

Training and Qualification of an Operational Nuclear Workforce

Dr. Gary L. Scott, Senior Nuclear Engineer (ret)

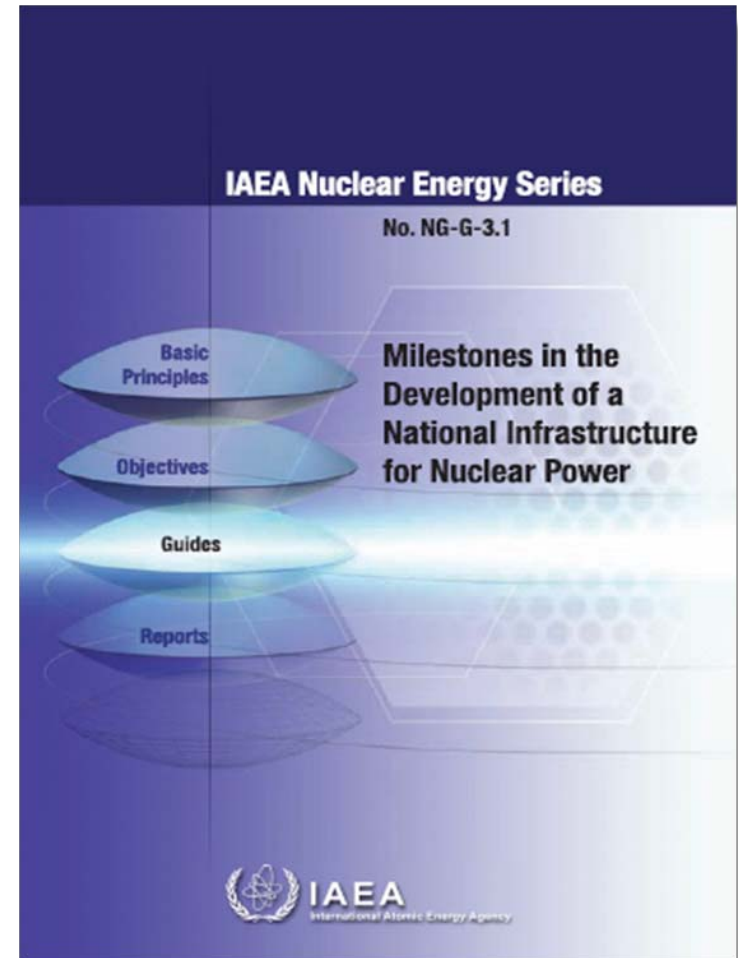
Excel Staffing: Consultant to Carlsbad Field Office





IAEA document No. NG-G-3.1

- Makes Specific Reference to a trained nuclear workforce (Section 3.10)
- Operational Safety, Security, and Radiation Protection are vital
- **Fundamental Scientific and Technical Training is not enough... Several years of specialized training are required**
- Similar to DOE, NNSA, NRC, and Other U.S Regulatory Entities



