Developing and Implementing a Training and Certification Program
University of Texas at Austin

Industrial Resources, Inc.

In 2004 as plans were being made to upgrade the Utility plants, it was recognized"

- **That the upgrade of the knowledge and skills of new and incumbent workers was needed to handle the new equipment.**
- **That it needed to be mandatory.**
- **That it needed to be incentivized.**
- **That it needed to be phased-in as could be afforded.**
- **The program was implemented in April of 2005**

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The program development and implementation was performed in three phases over a two year period.

- Design phase
- Development and implementation planning
- Implementation, began after all training and evaluation systems were in place and ready for use.

The program included:

- Training and Certification Plan
- Individual Training and Certification Books for each job/title description
- Training Materials needed to Support Training and Certification
- Tests and Job Performance Measures

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PROGRAM DESIGN

- **Used currently available training and evaluation materials where possible**

- **Generic programs were used if objectives were valid**

- **Plant specific training is based on real job requirements**

- **Evaluation Methods were Validated**

- **Self-paced to minimize classroom instruction**

- **Include safety and regulatory compliance training**

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THE FIRST STEP WAS TO DEFINE JOB REQUIREMENTS

- **Extensive lists of job requirements for UTA Facility Employees were developed**

- **Generic lists of job requirements were combined and/or modified to fit each specific job positions requirements**

- **Facililty technical documents, plant system and equipment lists were reviewed**

- **Current facility employees were interviewed and plant operation and maintenance practices was observed**

- **Training materials and records were reviewed**

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VALIDATION PROCESS

- Job Survey Questionnaires That Are Cross Referenced to Each Certification Requirement were developed

  - A Representative Sample of knowledgeable Job Incumbents was surveyed to Collect Data

- The data was analyzed to Determine the Validity of Each Item

  (A Computer Based Analysis Program May Used to Perform the Analysis)

  - Data was Carefully Documented and Used As a Cross Reference for All Certification Requirements.

- Invalid items should not be used for Certification

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NEXT A MODULAR OUTLINE WAS CREATED WITH THE MODULES ARRANGED IN CATEGORIES

Advanced Operation and Skills Training

UTA Facility Specific Training

Basic General Knowledge and Theory

Safety Training

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GENERIC TRAINING PROGRAMS

- Generic basic theory training materials were selected from commercially available industry programs.

- These training programs were purchased in CD•ROM format and copied onto the Utilities Section Server and individual Laptop computers for easy access.

- The programs are self running interactive programs that include evaluation as part of the process.

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PLANT SPECIFIC TRAINING AND EVALUATION MATERIALS WERE DEVELOPED

- **System and Maintenance Descriptions**

- **System Operating Procedures**

- **Maintenance Procedures**

- **Job Performance Measures**

- **Test Questions**

- **Unit Operating Procedures**

- **Alarm Response Manuals**

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SYSTEM AND MAINTENANCE DESCRIPTIONS

- System or Equipment Function

- System Flow Path or Equipment Overview

- Description of System and Parameters

- Major Component Detail and Specifications

- System Operation or Maintenance Procedure

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SYSTEM DESCRIPTIONS

- **System Function**
- **System Flow Path**
- **Description of System and Parameters**
- **Major Component Detail and Specifications**
- **System Operation**

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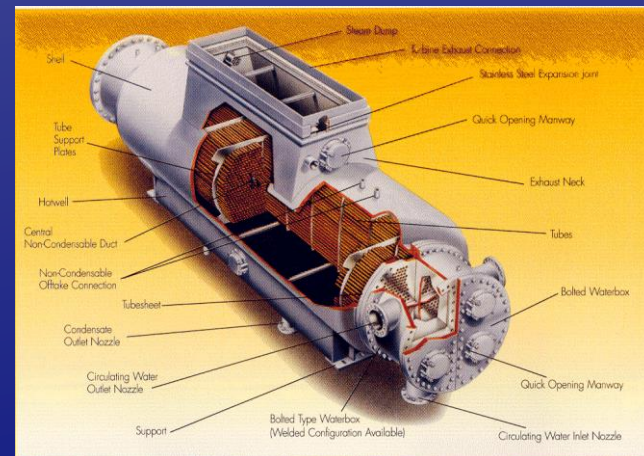
SYSTEM AND UNIT OPERATING PROCEDURES

- **Purpose of Procedure**

- **Precautions, Limitations and Set points**

- **Procedure**

- **System and/or Unit Startup**

- **System and/or Unit Normal Operation**

- **System and/or Unit Shutdown**

- **Valve Listing for Normal Operation**

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EVALUATION TESTS AND JOB PERFORMANCE MEASURES (JPM)

- Multiple choice or fill in the blank written test items

- Used a secure computerized test bank

- At least one jpm per module is needed

- JPMs developed for generic programs

- Testing and Evaluation is job content valid and referenced to appropriate module objective

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TRAINING PROGRESS MONITORING CARDS

- Provided to Each Individual Employee

- Lists Individual Training Requirements

- Kept by Individual

- Requirements are signed off by Supervisor and other designated personnel as completed

- Training Progress Monitoring Cards are collected and personnel records updated on a monthly basis.

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PROGRAM IMPLEMENTATION

- Each Employee Training Needs were Assessed

- Training Time Limits and Progress Requirements Established

- Training Progress Monitoring Card (TPMC) Provided to Employee

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EMPLOYEE PROGRESS THROUGH EACH TRAINING MODULE

1. Completes Generic Training Program

2. Reads Referenced Facility Specific Materials (Descriptions/Procedures)

3. Completes Job Performance Measure and has signed off

4. Passes completion test (2 opportunities to pass with a 70)

5. Module Signed Off By Supervisor or Designated SME

6. Complete all Modules listed on TPMC and Final Sign Off Sheet for Job Position completed

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PLANT AND JOB SPECIFIC TRAINING MATERIALS

- The plant specific documents files that were developed were put on the server so that everyone had access to them.

- Also a single copy was printed out and made available in the shops and control room.

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UNIVERSITY OF TEXAS AT AUSTIN TRAINING MODULES

The program was initially implemented with 80 training modules

Electrical - 20 Modules

Maintenance - 20 Modules

Mechanical Distribution - 20 Modules

Instrumentation and Control - 20 Modules

An additional 80 modules were then added as needs were identified

(Chiller System Modules, GE LM-2500, Inlet Air, etc.)

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TESTS AND EVALUATION

Tests and JPMs are kept in a secure database

- Placed in a secure file that only the Training Manager could access to test and evaluate the trainees

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PROGRAM RESULTS

- All trades employees are participating.

- All new employees, promotions and existing employees must certify for their position in 18 months.

- Up to 6 hours of overtime are paid weekly for them to go through the program on their own time.

- If they do not participate they are not fired they just get a lower evaluation score that affects merit increases.

- After certifying for the current position they can pre-certify for other positions and receive a preference in the hiring process.

- A total of over 10,000 hours of training have been completed.

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CERTIFICATION AND AWARDS

Medals are awarded for completion:

Bronze for completion of Safety Modules

Silver for completion of Job Related Modules

Gold for completion of Site Specific Modules.

At completion a framed certificate signed by the Director and Associate Vice President is awarded.

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AWARDS CEREMONY FOR COMPLETION OF TRAINING

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THANK YOU FOR YOUR ATTENTION!!

For More Information about this program contact

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