

Attachment 2 - Procedure NE 1.3

"Staffing, Training, Qualification of Personnel

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Subject Title <b>STAFFING, TRAINING, QUALIFICATION OF PERSONNEL</b>		Rev. <b>NE-1.3, Rev. 3</b>
Organizational Unit <b>NUCLEAR OPERATIONS NUCLEAR ENGINEERING</b>		Page <b>1 of 6</b>
Issued/Revised by <b>W. F. Colbert</b> <i>W.F. Colbert</i>		Date <b>8-23-83</b>
Prepared by <i>DM</i> <b>D. Majewski/T. J. O'Keefe</b> <i>Lot</i>	EQA <i>8-23-83</i>	Date <b>8-23-83</b>

**1.0 Purpose**

This procedure provides the guidelines for staffing, training, and qualifying professional/technical staff members of Nuclear Engineering.

This procedure's provisions, when translated into action and performance, assures that Detroit Edison fulfills the commitments made to the NRC, (Reference 6.8).

**2.0 Applicability**

This procedure applies to the professional/technical staff members of Nuclear Engineering.

**3.0 Responsibility**

It is the responsibility of the Nuclear Engineering Director and General Supervisors, and the Supervisor, Radiological Emergency Response Preparedness (RERP) to provide for the staffing, training and qualification of technical staff members to fulfill the various functional responsibilities of Nuclear Engineering.

**3.1 Director, Nuclear Engineering**

The Director, Nuclear Engineering is responsible for ensuring that technical staff members are properly selected and are qualified to fulfill the responsibilities of Nuclear Engineering.

**3.2 General Supervisor, Nuclear Safety and Plant Engineering (NSPE)**

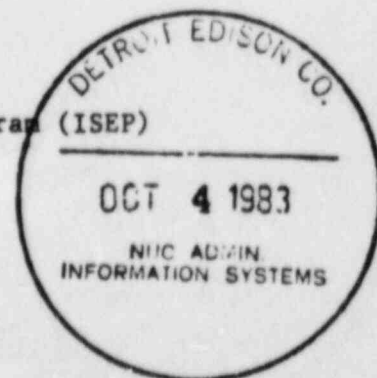
The General Supervisor, NSPE is responsible for selecting and utilizing qualified professional staff members in the following functional areas:

**3.2.1 Safety and Performance Analysis**

1. Shift Technical Advisors (STA)
2. Independent Safety Engineering Program (ISEP) Activities

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3. Nuclear Safety Analysis and Engineering
4. Performance and Experience Analysis

#### 3.2.2 System and Plant Engineering

1. Systems and Configuration Engineering
2. Design Review and Technical Support

#### 3.2.3 Licensing Activities

### 3.3 General Supervisor, Nuclear Fuel

The General Supervisor, Nuclear Fuel is responsible for selecting and utilizing qualified professional staff members in the following functional areas:

#### 3.3.1 Out-Of-Core Fuel Management

1. Uranium Purchase, Conversion, Enrichment, Fuel Fabrication, and Delivery Planning
2. Fuel Cost Analysis and Fuel Cycle Contracting
3. Spent Fuel Discharge and Refueling Planning

#### 3.3.2 In-Core Fuel Management

1. Reactor Data Base and PCIOMR Programs
2. Core Performance Analysis
3. Overall Core Management Strategy

#### 3.3.3 Reactor Engineer Program

### 3.4 General Supervisor, Nuclear Technology

The General Supervisor, Nuclear Technology is responsible for selecting and utilizing qualified professional staff members in the following functional areas.

#### 3.4.1 Materials and Methods

1. Review and Assessment of Welding and Material Selection
2. Inservice Inspection Program
3. Codes and Standards Application
4. Non-Destructive Examination Program

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### 3.4.2 Radiological Technology

1. Radiological Monitoring Program
2. Radiation Protection and ALARA Program
3. Radioactive Waste Program
4. Monitoring Plant Water Chemistry Program

### 3.5 Supervisor, Radiological Emergency Response Preparedness (RERP)

The Supervisor, RERP is responsible for selecting and utilizing qualified staff members for carrying out the Radiological Emergency Response Plan maintenance program.

### 4.0 Interface

The Nuclear Engineering Director and General Supervisors, and the Supervisor, RERP interface with Nuclear Training for staff training and qualification. This interface establishes the qualification requirements necessary for technical staff members to perform their assigned tasks, and charges Nuclear Training to provide the needed instruction for personnel to meet these qualifications. The methods by which training programs are developed, implemented, evaluated, and documented are detailed in the related Nuclear Training procedures and course description documents.