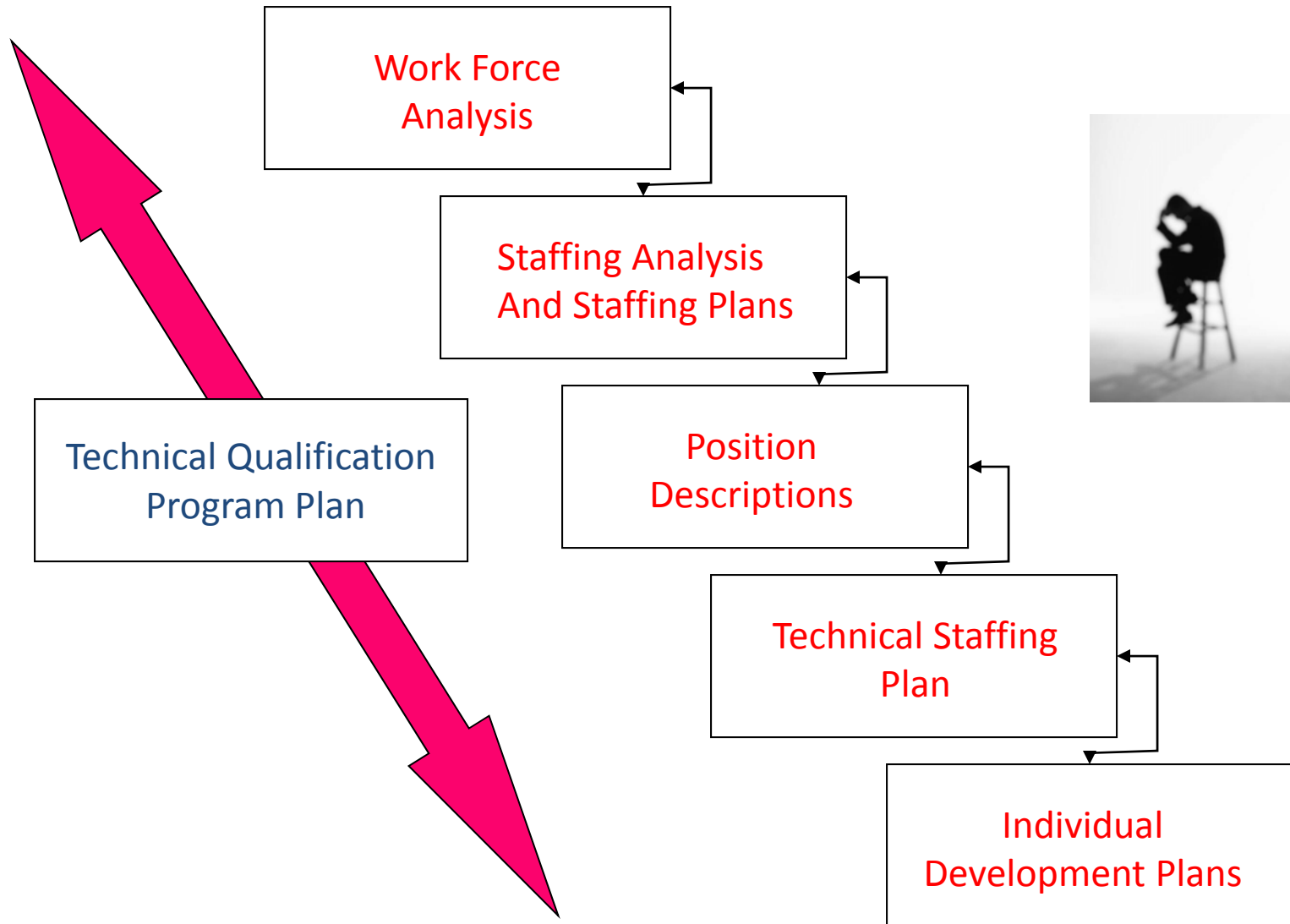
Infamous Boxology: Organization Charts

- Organization Charts identify functionality of each divisional group supporting the mission

HOWEVER!

- How can organizations develop appropriate staffing plans and preserve critical technical capabilities if the organizational chart doesn't reflect the specific need for particular skill sets?

Philosophy to Identify Technical Needs of an Organization



What is Workforce Analysis?

- **Strategic Workforce Planning** involves analyzing and forecasting the talent required to execute mission requirements, proactively rather than reactively
- **Staffing Analysis and Planning:** What **positions** are required to fulfill the mission? *Not* a focus on People
- **Position Descriptions:** Describes position requirements to fulfill the mission and is derived from the staffing analysis and planning
- **Staffing Plans (Critical Strategic Activity)** enables organizations to identify which positions are Technical, Administrative, etc.
- **Technical Staffing Plans** identify *positions* that are *required* to participate in the DOE's **Technical Qualification Program (TQP)**
- **Lessons-Learned** processes at the site level provide continuous feedback and improvement to the FTCP through the local FTCP agent and TQP reviews

Why Position Descriptions?

- **Position Descriptions (PD)** are essential to the human resource function of hiring the right individual for the job
 - Identifies and Defines MAJOR Roles and Responsibilities
 - Depicts areas of technical requirements for the position
 - Sometimes PDs indicate a TQP requirement (18 months to qualify in the position)
 - TQP requirements should be provided in the job posting at a minimum
 - PDs also provide a source of information related to continuous training and continuing education Planning

