

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



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**



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**



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**



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
- Facility 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



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



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



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.



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**



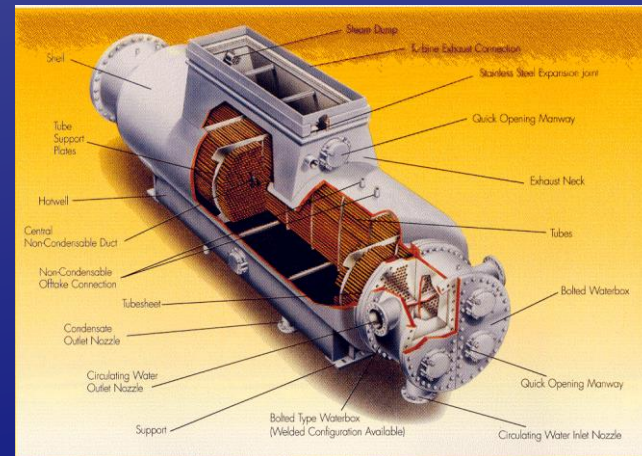
SYSTEM AND MAINTENANCE DESCRIPTIONS

- 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



SYSTEM DESCRIPTIONS

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



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



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



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.



PROGRAM IMPLEMENTATION

- Each Employee Training Needs were Assessed
- Training Time Limits and Progress Requirements Established
- Training Progress Monitoring Card (TPMC) Provided to Employee



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



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.



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.)



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



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.



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.



AWARDS CEREMONY FOR COMPLETION OF TRAINING



THANK YOU FOR YOUR ATTENTION!!

For More Information about this program contact

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