



*Attachment 1*  
**Pennsylvania Power & Light Company**

Two North Ninth Street • Allentown, PA 18101 • 215/770-6181

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*page 1 of 4*

JAN 08 1988

Harold W. Keiser  
 Vice President-Nuclear Operations  
 215/770-7502

Mr. Thomas T. Martin, Director  
 Division of Radiation Safety and Safeguards  
 U.S. Nuclear Regulatory Commission  
 Region I  
 631 Park Avenue  
 King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION  
 NRC INSPECTION REPORTS 50-387/87-19  
 AND 50-388/87-19  
PLA-2959 FILE R41-1C, R41-2

Docket Nos. 50-387  
 and 50-388

Dear Mr. Martin:

This letter provides PP&L's response to your letter of November 30, 1987 which forwarded NRC Region I Combined Inspection Reports 50-387/87-19 and 50-388/87-19 with Appendix A, Notice of Violation.

The Notice advised that PP&L was to submit a written reply within thirty (30) days of the date of the letter. However, as discussed with Mr. A. R. Blough of NRC Region I on December 30, 1987, PP&L has been authorized to delay the response until January 8, 1988. We trust that the Commission will find the attached response acceptable.

Very truly yours,

H. W. Keiser  
 Vice President-Nuclear Operations

Attachment

cc: NRC Document Control Desk (original)  
 NRC Region I  
 Mr. J. R. Stair - NRC Resident Inspector  
 Mr. M. C. Thadani, NRC Project Manager

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Violation (387/87-19-01)

Technical Specification 6.3 requires that each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions. ANSI N18.1 - 1971 requires in Section 4.3 that supervisors possess a minimum of four years of experience in the craft or discipline they supervise.

Contrary to the above, as of October 1987, the Radiological Operations Supervisor possessed only eight months of experience in the area of Radiological Controls.

Discussion:

PP&L will not contest the violation because it was the result of an inadequate internal program related to staffing qualifications, in that PP&L's views on the staffing of some management/supervisory positions were not properly defined. We will revise our program to better define our intent on the staffing of manager/supervisor positions.

Additionally, in response to the violation, PP&L performed an in depth review of the Health Physics organization. This review concluded that the Health Physics organization meets Technical Specification Section 6.3 and that the incumbent in the Radiological Operations Supervisor position because of his broad based nuclear and managerial experience actually strengthens the Health Physics organization.

At the management level the current organization is staffed such that the Radiological Operations Supervisor reports directly to the Health Physics/Chemistry Supervisor who in turn reports directly to the Assistant Superintendent of Plant. Although two individuals filled the Health Physics/Chemistry Supervisor position since January 1987, both are fully qualified to ANSI N18.1-1971 Section 4.4.4 and Regulatory Guide 1.8, September, 1975. Parallel to the Radiological Operations Supervisor is the Radiological Protection Supervisor who is also fully qualified to ANSI N18.1-1971 Section 4.4.4 and Regulatory Guide 1.8, September, 1975.

Reporting directly to the Radiological Operations Supervisor are the Health Physics Foreman-Instrumentation and Sources, the Health Physics Foreman-Operations and a Health Physicist/ALARA Planning and Scheduling. Individuals filling these positions since January 1987 are all fully qualified to Section 4.3.2 of the ANSI standard. Additionally, all the HP Assistant Foremen at Susquehanna meet or exceed the qualifications for their positions.

At PP&L, we have developed our own personnel qualification standards which meet or exceed industry standards. Many of our current manager/supervisor positions have no equivalent industry standards. These "intermediate level" management positions are in the line organization between senior plant functional management (qualified to Section 4.2 of the ANSI standard or Regulatory Guide 1.8 as applicable) and plant foreman (qualified to Section 4.3.2) or other technically qualified/licensed personnel. PP&L's current qualification standards, which are contained in the FSAR, Nuclear Department

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Instructions, and plant administrative procedures, currently do not accurately reflect PF&L's intent that technically and/or managerially qualified individuals can satisfactorily fill these "intermediate level" manager/supervisor positions. We will revise our program to incorporate the proper qualifications for individuals filling "intermediate level" manager/supervisor positions.

PF&L believes this interpretation meets the intent of ANSI N18.1-1971 and also Section 6.3 of the Technical Specification. We maintain that the Radiological Operations Supervisor position is not an ANSI equivalent position, and therefore, can be filled by an individual having qualifications equivalent to Section 4.2.4. The incumbent fully meets the requirements of Section 4.2.4 (see response for qualifications).