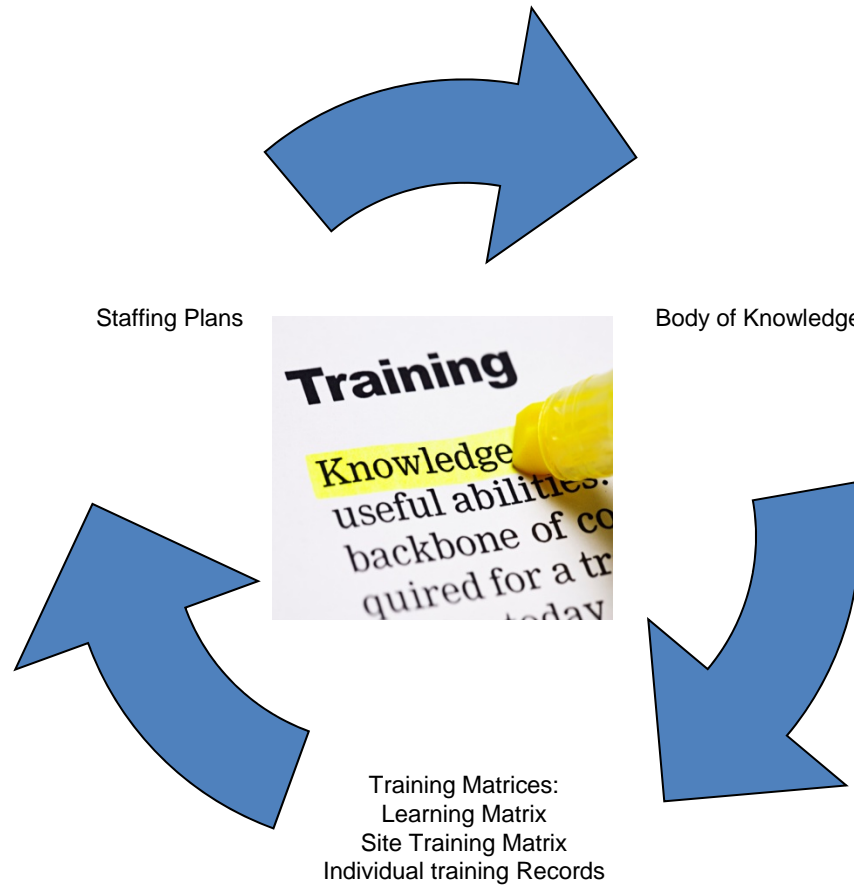
Technical Staff... Identified

- A TQP *Questionnaire* is provided to DOE Supervisors to assist in technical staffing planning
- The responses should be based on the **current tasks and responsibilities** as *defined* in the Position Description.
 - 1. Do the position duties and responsibilities require providing assistance, guidance, direction, oversight, or the evaluation of management and operating (M&O) contractor activities that could **significantly impact** the safe operation?
 - 2. Is the position in the **direct oversight** of site programs affecting safety?
 - 3. Can the incumbent of the **position make recommendations** which can affect safety?

Individual Development Planning

- Identifies areas of required training, especially to meet requirements depicted in the Technical Qualification Program
- Provides for a **Qualified – well informed** Individual making critical decisions that may impact safe operations
- Essential tool for training *budget* planning
- Essential to career growth for the individual
- Creates a Highly Competent Workforce
- Can be expanded with supervisor approval for training outside of the TQP requirements.. Cross-over training, etc.
- Key to program success is: **Continuing Education Planning**