### 5.0 Definitions

- 5.1 Management/Technical Support - Qualifications of persons filling management positions in technical support positions include an appropriate Bachelors Degree and six years of experience in power plant operation and/or design.
- 5.2 Professional/Technical Staff - Those Technical Staff members who have a Bachelors Degree in Engineering, the Physical Sciences, or the equivalent professional experience in the field for which they are providing Technical Support. Those individuals in a "lead" category and those who provide primary support to the plant in the event of an emergency, shall have three years experience in their field.
- 5.3 Shift Technical Advisor (STA) - The Technical Staff member who is responsible for plant safety assessment during transients, and operations assessment during normal operation (Reference 6.3).
- 5.4 Reactor Engineer - The Technical Staff member who is responsible for plant reactor physics, core measurements, core heat transfer, and core physics testing program (Reference 6.4).

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## 6.0 References

- 6.1 ANSI N18.1 - 1971, "Selection and Training of Nuclear Power Plant Personnel" (also see Reg. Guide 1.8, Rev. 1R).
- 6.2 ANSI N18.7 - 1976/ANS-3.2, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants" (also see Reg. Guide 1.33, Rev. 2).
- 6.3 Procedure NE-3.2, "Shift Technical Advisors Program"
- 6.4 Procedure NE-4.4, "Reactor Engineers Program"
- 6.5 Training Program Descriptions
- 6.6 EF2-53674, "Supplemental Responses to Licensee Qualification Audit"
- 6.7 NUREG-0731, "Guidelines for Utility Management Structure and Technical Resources"
- 6.8 Licensing commitment implemented by this document: 1.0194.
- 6.9 FSAR 17.2; 17.2.2.7 - Nuclear Operations Management Plan Policy 2, Sections 10.5 and 11.3.

## 7.0 Discussion

- 7.1 Nuclear Engineering is responsible for establishing functional levels, assigning personnel responsibilities and defining qualification requirements commensurate with these positions.
- 7.2 It is also the responsibility of Nuclear Engineering to provide subject matter expertise necessary for the development of appropriate training courses. Nuclear Training develops and implements the Nuclear Engineering training courses and documents the qualification status. It is the responsibility of the Director, Nuclear Engineering or designee, to review and approve instructional materials for accuracy and adequacy for all courses prior to their presentation for qualification.
- 7.3 Personnel making changes to this document will ensure that the change will not negate the intent of a licensing commitment.



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## 8.0 Procedures

### 8.1 Selection of Qualified Personnel

#### 8.1.1 Functional Levels and Assignment of Responsibility

Various levels of qualified individuals are needed to establish a functioning Nuclear Engineering activity to fulfill the responsibility of Nuclear Engineering.

The qualification of an individual for a particular level of responsibility is based on his or her academic training, experiences in general engineering and in nuclear power plants, and on-the-job familiarization in that particular job. Attachment 9.2 gives minimum qualifications for key technical staff personnel.

#### 8.1.2 Replacement of Personnel

Personnel replacements are accomplished with individuals who have qualifications equivalent to the minimum requirements for the personnel they are replacing. Additional training will be expedited where needed.

A reasonable amount of job overlap is desired so that the new personnel have an adequate understanding of their new duties and responsibilities prior to assuming these duties through on-the-job familiarization.

### 8.2 Program

#### 8.2.1 Description

Although engineers in Nuclear Engineering are well versed in their field of specialization, it is important that they become familiar with topics affecting plant work at Fermi-2. In order for the new engineers to become familiar with, develop and maintain the ability to operate as a member of Detroit Edison Nuclear Engineering, they receive instruction in quality awareness, conduct of nuclear operation, and Detroit Edison procedures. Additionally, special and advanced training for qualification, and professional development and on-the-job training will be offered. The program has three (3) levels: 1) indoctrination, 2) advanced, and 3) specialty.

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1. Indoctrination - This is designed to familiarize personnel with the technical objectives of Fermi-2, codes and standards, quality assurance, administrative procedures and operational guidelines. Additionally, special task qualifications (Radiation Worker, Generic Systems and Procedures, etc.) and "on-the-job" training will be offered. Training will be completed as needed during the first six (6) to eight (8) weeks of job assignment.
2. Advanced - This training is designed to enhance the abilities of engineers to perform assigned duties. It will have broad applications within Nuclear Engineering and allow for a more versatile and competent staff member.
3. Specialty - This training is to be offered on an "as needed" basis. It will provide the engineer with information that will promote safe and reliable plant operations for staff personnel who have unique duties and responsibilities.

