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18. Signature of EDT Originator <i>[Signature]</i> Date: 9-28-98	19. Authorized Representative for Receiving Organization Date: _____	20. Cognizant Manager <i>[Signature]</i> Date: 9/28/98	21. DOE APPROVAL (if required) Ctrl. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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# Hanford Tanks Initiative AX Tank Farm Cone Penetrometer Demonstration Training Plan

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U.S. Department of Energy Contract DE-AC06-96RL13200


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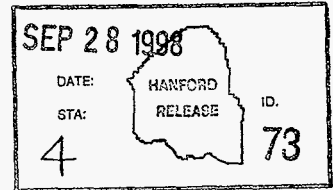
Key Words: Single-Shell Tanks, waste, leakage plume, cone penetrometer, gamma, xray fluorescence, vadose zone, soil, soil sampling, AX-104, training

Abstract: The HTI subsurface characterization task will use the Hanford Cone Penetrometer platform (CPP) to deploy soil sensor and sampling probes into the vadose zone/soils around AX-104 during FY-99. This training plan identifies training requirements in support of the HTI task, describes specific staff training needs, and identifies how the training will be provided and by whom. Documentation of training completion is also described.

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# Hanford Tanks Initiative: AX Tank Farm Cone Penetrometer Demonstration Task Training Plan

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## 1.0 Introduction

The Hanford Tanks Initiative (HTI) Cone Penetrometer (CP) Subsurface Characterization Demonstration task uses an existing piece of equipment (the Hanford CPP [CPP]), purchased in 1996, to push instrumented and soil sampling CP probes into the soils adjacent to tank AX-104. Correlation of data from the instrumented probes and the soil sample lab analysis data will demonstrate the use and capabilities of the probes to detect and measure specific constituents of the waste plume in the soil and target specific soil regions for sampling.

The CPP and CP probes used during the task are not currently planned for operational use or programs beyond the HTI task scope. The HTI CP task will not prepare the CPP and CP probes for turnover to Tank Farm Operations for routine operations use.

The overall objective of the HTI project subsurface characterization technology development and demonstration task is to demonstrate and evaluate CP technology that can be used to determine the location, extent, and contaminant concentration gradient of a single shell tank (SST) leakage-derived plume. This effort is planned to take place over a minimum two-year period (fiscal years 1997 and 1998). This task will focus on the backfill soils and vadose zone surrounding tank AX-104 in the 241-AX tank farm on the DOE Hanford Site. The soils will be interrogated (using CP-deployed sensors/samplers) for traceable contaminants of potential concern (COPC) including metals and gamma emitting radionuclides.

## 1.1 Details of Training Deliverables

This section provides details of the training to be developed and delivered.

### NOTES:

Course numbers given are temporary numbers created for the purpose of this report.  
ARA personnel will provide the Skill Verification Checklist Supervision.

### 1.1.1 General Overview of the CPP and CP Operations (TBD-001)

This overview broadly covers the CPP and HTI CP operations. Specific topics include:

- Handout (AX Tank Farm CP Operations Control Plan)
- Purpose of the System
- System Description
- System Operations
- Safety Limits and Hazards
- Emergency Responses
- Characterization Project Operations (CPO) Work Instructions Overview

Prepared By: ARA, HTI, and CPO Personnel  
Delivered By: ARA, HTI, and CPO Personnel  
Tracking: Single course number (TBD-001) given at completion of course.

### 1.1.2 CP Operations Control Plan Required Reading (TBD-002)

A handout (AX Tank Farm CP Operations Control Plan) will be required reading for the Shift Operations Managers (SOMs). This handout covers the information required for SOMs to respond to any unusual occurrences.

Prepared By: ARA, HTI, and CPO Personnel  
Delivered By: TWRS Training  
Tracking: Double Shell Tank Farms SOMs required reading

### 1.1.3 CP Nuclear Chemical Operators Skill Verification Checklist (TBD-003)

This checklist guides Nuclear Chemical Operators (NCOs) through their activities during CP operations.

Prepared By: TWRS Training  
Delivered By: TWRS Training  
Tracking: Tracked with a continuing training number.

### 1.1.4 Field Walkdown of the CPP (TBD-004)

Walkdown of the CPP pointing out critical and significant components.

Prepared By: ARA Personnel  
Delivered By: ARA Personnel  
Tracking: Course completion roster describing the specific topic addressed. These will be kept in TWRS Training Program Master Files.

### 1.1.5 Course Completion Rosters

During the course of the HTI CP task, the Course Completion Rosters shall be kept with the CPP at the CP demonstration or storage location with a description of activities and list of names present when those activities occurred.

Prepared By: ARA, HTI, and CPO Personnel  
Delivered By: ARA, HTI, and CPO Personnel  
Tracking: These Course Completion Rosters will be kept at the site of the CP Site until demonstration is complete, then turned over to the TWRS Training Records Program Master Files.