Response:

1) Corrective steps which have been taken and the results achieved:

PF&L has re-evaluated the justification for placing the incumbent in the Radiological Operations Supervisor's position and has concluded that based on the HP/Chemistry Supervisor and Rad Protection Supervisor meeting Section 4.4.4 of ANSI 18.1-1971 and Regulatory Guide 1.8, the HP Foremen and Assistant Foremen meeting Section 4.3.2 of ANSI 18.1-1971, and the current Radiological Operations Supervisor meeting the requirements of Section 4.2.4 of ANSI 18.1-1971 as outlined below, the intent of Technical Specifications Section 6.3 has been met.

The qualification of the incumbent used to support our conclusion are identified below:

M. S. Nuclear Engineering                      The Pennsylvania State University

B. S. Chemical Engineering                      The Pennsylvania State University

Over 20 years of nuclear power experience with particular related Health Physics experience outlined.

6/67 to 2/68 (8 mos.)                      NAVSHIPS 08, Division of Naval Reactors

Coordinating Engineer for materials irradiation testing in support of the naval nuclear power program including technical evaluation of the design of material testing and inspection equipment.

2/68 to 7/68 (5 mos.)                      Bettis Reactor Engineering School

Graduate level studies in nuclear reactor engineering equivalent to work required for Master of Science, including Radiation Shielding and Reactor Physics and Core Thermal Design.

7/68 to 5/72 (3 yrs., 10 mos.)      NAVSHIPS 08, Division of Naval Reactors

Responsible for safety and quality of refueling work for 12 reactor plants including nuclear and radiation shielding.

5/86 (5 weeks)      Oak Ridge Associate University

Obtained Certificate of Completion for Applied Health Physics studies.

2) Corrective steps to be taken to avoid further violations:

PP&L will revise the FSAR Sections 12.5.1.4, 13.1.3.1 and 13.1.3.1.1, the appropriate Nuclear Department Instruction and plant administrative procedures to reflect the suitability of individuals for certain plant management positions.

3) Date of full compliance:

Based on the action taken above, PP&L will be in full compliance upon revisions to the documents stated in (2) above. The procedures will be revised by June 1, 1988. The FSAR will be revised by July 31, 1988.

RDK:cah  
rdkmej101c

6.0 ADMINISTRATIVE CONTROLS6.1 RESPONSIBILITY

6.1.1 The Superintendent of Plant - Susquehanna shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Shift Supervisor or, during his absence from the Control Room, a designated individual, shall be responsible for the Control Room command function. A management directive to this effect, signed by the Senior Vice President - Nuclear shall be reissued to all station personnel on an annual basis.

6.2 ORGANIZATIONOFFSITE

6.2.1 The offsite organization for unit management and technical support shall be as shown on Figure 6.2.1-1.

UNIT STAFF

6.2.2. The unit organization shall be as shown on Figure 6.2.2-1 and:

- a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2.2-1.
- b. At least one licensed Reactor Operator assigned to and qualified on that unit shall be in the control room when fuel is in the reactor. In addition, while the reactor is in OPERATIONAL CONDITION 1, 2 or 3, at least one licensed Senior Reactor Operator qualified on this unit shall be in the Control Room. This individual may be qualified on both units and be serving in this capacity on both units.
- c. A health physics technician\* shall be onsite when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
- e. A site Fire Brigade of at least 5 members shall be maintained onsite at all times\*. The Fire Brigade shall not include the Shift Supervisor and the 2 other members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

\*The health physics technician and Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

