L5989, Use Find Names for UCN, lab exercise 1.)

You will open the file in the Doc Tool, create fields in the file, and then sort and filter the data into a more useful format.

Instructions

This lab provides general steps only.

Step	Action
1	In Doc Tool, read in the file you created in the Find Names lab on your cartridge. ($Fn>S###>LAB1.XX) This file is a list of the points built on your UCN.
2	Create fields for the file that allow you to sort and filter the data. You might want to use the column headings of the Find Names output for Field names.
3	Filter out the MEDIA field. This will remove the headers from the Find Names output, making it easier to sort and filter data.
4	Sort the data by ENTITY first and SLOT second.
5	You now have an alphabetical listing of all points that have been built on your UCN.
6	Save this data by outputting it to a file on your cartridge. ($Fn>WORK>DTLAB9.XX)

End of lab 1

Lab 2—Find FAILOPT

Introduction

In this lab exercise, you will identify the configured fail options, FAILOPT, for HPM, APM, or PM digital output or analog output IOPs.

FAILOPT is important to check, for example, whenever the HPMM, APMM, or PMM is “disconnected” from output IOPs. This would be true if the HPM or APM were running the I/O Simulator personality.

Instructions

Step	Action
1	From the Documentation Tool display, perform the following: • Perform a node query for analog output and digital output IOPs. • Parameter value to show: FAILOPT • Select DIG OUT and ANL OUT for resource/entity types. • Note that for output IOPs that have data points (tagnames) built against the output IOP, FAILOPT is returned. Unless a data point (tagname) is built against the output IOP, FAILOPT will not be returned. The next step shows another approach to identifying FAILOPT configurations.
2	To identify FAILOPT configurations, • From the Engineering Main Menu, select the BUILDER COMMANDS target. • In the Data Entity Builder, select the PRINT ENTITIES target. • Select the PRINT SYSTEM ENTITY target. • Move the cursor to the selection list port [ ] and enter the system entity for your APM. For example, enter $NM01B07. • Move the cursor to the print or destination port [ ] , and enter a file name. For example, NET>S###>FAILOPT.XX.
3	Return to Documentation Tool and open the file FAILOPT.XX. • Helpful hint: To line up your field definitions, page forward to a display that shows an IOP parameter FAILOPT. Position the cursor so that the first field boundary is after FAILOPT(#). • Define the first field, called OPTION. This field is used to filter out the parameters FAILOPT(#). • Define the second field, called VALUES. This field is used to filter out configured values AO and DO.

Continued on next page

Lab 2—Find FAILOPT, Continued

Instructions, continued

Step	Action
4	Filter out the configured fail options. • For conditions, you can use the following: OPTION=FAILOPT?* OR VALUES = *O Result: you should see the IOMTYPE number and output board type (AO or DO) followed by its configured FAILOPT of HOLD or UNPOWER. For example, your results should be similar to the following: IOMTYPE(5) = AO FAILOPT(5) = HOLD

End of lab 2

Lab 3—Find USERID

Introduction

In this scenario, the requirement is to identify the configured USERIDs. The USERID parameter is often used by CL programs to determine which program can use resources in a process.

USERID has the following characteristics:

- When USERID is all dashes, a program can change the USERID value.
- When USERID is all blanks, an operator can change the USERID value.
- When USERID is all text, a program "knows" another program is controlling the data point.

Instructions

Step	Action
1	Perform an APM node query to return USERID. Note the following: • query an APM • query on the lab's correct logical UCN • parameter to show is USERID • select ALL for point types.
2	After your query results are returned, request a sort on USERID. This results in sorting USERID by blanks, dashes, and text.

End of lab 3

Lab 4—Find STSMSG

Introduction

In this example, the requirement is to identify the configured status message text. This parameter is often used in the HPM or APM to indicate to the operator the current status of a process.

Instructions

Step	Action
1	Perform an HPM or APM node query to return STSMSG. Note the following: • query an HPM or APM • query on the lab's correct logical UCN • parameter to show is STSMSG • select ALL for point types.

End of lab 4

Lab 5—Correlate CL Object File to Program Name

Introduction

Normally CL programs are well documented. Assume that the requirement is to identify the programs represented by the object codes on &E##.

CL object code for the HPM, APM, and PM resides on &E##, where ## is the process network number.

The following approach shows a way to correlate .PO (PM) or .NO (HPM and APM) object code files to program names in the event documentation is out of date or incorrect.

Instructions

Step	Action
1	• Command a Data Out to a file. For example: DO NET>S###>OBJECTS.XX, where ### is your partition. • List your files. For example: LS NET>&E##>*.PO or .NO, where ## is the UCN network number. • Perform another Data Out after the object codes are written to your file. For example: DO.
2	Return to Documentation Tool, open your OBJECTS.XX file. An object program file, UBBSSLLL.PO or .NO, has the following syntax, where • U is the UCN (network) number • BB is the UCN node number • SS is the node's process module sequence slot number • LLL is the NIM library index number • .PO indicates CL/PM object .NO indicates CL/APM or CL/HPM object Define fields for the following: • PATH, a string field for pathnames • U, a number field for the network number • BB, a number field for the PM node number • SS, a number field for the process module sequence slot number • LLL, a number field for the Library index number Example field definition result **PATH** **U** **BB** **SS** **LLL** NET &E01 1 07 09 998 .PO C 1/16/94 NET &E01 1 03 09 996 .NO C 2/16/96 Note: Defining narrow fields may require some practice if you are new to Documentation Tool, but you will see later that this eases your filtering and sorting tasks.