Completion of these activities will be documented as indicated. A tracking number will appear on the training records of those who completed the training. If additional CP sampling occurs, this activity is planned to eventually be incorporated into the CPO Certification Program

## 2.0 Job Responsibilities and Training Needs

### 2.1 CPO Nuclear Chemical Operators

HTI and ARA personnel are primarily responsible for operating the CP. Characterization Project Operations (CPO) Nuclear Chemical Operators (NCOs) will support the HTI CP operations. AX-104 CP operations will include CPP and associated equipment set up, moving the CPP and associated equipment, soil sampling, and equipment and push site clean-up activities. The above activities are the same type as, and within the scope of, routine work performed by NCOs in Tank Farms. However, additional activities include assisting the Washington State Certified Driller on the CPP and monitoring of pipe as it goes into, and is removed from the soil. As a result of the limited involvement of NCOs in this activity, training will only be required on the topics and activities listed below.

- General Overview, given by HTI personnel, of the CP to occur at the cold run pre-job Meeting (TBD-001)
- Skill Verification Checklist (TBD-003)
- Field Walkdown of the CPP (TBD-004)

### 2.2 CPO Cask/Sample Transport Truck (CSTT) Nuclear Chemical Operators

Characterization Project Operations (CPO) CSTT Nuclear Chemical Operators will accept the field-generated CP [soil] samples for shipping to the labs. These staff must have familiarity with CP operations and general aspects of CP probe and CPP deployment. Their required training includes:

- General Overview, given by HTI personnel, of the CP operations and the Hanford CPP to occur at the cold run pre-job meeting (TBD-001)
- Field Walkdown of the CPP (TBD-004)

### 2.3 CPO Supervisor

The CPO Supervisor must be cognizant of the CP operations and general aspects of CP probe and CPP deployment. The following training is required:

- General Overview of the CPP and CP operations (TBD-001)
- Field Walkdown of the CPP (TBD-004)

## 2.4 PO and Double Shell Tanks (East Area) Shift Operations Managers

Shift Managers will be required to have a level of understanding that gives them the knowledge necessary to respond to off-normal or emergency events. This training includes:

- General Overview of the CPP and CP Operations from a Training Handout (AX Tank Farm CP Operations Control Plan). (TBD-002)
- Field Walkdown of the CPP (TBD-004)

## 2.5 CPO Health Physics Technicians

Despite the fact that a new and unique piece of equipment is being used, no unique situations are planned or anticipated beyond those that radiological control technicians normally handle. Therefore, a general overview of the CP/CP operation and equipment, and a field walkdown will provide adequate training. The following training will be provided to radiological control technicians:

- General Overview of the CPP and CP operations will be given by HTI personnel (TBD-001)
- Field Walkdown of the CP (TBD-004)

## 2.6 TWRS Crane and Rigging Personnel

Operations involving Crane and Rigging will be within the bounds of normal activities, however, orientation with the CP will be required. The following training will be required:

- General Overview of the CPP and CP operations will be given by HTI personnel at the "cold" run pre-job Meeting (TBD-001)
- Field Walkdown of the CPP (TBD-004)

## 2.7 CPO Technical Staff

Cognizant Engineers will be required to sign off documents related to CP operations. For this reason, they must learn about the device and its operations. Cognizant Engineers will be expected to attend the following training, or be exempted from the training by [field] experience:

- General Overview of the CPP and CP operations will be given by HTI personnel (TBD-001)
- Field Walkdown of the CPP (TBD-004)

## **2.8 Analytical Personnel (CP Deployment Team)**

Analytical Personnel will analyze the sample "in-situ". They must meet site and Tank Farm requirements in order to have access to these areas, and become familiar with CP operations by taking the following:

- General Overview of the CPP and CP operations will be given by HTI personnel at the "cold" run pre-job Meeting (TBD-001)
- Field Walkdown of the CPP (TBD-004)
- Field Activity Course Completion Rosters (TBD-005)

## **2.9 CP HTI Process and Design Engineers**

These are the Subject Matter Experts who, due to participation in the design of the CP, do not require any additional training. Waste Management, HTI, and Characterization Staff will provide Process and Design Engineers. Technical expertise will be demonstrated prior to delivery of system through participation in design and development of the system and work instructions. These staff must meet site and Tank Farm requirements in order to have access to these areas, as stated in HNF-IP-0842, Vol. VII, Radiological Control, Section 2.4.

## **2.10 CP Hanford Tank Initiative (HTI) Lead Technical Personnel**

ARA Staff will provide the technical lead for the CP push operations and the CPP. They will write the work instructions and provide supervision of the Skill Verification Checklist signoff. They must meet site and Tank Farm requirements in order to have access to these areas, as stated in HNF-IP-0842, Vol. VII, Radiological Control, Section 2.4.

