Power Plant Operator Training and Qualification Plan Book

Typical Steam Plant

Preface

This Plant Operator Training and Qualification Program was developed and validated by a select group of workers and supervisors from your plant. Thus, the requirements for training conform to the standards set by the plant.

The broad purpose of the Plant Operator Training and Qualification Program is to train Plant Operators throughout the company. The skills listed in each module of training cover all phases of Plant Operator work. The modules are intended to replace any training or certification program now in place.

This particular program—the Plant Operator Training and Qualification Program—lists the core skills that any Pant Operator must have to effectively perform his or her job functions. As participants learn new material, they are expected to demonstrate their competence on a continuing basis. That is, participants are expected to carry previously learned skills with them to the next level. This approach is in contrast to some training programs, which require participants to demonstrate competence only at the current level, while ignoring skills learned at previous levels.

If properly used, the Plant Operator Training and Qualification Program will help supervisors train their employees on the job and will form the basis of evaluation. The skills listed for each module form the basis for the content of the training classes.

An added benefit of the modular approach is that employees will be able to review each module's skill requirements and know what is expected of them. This will help employees prepare themselves for each step in their progression.

Ultimately, the Plant Operator Training Program will help you attain our goal of having ***"well-trained employees who can progress with the company."***

Plant Operator Training Requirements

The program is organized such that the training progression into levels allows flexibility. The complete program may take between six and eighteen months to complete depending on the each individual's training requirements. Regardless of how much time trainees spend on each module they must demonstrate the ability to perform the listed skills and must show that they meet the knowledge requirements.

The Plant Operator Training and Qualification Program is not designed to be a job description. The skills listed in the program outline minimum technical requirements for each module. Since these are minimum requirements for a particular module, a given employee may be able and qualified to perform a job beyond his or her classification. The employee may perform the specific job at the supervisor's discretion. The supervisor determines whether or not a trainee is qualified to do a job beyond his or her classification.

Plant Operators are sometimes required to do their jobs without assistance. Employees being trained, as part of this program, also may have to work by themselves at times. Nevertheless, it is very important that the skills and knowledge outlined in this program be performed under direct supervision, with supervisors becoming involved in the growth of trainees.

Keys to successful skill-building during training include:

- Involved supervision
- On-the-job explanation of how to work
- Focused skill-building in the various types of work

Some modules require trainees to learn especially important parts of the "Safety Rules Book" and the " and You" booklet. The selection of these modules is not intended to limit or dictate the sequence of the employee's Safety Procedures Manual. However, the selected modules and procedures must be learned as employees progress through this program.

Study materials for this certification program include the following:

- Safety Rules Book
- Plant Operator Training Book (this book)
- Training material (received during classroom instruction)
- Self-study training materials

Plant Operator Training and Qualification Book Instructions

The Plant Operator Training and Qualification Program uses both on-the-job training and classroom training. Employees are required to demonstrate actual work proficiency before they can be certified as qualified.

All items in the Plant Operator Training Book require the employee to take an action or give a response. Each item requires some preparatory work, such as reading, studying, observation, or practical experience. Employees should be encouraged to ask questions if they are unsure about any items.

The requirements have been designed to measure knowledge and evaluate skills. Each employee must take the initiative to request training or help in learning a skill. The supervisor is responsible for observing the employee's safety habits, work procedures, and completion time. As the trainee demonstrates skills, the supervisor or another qualified trainer should initial and date the space next to the skill demonstrated (see Skills Evaluation sheets).

The supervisor or trainer must consider safety habits when judging whether or not to approve a skills demonstration. An unsafe act may invalidate an otherwise approved performance. Remember that safety is a crucial part of any Plant Operator's work and of every task performed.

Skill demonstrations must be approved by an employee's supervisor or someone designated by a supervisor, such as a trainer in a school. The company Safety Procedures Manual and company-approved standards and procedures must be used to determine the quality of a demonstration. In some cases, the supervisor may use a team to approve a demonstration.