#### 8.2.2 Courses

1. Specific details are presented in the applicable training Program Descriptions. Contents of these training Program Descriptions relative to Nuclear Engineering Personnel are subject to approval by the Director and General Supervisor of Nuclear Engineering.
2. Training programs will be updated to reflect Fermi-2 plant modifications and changes (Reference 6.1).
3. The retention and content of training and personnel records is the responsibility of Nuclear Training (Reference 6.9).

#### 9.0 Attachments

##### 9.1 Nuclear Engineering Procedures Training Program

##### 9.2 Minimum Qualifications of Key Technical Staff Personnel

NUCLEAR ENGINEERING PROCEDURES TRAINING PROGRAM

I. Basic Philosophy:

The length of training time required will, of course, depend on the depth of training desired. But no amount of training will guarantee that the procedures will be followed in day-to-day activities. Unlike a training program for craft trainees, a training program for the professionals should emphasize on the attitude and awareness of the individual for performing a job well within the overall context of responsible professionalism. Therefore, for the professionals in Nuclear Engineering, the indoctrination and self-reading program will be sufficient.

II. Objectives:

1. Instill the Importance of Procedures

Instill the importance of following procedures in performing functions of Nuclear Engineering.

2. Stress Availability of Procedures

Make them aware that there are procedures available for them to utilize in performing almost any kind of activities assigned to them.

3. Familiarization with Procedures

Walk through some of the procedures and instructions with them to familiarize them with the use of these procedures.

4. Stress Procedures as "Living Documents"

Stress that the procedures are "Living Documents" that have to be updated and modified as experiences accumulate in performing certain activities within Nuclear Engineering.

III. Organization of the Training Courses:

1. Part-1: Indoctrination (1-2 hours)

- a. Objectives
- b. Organization of Procedures Manual
- c. Procedures and Instructions
- d. Preparation and Revision of Procedures and Instructions



III. Organization of the Training Courses: (Cont'd)

2. Part-2: Self-Reading Program (8 hours)

- a. List of Required Reading (for all members)
    - o Manual Preamble and Commitment to Quality Assurance
    - o All Procedures/instructions in Sections 1, 2 and 3 of the Nuclear Engineering Procedures Manual.
  - b. List for Required Reading (for N. F. staff)
    - o All remaining procedures in Chapter 4.
  - c. List for Required Reading (for N. T. staff)
    - o All remaining procedures in Chapter 5.
  - d. List for Required Reading (for RERP staff and all personnel assigned for RERP duties)
    - o All RERP procedures.
3. Completion of Sign-Off Form
- o Nuclear Training will provide this form for the Nuclear Engineering staff to sign upon completion of this training program.

IV. Topics for Indoctrination Session:

1.0 Introduction

This manual contains the administrative and technical procedures and instructions to be used by Nuclear Engineering in support of activities concerning the Fermi-2 Power Plant. Detailed instructions for accomplishing these activities are included, as required, following the applicable procedure.

2.0 Organization of the Manual

The Nuclear Engineering Procedure Manual consists of five major chapters, each chapter containing serially numbered material corresponding to a specific functional area of responsibility within Nuclear Engineering. The five chapter titles and summaries of their contents are given in the following subsections.

IV. Topics for Indoctrination Session: (Cont'd)

2.0 (Cont'd)

Procedures under a given chapter are identified by the chapter number followed by a decimal and a sequential number as indicated in the table of contents. Instructions pertaining to a procedure also are identified by chapter numbers followed by a decimal sequential number following the procedure number. For example NE-2.1.2, General Licensing Review, Assessment Action Assignment and Follow, is an instruction under NE-2.1, Licensing and Regulatory Requirements.

2.1 Chapter 1, Administrative Procedures

This chapter addresses procedures and instructions covering general administrative matters such as organization, personnel qualification and training, quality assurance, document logging and control, interface with other organizations, and general guidelines for procedure and instruction preparation and modifications.

These procedures and instructions are applicable to all groups in Nuclear Engineering.

2.2 Chapter 2, General Technical Procedures

Chapter 2 addresses procedures and instructions covering a variety of general technical methods, including licensing, engineering reviews and evaluations, computer code assessment and verification, nonconformance reporting, and release of technical information to agencies or individuals outside Edison.

These procedures and instructions are applicable to all groups in Nuclear Engineering.

2.3 Chapter 3, Nuclear Safety and Plant Engineering Procedures

This chapter covers procedures and instructions on engineering support and services to the plant, including safety, transient, and system analyses, engineering assurance, and system configuration change controls.

These procedures and instructions are primarily applicable to the Nuclear Safety and Plant Engineering section, of Nuclear Engineering.