## **2.11 TWRS Maintenance Personnel**

The CP includes items of equipment unique to the project. Vender (ARA) Staff will maintain these items. Members of the HTI Organization will maintain records of Vender Maintenance Personnel activities for potential future use in development of maintenance training. No training will be given.

## **2.12 Industrial Hygiene Technicians**

Industrial Hygiene Technicians will not be involved in the operating of the CP. Therefore, no special training will be created or provided to Industrial Hygiene Technicians.

## **2.13 Stationary Operations Engineers**

Stationary Operations Engineers (SOEs) are not required for any activities related to the operation of the CPP or CP probes, therefore, no training will be created or delivered to SOEs



## **2.14 Operations Engineers (OE)**

Operations Engineers who may act as Shift Managers for CPO or Double Shell Tank Operations during the operation of the CP must meet the requirements of the shift manager as stated above.

### 3.0 Training Plan

Training Deliverables	Audience	Schedule
General Overview of the CPP and CP operations (TBD-001)	CPO NCOs	Presented during a "cold" run Pre-job meeting
	CPO CSTT NCOs	Presented during a "cold" run Pre-job meeting
	CPO Supervisor	Presented during a "cold" run Pre-job meeting
	HPTs	Presented during a "cold" run Pre-job meeting
	C&R Personnel	Presented during a "cold" run Pre-job meeting
	CPO Tech Staff	Presented during a "cold" run Pre-job meeting
	Analytical Personnel	Presented during a "cold" run Pre-job meeting
Training Bulletin (TBD-002)	Shift Managers	Delivered in required reading for Double Shell Tanks Shift Managers.
Skills Verification Checklist (TBD-003)	NCO	Signed off by ARA Personnel during a "cold" run

Field Walkdown of CP (TBD-004)	CPO NCOs	All CPO NCOs attached to CP Operations to complete
	CPO CSTT NCOs	All CPO CSTT Operators to complete
	CPO Supervisor	The CPO Supervisor attached to CP Operations to complete
	CPO Shift Managers	All CPO Shift Managers to complete
	East Area Shift Manager	All East area Shift Managers to complete
	Health Physics Technicians	All HPTs attached to CP Operations to complete.
	C&R Personnel	All C&R Personnel attached to CP Operations to complete
	CPO Technical Staff	All CPO Technical Staff attached to CP Operations to complete
	Analytical Personnel	All Analytical Personnel attached to CP Operations to complete

### **3.1 Continuing Training**

Because of the short and experimental nature of this operation, no scheduled continuing training will be created. If this project is accepted and turned over to operations, a separate training plan will address the new training requirements.

### **3.2 Retraining**

There is no need for retraining because of the short duration of this operation.

### **3.3 Dependencies**

For the TWRS Training organization to complete development and implementation according to this plan, the following support is required.

#### **3.3.1 Work Instruction Development**

TWRS Training organization will complete the Skill Verification Checklist one week after all work instructions related to the tasks in that checklist are approved by signature - provided that TWRS Training has access to the draft work instructions on demand, and operations will take no more than one day to review draft cards and guides.

#### **3.3.2 Operations Manager Support of Training Activities**

#### **3.3.3 Classroom Attendance**

TWRS Training has neither the resources nor time to support multiple classroom presentations above those designed in this plan. Managers must make all efforts to have their employees attend the courses given as scheduled.

#### **3.3.4 Skill Verification Checklist Completion**

The availability of knowledgeable Operations and Process Engineers will impact TWRS Training's schedule for making a Skill Verification Checklist available and in getting Operator Skill Verification Checklist Instructors prepared to instruct others. Operations Managers will need to give their operators the time necessary to complete their respective Skill Verification Checklist.

### **3.4 Training Exemptions**

Certain personnel may be exempted from the training and given credit for such training based on their activities with development and trial of the CP. Exemptions will be requested and documented according to HNF-IP-0842, Volume III, Section 2.2, "*Training Exceptions and Extensions*".

HTI AX Farm Cone Penetrometer Characterization Demonstration Task Training Plan Rev. 0

Approval Signatures

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## DISTRIBUTION SHEET

To Distribution	From Numatec Hanford Co., Project Definition	Page 1 of 1 Date 9/28/98
Project Title/Work Order Hanford Tanks Initiative AX Tank Farm CP Demonstration Training Plan, HNF-3313, Rev. 0		EDT No. 609268 ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
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JJ Huston	R2-89	X			
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WS Callaway	S3-90	X			
DF Iwatate	R2-89	X			
DB Hagmann	R2-89	X			
R Root	R2-53	X			
AF Noonan	R2-89	X			
GP Janicek	S7-12	X			
KW Gray	S7-05	X			
NK Butler	R3-01	X			
JS Schofield	S7-12	X			
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TJ Kelley	S5-07	X			
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