

Pickering Nuclear Line of Business

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PICKERING TOOL MANAGEMENT SYSTEM

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Past History

Over the years, tools and equipment used in Maintenance have been purchased by many departments. These are now being deployed in the station with no process in effect to ensure that they are maintained in good repair so as to effectively support the performance of Maintenance activities. In addition, major delays have been encountered in the past due to the lack of maintained or calibrated tools.

1997

Today's Legal Requirements require that all employers have a process in place to ensure that tools are maintained in a safe condition. This is specified in the Ontario Health and Safety Act, and the Canada Labour Code.

The Performance Objective and Criteria for Operating Nuclear Power Plants require that Facilities and Equipment effectively support the performance of Maintenance activities. Tools therefore, must be controlled, maintained and calibrated so as to be ready when required. The Pickering Tool Management System has been chosen as the process at Pickering N.D to manage Tools.

The Pickering Tool Management System was first designed in 1994. During the past three years, tools throughout the station, and in the tool cribs have been identified by number etching and bar code labels.

- The Pickering Tool Management System (PTMS) is a Windows application installed on several file servers on the station LAN.\
- The PTMS data base is installed in an Oracle database server located at the Information Services Unit server room.
- The PTMS manages all stores tool transactions.
- Tool status is updated automatically for every tool transaction.
- Your DISN is required for Tool issues, reservation and transfers.

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1.0 Introduction

The Pickering Tool Management System (PTMS) has been implemented and operating since 1994.

- The PTMS system is a Windows application installed on several file servers on Pickering station LAN
- The PTMS database is installed in an Oracle database server located at the ISU server room.
- The PTMS will manage all tool transactions from the stores. All tool transactions are stored and updated instantaneously.
- The PTMS system uses bar coded labels and bar code scanners to process tool transactions. Tool numbers can also be keyed in if necessary.
- Tool status is updated automatically for every transaction.
- DISN number is required for tool issues, reservations and transfers.
- Workers can transfer tools amongst themselves from the kiosk and desktop computers.
- IOP staff can also order (or reserve) tools ahead of time for job planning purposes.
- Everyone shares the same information.
- Maintenance and Calibration programs including periodic frequencies, procedures and reports are available from PTMS.
- The PTMS records all tool transactions and tracking of tools including missing and withdrawn tools.
- Tool Maintenance and Calibration activities are recorded and charted monthly. Supervisors can monitor crew tools.

2.0 PTMS Users Include

- Tool Crib Staff
- Standards Lab Tech Staff
- Tool Repair Shops - Mechanical and Control trades personnel
- Measure and Test Equipment Labs staff
- Radiation Instruments Repair Shop Staff
- Planning, Engineering, Maintenance and I.O.P.Staff
- Supervisors
- Workers
- Anyone who uses tools in the station

Today Pickering has approximately 12,000 tools which are identified in the database. The PTMS is user friendly and permits trades persons, engineers and planners to browse the digital images of the tool before ordering for a job.

In 1997 the periodic inspection, maintenance and calibration program was introduced and is working extremely well. A Quality of Work Plan for 1998 and 1999 has features which will support

- Improved productivity
 - Reduce time at the tool crib counter
 - Reserve tools required by IOP
- Reduce cost
 - Minimize tool redundancy
 - Reduce quantity of missing tools
- Manage Quality
 - Inspection, maintenance and calibration of tools on schedule
 - Quarantine feedback
- Improve morale
 - Reduce workers frustrations
 - Less tool hoarding by introducing controlled satellite stores.

3.0 Basic Operations

Three programs (units) are used in the station they are:

KIOSK

There are 4 options on the Kiosk touch screen namely:

- Tool information
- Tool orders
- Tool transfers
- User information

Tool details and tool pictures also available.

The Tool Order module allows users to reserve a tool that is available in the tool crib. Your DISN and PIN numbers are required. The Tool Transfer module allows users to transfer tools from one account to another. The DISN and PIN number of both parties is required.

STORES

There is an extension of the KIOSK with 4 additional options:

- Issue records every tool
- Return records every tool
- Problem information
- Reports on issued tools - user/supervisor

DESKTOP

Unlike the touch screen kiosk program, the desktop is available to everyone throughout the station on the LAN. The desktop is used for many functions in addition to the Stores and Kiosk.

The desktop is used for tool:

- Searching
- Details
- Users
- Ordering
- Transferring
- Establishing Maintenance/Calibration requirements
- Storing Maintenance/Calibration records
- Spare parts lists for tool repair
- Photographs of tools
- Creating tool lists for special jobs eg. Modification Pump Replacement

ADMINISTRATION MODULE

This module is used by the System Administrators and is used to maintain the system while it is operating.

4.0 Features and Uses of PTMS

Tool status is updated instantaneously. All employees share the same information. Used for establishing maintenance programs. Used for newly purchased tool Quality Control.