IV. Topics for Indoctrination Session: (Cont'd)

2.4 Chapter 4, Nuclear Fuel Procedures

Chapter 4 deals with procedures and instructions covering in-core and out-of-core nuclear fuel management, including core reload licensing analyses, procurement planning and fuel cost analyses and the plant reactor engineer program.

These procedures and instructions are primarily applicable to the Nuclear Fuels section of Nuclear Engineering.

2.5 Chapter 5, Nuclear Technology Procedures

This chapter covers the following: procedures and instructions providing technical support in specialized engineering and scientific disciplines, including materials aspects of plant modifications associated with plant operation (materials tests, codes and standards, NRS materials-related rules) radiological technology associated with plant operations (monitoring, health physics, radwaste management, etc.); meteorological and environmental monitoring; and state agency certifications.

These procedures are primarily applicable to the Nuclear Technology section of Nuclear Engineering.

3.0 Radiological Emergency Response Preparedness Procedures

These procedures describe the activities of the Radiological Emergency Response Preparedness group. They are prepared and maintained by the RERP Group in separate manuals titled: Emergency Plan Administrative Procedures Manual, and RERP Procedures Manual.

4.0 Nuclear Engineering Procedures and Instructions

a. Procedures

A procedure is a written description and explanation of a function, duty, or responsibility. A procedure is more general than an instruction.

IV. Topics for Indoctrination Session: (Cont'd)

4.0 (Cont'd)

b. Instructions

An instruction is a written description and explanation of a task or set of actions necessary to accomplish the intent of a procedure. An instruction is more detailed than a procedure because it tells precisely how to do something in a logical sequence.

5.0 Commitment to Adhere to the Procedures and Instructions

These procedures and instructions have been prepared to ensure the safety and reliable operation of the Fermi-2 Power Plant, and to enhance the health and safety of both operating personnel and the general public. All Nuclear Engineering personnel are required to follow these procedures and instructions. Deviations from Nuclear Engineering procedures that might be required due to unusual circumstances may be authorized and documented by the appropriate General Supervisor or the Director of Nuclear Engineering.

6.0 Administration

a. Approval and Certification

This procedure manual has been prepared by Nuclear Engineering and has been approved for issuance and use by the Director, Nuclear Engineering, as denoted by the signature and date on the title page.

b. Authority and Implementation

- (1) The Director, Nuclear Engineering has the responsibility for assuring the effective administration and implementation of this manual. Within each affected area, administration and implementation of the manual is the responsibility of the Nuclear Engineering, Director, General Supervisors, and Supervisors. The manual is implemented in accordance with the requirements contained in this section and, as necessary, by means of an appropriate instruction.
- (2) The provisions of this manual may be implemented for Fermi-2 power plant prior to fuel load of the unit, as deemed necessary by the Director, Nuclear Engineering. After fuel load of the plant, all the provisions contained herein become effective.

IV. Topics for Indoctrination Session: (Cont'd)

6.0 (Cont'd)

- (3) All Nuclear Engineering personnel are responsible for the implementation of this manual as it pertains to the performance of their activities. As part of this responsibility, Nuclear Engineering personnel will inform the responsible supervisory personnel and/or take appropriate corrective action when a deficiency in the implementation of the requirements contained herein is discovered.

c. Revisions

Revisions (including additions and deletions) to this manual are issued as necessary for the following reasons:

- (1) To improve the interface with other Edison organizations,
- (2) To satisfy current regulatory requirements,
- (3) To correct mistakes in the manual,
- (4) To facilitate use of the manual, and
- (5) To improve the performance and standardize activities of Nuclear Engineering.

Procedures NE-1.2 and NE-1.2.2 explain in detail the methods used to revise a procedure or an instruction.

d. Distribution

Numbered copies of the manual (controlled copy) are distributed by Nuclear Administration, Information Systems.

e. Format and Numbering System

For correct format for procedures and instructions refer to procedures NE-1.2 and NE-1.2.2

7.0 Walk Through the Typical Procedures



MINIMUM QUALIFICATION OF KEY TECHNICAL STAFF PERSONNEL

The following positions require minimum qualifications of an appropriate Bachelors Degree and six years of experience in power plant operation and/or design or related professional experience.