Continuing Education Planning

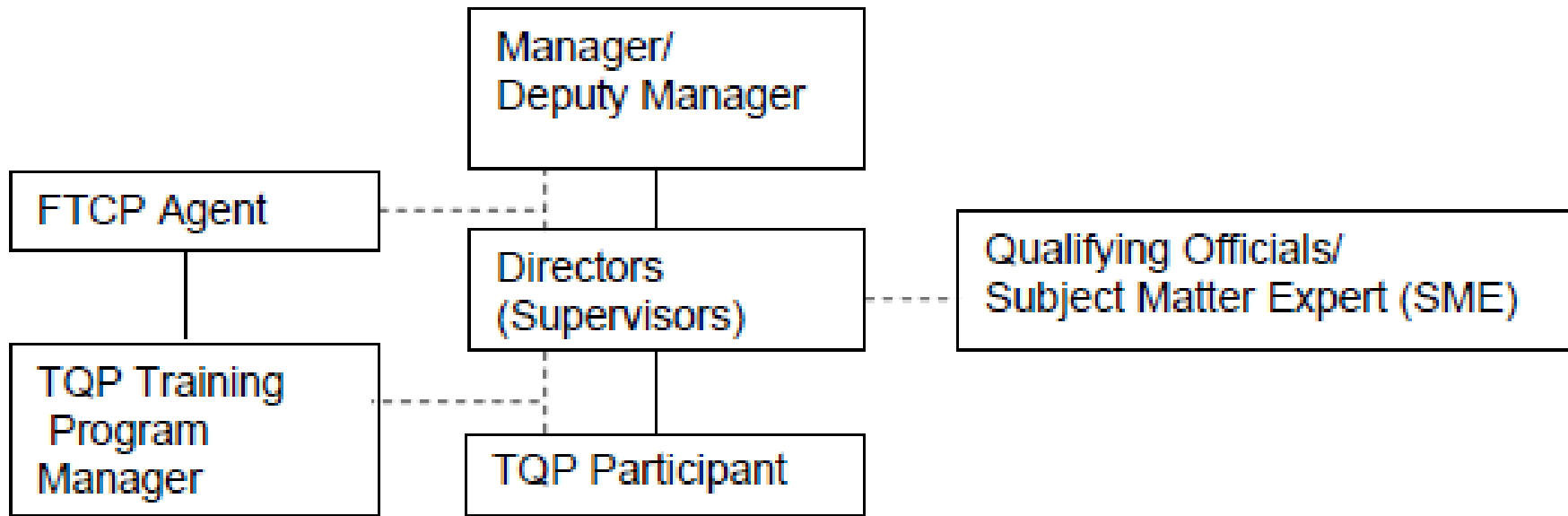


Sample: TQP Body of Knowledge

Knowledge/FA	STSM	NSS	HP	IH	FPE	TOTAL
Emergency Mgmt						5
Program Oversight						5
Occurrence Reporting						5
Tech. Stds.						2
Training and Qualifications						1
Quality Assurance						5
Facility Safety						5
Startup/Restart Nuclear Facility						2
Real Property Asset Mgmt						1
Maintenance Mgmt						3
Rad Waste Mgmt						2
Worker Protection Prog						3

Example of the TQP Process

6.0 TQP OPERATING STRUCTURE



The Contractor's Perspective

Contractor's Perspective

- DOE requires its contractors to provide a trained and qualified workforce to safely operate their facilities
 - Requirement is Contractual
 - DOE provides oversight and reviews and approves the Contractor's Training Implementation Matrix
- DOE utilizes an oversight process implemented by trained and qualified individuals to ensure contractual requirements are satisfied

Contractor's Perspective

- The Contractor's training program is organized and managed to facilitate planning, directing, evaluating, and controlling a systematic training process that fulfills **job-related needs** and regulatory requirements
- **Requirements Driven:** The program is designed and maintained to implement the requirements of 10 CFR 851.23 and DOE Order 426.2.
- They are *performance-based training programs* and meet the personnel qualification requirements for DOE reactor/nonreactor nuclear facilities
- To achieve the training program objective, employees are provided with training **relevant to their positions and commensurate with their responsibilities.**

Development of Contractor Training

- Formal training programs for personnel who support nuclear facilities are listed in the Training Implementation Matrix (TIM)
- The TIM describes the operating organization and the training/qualification programs for positions in the operating organization. **AND IS APPROVED BY DOE**
- It lists each position that is subject to DOE Order 426.2, and includes a matrix that shows the status of programs relative to the requirements of DOE Order 426.2.

Contractor's Perspective

- The technical content of training is developed, verified, and validated using the following elements:
 - Needs/job analysis and identification of tasks for training
 - Development of learning objectives
 - Development of lesson plans and training guides
 - Evaluation of trainee mastery of learning objectives
 - Evaluation of the effectiveness of training.

Summary

- ✓ *Training and Maintaining a Qualified Nuclear Workforce* is crucial to safe operations
- ✓ Dependent upon critical Workforce Analysis and Staffing plans
- ✓ Qualification Programs require constant vigilance with periodic reviews and revisions
- ✓ Requires budget planning that *includes* travel to attend training
- ✓ The Department of Energy and its Contractors are committed to developing and maintaining a technically competent workforce to accomplish its mission in a safe and efficient manner