Important information for IOP work planning. Regularly used for physical tool audits in order to increase tool availability. Tool cost monitoring and control by regular maintenance and calibration.

5.0 Basic Operations - Desktop Program

The program operates the same way as any windows program.

Starting/Exiting

After clicking on the PTMS icon you will be presented with a dialogue box, asking you to login. You can enter your DISN and PIN numbers, or choose the 'Browse Only' option. If you enter your identification number you can enter and save changes in your account. On the other hand the 'Browse Only' option allows you to perform a search and open various modules, but you will not be able to edit or enter any data.

You must first contact your LAN administrator to set up an account if you wish to login to the system. Note that you do not need an account if you are only using the Browse mode.

Buttonbar

The buttonbar appears on the top of the screen, and it is visible in all the modules throughout the program. It consists of several command buttons, which will be described later. The command buttons can be used to execute all the main functions of the program. All of the commands found on the buttonbar are also found in the menus.

The following are descriptions of each button found on the buttonbar.



Close - *This command button closes the immediate form or module you are using.*



Print - This command button allows you to print a hard copy of the description or listing you have on the screen.



New - Press this button to begin a new record.



Save - *Saves the most recent entry such as a tool transfer or order.*



Clear - Clears the screen from all entries, allows you to begin a new search, order, etc.



Query - Executes a search that you have specified in one of the modules. Press this button after you have specified your search criteria.



Next and Previous - Displays the next or previous user with the same last name or a tool of the same type.

The following are command buttons used for opening various program modules. Each module will later be outlined in detail.



Search



Tools



User



Calibration



Transfer



Order

6.0 Search Module

The search module is probably the most useful module of the program, as it can be the starting point of each search. It allows you to search for information according to a specified search criteria.

To start a search, first choose the type of object you will be searching such as a tool, user, etc. You can make this selection from the list box found in the upper left part of the module screen.

Search Group:

	CALIB	↑ ↓
	MAINT	
	ORDER	
- 1.0 All Tool Types		↓
- 1.1 All Individual Tools		

Next enter your search criteria in the text boxes as shown below.

Search Criteria:

1: All Individual tools including TSO# Only tools

2: Keyword 1 LIKE WRENCH

☒ And ☐ Or

3:

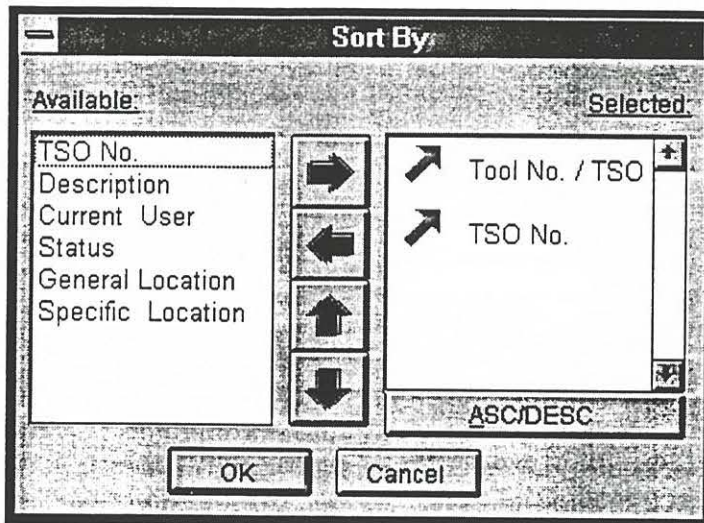
This function allows you to specify a very detailed search criteria. You can choose a criteria by scrolling through the list box. The criteria available are such as keyword, manufacturer, model, etc. From the adjacent list box you can choose from several operators. The two most used operators are '=' and 'like'. The '=' operator allows you to select a criteria from a predefined list, while 'like' lets you type in your own entry. The search function also can perform a search according to two criteria using the 'and' and 'or' operators. Simply choose an operator, and enter a criteria just as in the previous text boxes. To execute the search press the Query button.

After the search is complete, a listing of all the items that correspond to the search criteria will appear in the list, on the bottom portion of the screen. You can double click on any item found in that list to see further details. A sample tool listing is shown below.

Search Results:							Records: 1369
	Tool No. / TSO No.	TSO No.	Description	Current User	Status	General Location	↑
	1442-005	33- 40- 25- 1	WRENCH,COMBINATION,1-3/4",C		Available	Turbine Tra	3
	1442-006	33- 40- 25- 2	WRENCH,COMBINATION,1-3/4",C		Available	Turbine Tra	3
	1443-001	31- 40- 27- 1	WRENCH,COMBINATION,1-7/8",C	KING (JJ	Issued	Stores 254	1
	1443-002	31- 40- 27- 3	WRENCH,COMBINATION,1-7/8",C	KING (JJ	Issued	Stores 254	1



Sort - This command allows you to sort the search criteria items according to various categories. In the dialogue box that comes up. Select the categories you want to order by, and click the right arrow to make that category active. After completing your selection press OK, followed by Query. The Sort By dialogue box is shown below.