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Lab 5—Correlate CL Object File to Program Name, Continued

Instructions, continued

Step	Action
3	Filter your object code names by • UCN node (box) number Example condition: BB = 07, to filter out APM 7's object code files.
4	You now have the node's object code files separated in fields that you can conveniently sort. First, sort your object code names by • library index number, LLL Output the sort results to a file, LLLNAME.XX, without overwriting field definitions.
5	Next, sort your object code names by • slot number, SS Output the sort results to a file, SSNAME.XX, without overwriting field definitions.
6	Next, retrieve the program names so you can identify the sequence names of the .PO object code files. To locate program name configurations, • From the Engineering Main Menu, select the BUILDER COMMANDS target. • In the Data Entity Builder, select the PRINT ENTITIES target. • Select the PRINT SYSTEM ENTITY target. • Move the cursor to the selection list port [ ] and enter the system entity for your PM's NIM library. For example, enter $N01LIB1. (Note: CL/PM Program names reside in NIM Library 1, typically in the highest numbered indices) • Move the cursor to the print or destination port [ ] and enter a file name on your partition. For example, NET>S###>LIBNAMES.XX.

Continued on next page

Lab 5—Correlate CL Object File to Program Name, Continued

Instructions, continued

Step	Action
7	Return to Documentation Tool and open the file LIBNAMES.XX. • Helpful hint: To line up your field definitions, page forward to a display that shows a LIBRYTXT index above 100. Position the cursor so the the first field boundary for LIBRYTXT(###) is before the equal sign. This way you can also filter out library indices that have program names. • Define string fields for – library text parameters (LIBRYTXT) called TEXT – program names, called VALUES • For filter conditions, you can use the following: TEXT=LIBRYTXT* AND VALUES=*[A-Z]* • Result: You should have library indices that contain program names. Output this result to a file, PRONAME.XX, without overwriting field definitions.
8	Query the UCN node to get a list of Process Module points: • parameter to show is SLOTNUM • select PROC MOD for point types
9	Sort by slot number, SLOTNUM. Output the sort to a file, SLOTNAME.XX, without overwriting field definitions.
10	Print out and compare the four files you have created. Example print command is PR NET>S###> *NAME.XX You can now correlate the object codes, program names, and process module slot numbers.

End of lab 5

Lab 6—Identify IOP slots used twice

Introduction

In this scenario, the requirement is to identify why a control loop's output seems to oscillate. A cause may be that the analog output IOP point is configured as an output on more than one control loop.

In this lab exercise, the loop that has the oscillating output problem is FIC21870.

Instructions

Step	Action
1	Your troubleshooting could simply be listed as a condition for multiple uses of the same AO resource the control point is using. Perform a UCN node query to show parameter values CODSTN(1), CODSTN(2), CODSTN(3) parameters on all of your regulatory control loops that meet the following condition: CODSTN(1)=FPV21870.OP OR CODSTN(2)=FPV21870.OP OR CODSTN(3)=FPV21870.OP

Helpful hint

HELPFUL HINT—When typing lengthy conditions, the DEL LINE and INSERT LINE keys are time savers. For example, you can delete the line CODSTN(1) = FPV21870.OP. Then press insert line several times and modify the CODSTN index numbers accordingly.

End of lab 6

Lab 7—Find Disabled and Inhibited Alarms

Introduction

In this scenario, the requirement is to identify the disabled and inhibited alarms. Nuisance alarms, although disabled or inhibited, can add to UCN traffic.

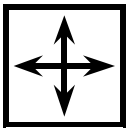
While the Area and Unit Point Attribute Summary displays provide this same information, they are organized by unit.

Instructions

Step	Action
1	Perform a UCN node query to locate disabled and inhibited alarms on your node's flags. The parameter to show is ALENBST.
2	Filter the query results with a condition of ALENBST = DISABLE OR ALENBST = INHIBIT.

End of lab 7

Directions



DIRECTIONS—This is the end of the study material for this module. Discuss questions concerning the study material or the lab activities with a colleague or a course manager

If you are satisfied that you have achieved the objectives of this module, continue with the next section, the Student Proficiency Evaluation.

Proficiency EvaluationCriterion Test

Test Item 1

What are three ways in which Doc Tool could be used to help document the UCN. Try to create realistic scenarios that you could use in the future to meet one of your own documentation needs.

Scenario 1:

Scenario 2:

Scenario 3:

Test Item 2

Use Doc Tool to document one of the scenarios you listed in Test Item 1.

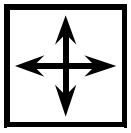
Self-Evaluation

Test Items 1 and 2

Discuss your answers to Test Items 1 and 2 with your course manager.

Show your course manager the results of Test Item 2.

Directions



This is the end of this course module.

Choose another course module (for which you are eligible) from the course map and begin working on it, or check with your course manager.

LAST PAGE