Supervisors or delegated authorities must date and initial or sign all approvals on the Plant Operator Training Progress Monitoring Card. Since the TPMC will become a part of the employee's permanent record, supervisors must keep the document secure during the training period, to protect confidentiality.

Employees, supervisors, and trainers can use the comments section and the white space in the margin of each page for any notes or remarks.

- The skills listed in this book must be performed in their order of appearance unless authorized by the Training Manager or Supervisor. The order in which the employee performs the demonstration of these skills depends on each employee's experience and preparation. It also depends on the employee's current work schedule.

- Trainees should study the material in the Safety Procedures Manual

Plant Operator Training Progress Monitoring Card

Note: Modules 2-18 are Typical Steam Plant Operator Mandatory OSHA Safety Training.

Employee's Name (print): _____

Work Location: _____

Supervisor's Name (print): _____

Module #	Module Title	Date Completed	Initials
001	New Hire Orientation		
002	CPR and First Aid		
003	Bloodborne Pathogens		
004	Hazard Communication		
005	Forklift Training		
006	Fire Extinguisher Training		
007	Flammables and Combustibles		
008	Chlorine Training		
009	Ammonia Training		
010	Hazwoper Training		
011	Confined Spaces Training		
012	Lock-out/Tag-out		
013	Overhead Crane Training		
014	Mobile Crane Training		
015	Laboratory Safety		
016	SCBA Training		
017	Respiratory Protection		
018	Scaffold User Training		

Module #	Module Title	Date Completed	Initials
019	Power Plant Operation		
020	Mathematics Principles		
021	Mathematics Applications		
022	Plant Science		
023	Plant Cycle		
024	Plant Auxiliaries		
025	Plant Systems		
026	Basic Electricity		
027	Plant Instrumentation		
028	Basic Water Chemistry		
029	Fuels and Combustion		
030	Boilers		
031	Water Treatment		
032	Turbines		
033	Environmental Protection		
034	Instrumentation and Control		
035	Power Generation		
036	Electrical Systems and Equipment		
037	Plant Protection		
038	Gas Turbines and Diesels		
039	Service Water System		
040	Circulating Water System		
041	Fire Protection System		
042	Closed Cooling Water System		
043	Demineralized Water System		
044	Compressed Air System		
045	Condensate System		

Module #	Module Title	Date Completed	Initials
046	Feedwater System		
047	Steam Generator System		
048	Combustion Air and Flue Gas System		
049	Boiler Fuel System		
050	Ash Handling Systems		
051	Precipitator System		
052	Flue Gas Desulfurization System		
053	Main, Reheat and Auxiliary Steam Systems		
054	Turbine Lube Oil System		
055	Turbine Steam Seal System		
056	Turbine System		
057	Extraction Steam and Heater Drains System		
058	Generator Auxiliaries System		
059	Generator System		
060	Excitation System		
061	125 Volt DC Electrical System		
062	AC Electrical System		
063	Data Acquisition System		
064	Combustion Control System		
065	Electro-Hydraulic Control System		
066	Switchyard System		
067	Boiler Water Sample Analysis		
068	Emissions Monitoring System		
069	Protective Relays System		
070	Unit Integrated Operating Procedure		
071	Alarm Response		
072	Emergency Operating Procedures		

Module #	Module Title	Date Completed	Initials
073	Fundamentals of Plant Efficiency I		
074	Fundamentals of Plant Efficiency II		
075	Factors Affecting Boiler Efficiency		
076	Controllable Losses - Boiler		
077	Factors Affecting Turbine Cycle Efficiency		
078	Controllable Losses - Turbine		
079	Balance of Plant Operation		
080	Power Plant Controls		
081	Case Studies I		
082	Case Studies II		

Comments

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I certify that _____ has performed the above duties as evaluated.

Supervisor's Signature Please print name Date

Employee's Signature Please print name Date