7.0 Tools Module

Tools module can be used to look up the status of tools. You can enter this module by double clicking on one of the tools found in the Search Module, or performing a search. You can enter a Tool Type # or TSO # in one of the text boxes, and then press Query to execute the search.

Tool Management - [Tool Details - 0199-003]

File Edit Detail Record Module Window Help

Close Print Save New Clear Query Prev Next Search Tools User Order Calib Transfer Maint

Tool Number: 0199-003 TSO No: 32- 40- 15- D

Description: WRENCH, COMBINATION, 1-1/16"

Manufacturer: GRAY Model No.: 3134

Alias: None Serial No.:

Pickup Store: Stores 274 Owner Group: CM Status: AVAILABLE

General Bin: Stores: 274 Group Unit: Condition: OK

Specific Bin: 300EE07F Restricted: Current User:

Calibration Due Date: Maint. Due Date: Exp. Return Date:

Admin Remarks:

Safety Remark:

More Tool Details Tool Comments

Inventory Date: Jan 3, 94 MEIS No:

Acquired Date: Cost:

Warranty Days: Maintenance Set Date:

Calibration Set Date:

Calibration Actuals NUM

*The Tool Module is composed of two screens: details and summary. The summary screen contains very brief information about a tool, and a list of all the tools with the same Tool Type #. By double clicking on a tool found in the list you can bring up that tool's details. There is also a **Tool Comments** list found on the bottom of the screen. It can be opened by pressing the Tool Comments button found in the middle of the screen. You can alternate between this button and the **More Tool Details** Button to bring up additional tool information.*

By dragging the mouse pointer over the tool description and clicking the right mouse button you can bring up the full text of the tool description.

The User Module can be used to look up employees information. Information contained in this module is the DISN number, name, position, supervisor, crew, work group, preferred store, and a list of all the tools that are presently issued to that employee.

Tool Management - [User Details - 141912]

File Edit User Record Module Window Help

Close Print Save New Clear Query Prev Next Search Tools User Order Calib Transfer Maint

DISN: 141912 Crew: G

Name: CURRIE-MILLS, BJ (BRIAN) Sub-Crew: D2

Trade: MAINTENANCE ASSESSOR Supervisor: BAILIE, J (JOE)

Work Group: PRODUCTION SUPPORT-MECH Preferred Store: Stores 254

Work Unit: COMMON

Tools On Hand

Tool No	Description	Due On	Extend To	Status

Detailed User Information NUM

A search can be started from the Search Modules or within this module, by entering a DISN number or last name in one of the text boxes, followed by pressing the Query button.

9.0 Order Module

The Order Module is used to place tool orders. You cannot place an order while in the Browse Only mode. You can find a tool and use the Search Module to place an order or you can enter a tool straight into an order list through the Order Module.

10.0 Calibration Module

The Calibration Module can be used to monitor all calibration procedures for tools. It contains all the calibration procedures, as well as calibration dates. The main window is titled Calibration Actuals.

Calibration Actuals

*To call up a tool calibration procedure, in the Search Module choose the Calib option from the criteria list box. This criteria box allows you to choose various templates for your search. These templates allow you to look up tools according to various conditions. For example, one template could bring up all the tools with procedures, while another tool that needs calibration. To execute a search, press the **Query** button. A list of all the tools will appear in the list at the bottom half of the screen. Select the tool from the list that you are interested in. Double click on the row it is found on, or select it and press the **Calib** button to open the calibration module. The calibration module will be editable for only some selected users. It will be read only for all other users.*

Maintenance Module

The Tool Maintenance Module is very similar to the Calibration Module and contains all Maintenance information and records.

11.0 Transfer Module

The tool transfer module is used to change the ownership of a tool from one employee to another . In order to transfer a tool, or a group of tools the DISN and PIN number o both employees must be specified. Enter the seconds employee's DISN and PIN number in the text box appearing in the middle of the screen. As soon as the identification numbers are entered, the tools on hand for that employee will be displayed.

To transfer tools, use the mouse to select an employee's tool so that they are all highlighted. You can transfer more that one tool at a time from the list. To transfer tools, press the Save button. You will now see the transferred tools in the other employee's list, marked in a red font.

Tool Management - [Tool Transfer]

File Edit Record Module Window Help

Close Print Save New Open Find Edit Copy Paste Search Tools User Order Calib Transfer Maint

Emp. DISN: 296718 SPADAFORE, MJ (MICHELE)

Tool #	Description	Due Date

Emp. DISN:

Tool #	Description	Due Date

TMS Search Window NUM