- o Director, Nuclear Engineering
- o General Supervisor, Nuclear Safety and Plant Engineering
- o General Supervisor, Nuclear Technology
- o General Supervisor, Nuclear Fuel
- o Supervisor, Radiological Emergency Response Preparedness
- o Supervisor, Safety and Performance Analysis
- o Supervisor, System and Plant Engineering
- o Supervisor, Licensing
- o Supervisor, Materials and Methods
- o Supervisor, Radiological Technology
- o Supervisor, Nuclear Fuel Cycle
- o Supervisor, Nuclear Fuel Engineering
- o Reactor Engineer

Lead technical personnel shall have minimum qualifications of a Bachelors Degree in Engineering or the Physical Sciences or the equivalent and professional experience in the field for which they are providing Technical Support. Those individuals in a "lead" category and those who provide primary support to the plant in the event of an emergency shall have three years experience in their field.

Attachment 3 - Nuclear Operations Directive  
"Independent Safety Engineering Activities"

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Enrico Fermi Atomic Power Plant Unit 2

## **Nuclear Operations Directives**

Subject

**Independent Safety Engineering Activities**

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### **Independent Safety Engineering Activities Nuclear Operations Directive**

#### PURPOSE

The purpose of this policy is to reinforce Detroit Edison's position with respect to the responsibilities of the Director, Nuclear Engineering and the requirement to implement the Independent Safety Engineering (ISE) activities as set forth in the FSAR and plant technical specifications.

These ISE activities are intended to ensure that Fermi 2 is operated and maintained in a safe manner.

Nuclear Engineering, Nuclear Safety and Plant Engineering, will provide a lead Independent Safety Engineer who administratively reports to the Supervisor, Safety & Performance Analysis of Nuclear Engineering and who functionally reports to the Director, Nuclear Engineering. The Director, Nuclear Engineering, a Nuclear Operations Management representative, is independent of the Plant Superintendent.

#### GENERAL/RESPONSIBILITIES

The lead Independent Safety Engineer is, at the direction of the Director, Nuclear Engineering, responsible for the performance and accountability of the Independent Safety Engineering activities. Those responsibilities include examining plant operating characteristics, NRC issuances, Licensee Event Reports and other sources which may indicate areas for improving plant safety. Other responsibilities include surveillance of plant operations and maintenance activities to provide independent technical verification that these activities are performed correctly.

The Director, Nuclear Engineering (and those who report to him) will ensure that those engineers receiving ISE assignments will support the ISE activities in a timely fashion as required to support compliance with the Fermi Technical Specifications.

The lead Independent Safety Engineer is responsible for forwarding ISE recommendations to the Director, Nuclear Engineering. The Director will review the recommendations for implementation and process them as necessary. In cases of a dispute between Nuclear Engineering and Nuclear Production the recommendation will be channeled to the Manager of Nuclear Operations for resolution/disposition.

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Enrico Fermi Atomic Power Plant Unit 2

## Nuclear Operations Directives

Subject

Independent Safety Engineering Activities

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### POLICY

In view of the purpose and responsibilities aforementioned, it is the policy of Detroit Edison to provide the following in support of these activities as set forth in the Fermi 2 Technical Specifications:

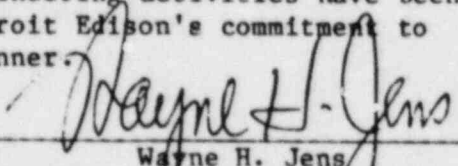
1. The lead Independent Safety Engineer will possess a minimum of 5 years nuclear experience and demonstrate management and leadership capabilities.
2. Those assigned to assist the lead Independent Safety Engineer will possess the expertise in the field of the assignment necessary to effectively and expediently conduct the assigned duties.
3. The Director, Nuclear Engineering will provide engineering support to assist the lead Independent Safety Engineer in these activities such that it will be equivalent to five (5) engineers inclusive of the lead engineer.

As a minimum, those engineers assigned Independent Safety Engineering activities will have:

- a. Education: Bachelors degree in engineering or a related science. The personnel assigned will have a varied background to cover the fields of mathematics, reactor physics, chemistry, materials, reactor thermodynamics, fluid mechanics, heat transfer, and electrical and reactor control theory.
- b. Experience: Two years of related professional-level experience.
- c. Training: Knowledge in the details of design, function, arrangement, and operation of the plant systems, control room instruments, and control functions.

Additional support from sources other than Nuclear Safety and Plant Engineering will be utilized in special circumstances when the lead Independent Safety Engineer, with the concurrence of the Director, Nuclear Engineering, deems it necessary. Those persons will have a Bachelors Degree in Engineering or a related science and two years of related professional-level experience in their respective fields of expertise to conduct the assignment as it applies to Fermi 2.

Conscientious implementation of this Directive will provide adequate assurance that the Independent Safety Engineering activities have been performed in a manner consistent with Detroit Edison's commitment to operate and maintain Fermi 2 in a safe manner.

  
Wayne H. Jens  
Vice President-Nuclear Operations

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