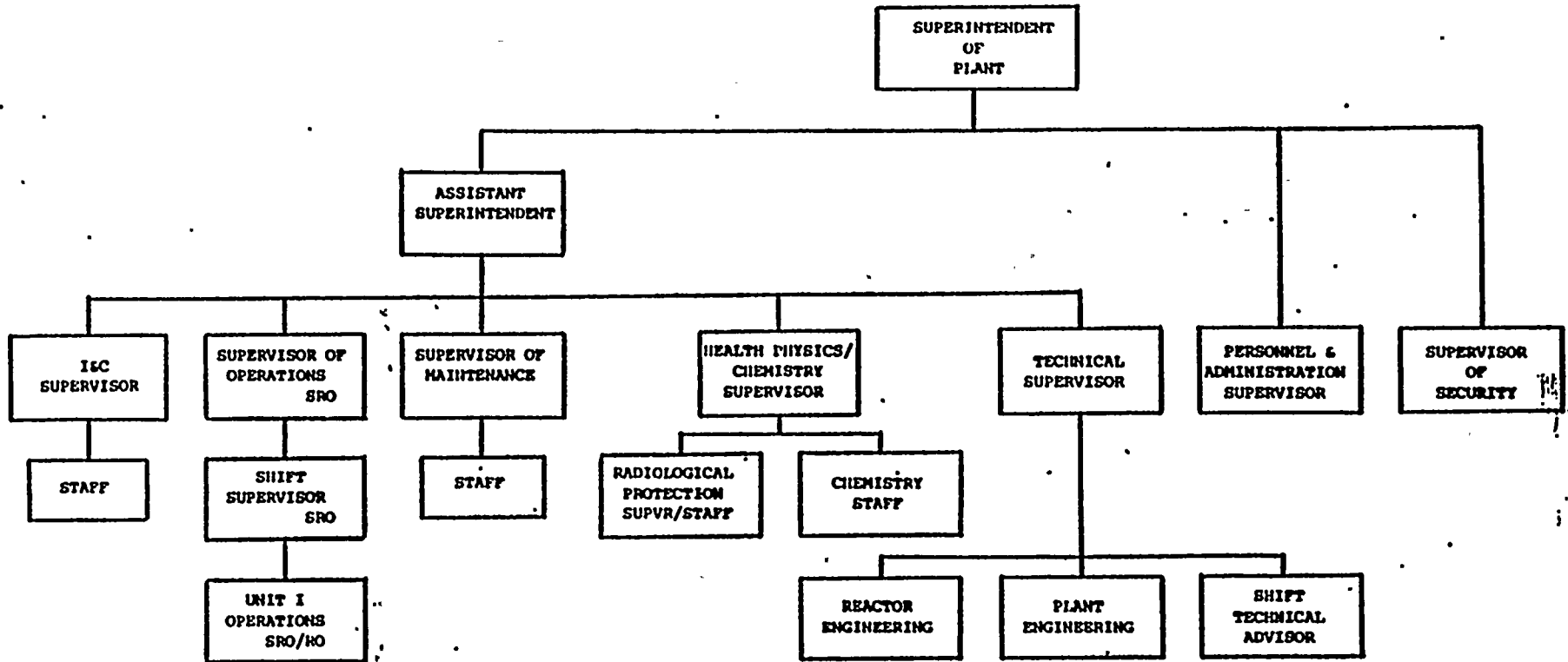


FIGURE 6.2.2-1  
UNIT ORGANIZATION

2013

## ADMINISTRATIVE CONTROLS

### 6.2.3 NUCLEAR SAFETY ASSESSMENT GROUP (NSAG)

#### FUNCTION

6.2.3.1 The NSAG shall function to examine unit operating characteristics, NRC issuances, industry advisories, Licensee Event Reports, and other sources of plant design and operating experience information, including plants of similar design, which may indicate areas for improving plant safety.

#### COMPOSITION

6.2.3.2 The NSAG shall be composed of at least five dedicated, full-time engineers with at least three located onsite, each with a bachelor's degree in engineering or related science and at least two years professional level experience in his field, at least one year of which experience shall be in the nuclear field.

#### RESPONSIBILITIES

6.2.3.3 The NSAG shall be responsible for maintaining surveillance of unit activities to provide independent verification\* that these activities are performed correctly and that human errors are reduced as much as practical.

#### AUTHORITY

6.2.3.4 The NSAG shall make detailed recommendations for revised procedures, equipment modifications, maintenance activities, operations activities, or other means of improving unit safety to the Senior Vice President-Nuclear.

### 6.2.4 SHIFT TECHNICAL ADVISOR

6.2.4.1 The Shift Technical Advisor shall provide technical support to the Shift Supervisor in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit.

### 6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions and the supplemental requirements specified in Section A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees, except for the Radiological Protection Supervisor or Health Physics/Chemistry Supervisor who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the shift Technical Advisor who shall meet or exceed the qualifications referred to in Section 2.2.1.b of Enclosure 1 of the October 30, 1979 NRC letter to all operating nuclear power plants.

### 6.4 TRAINING

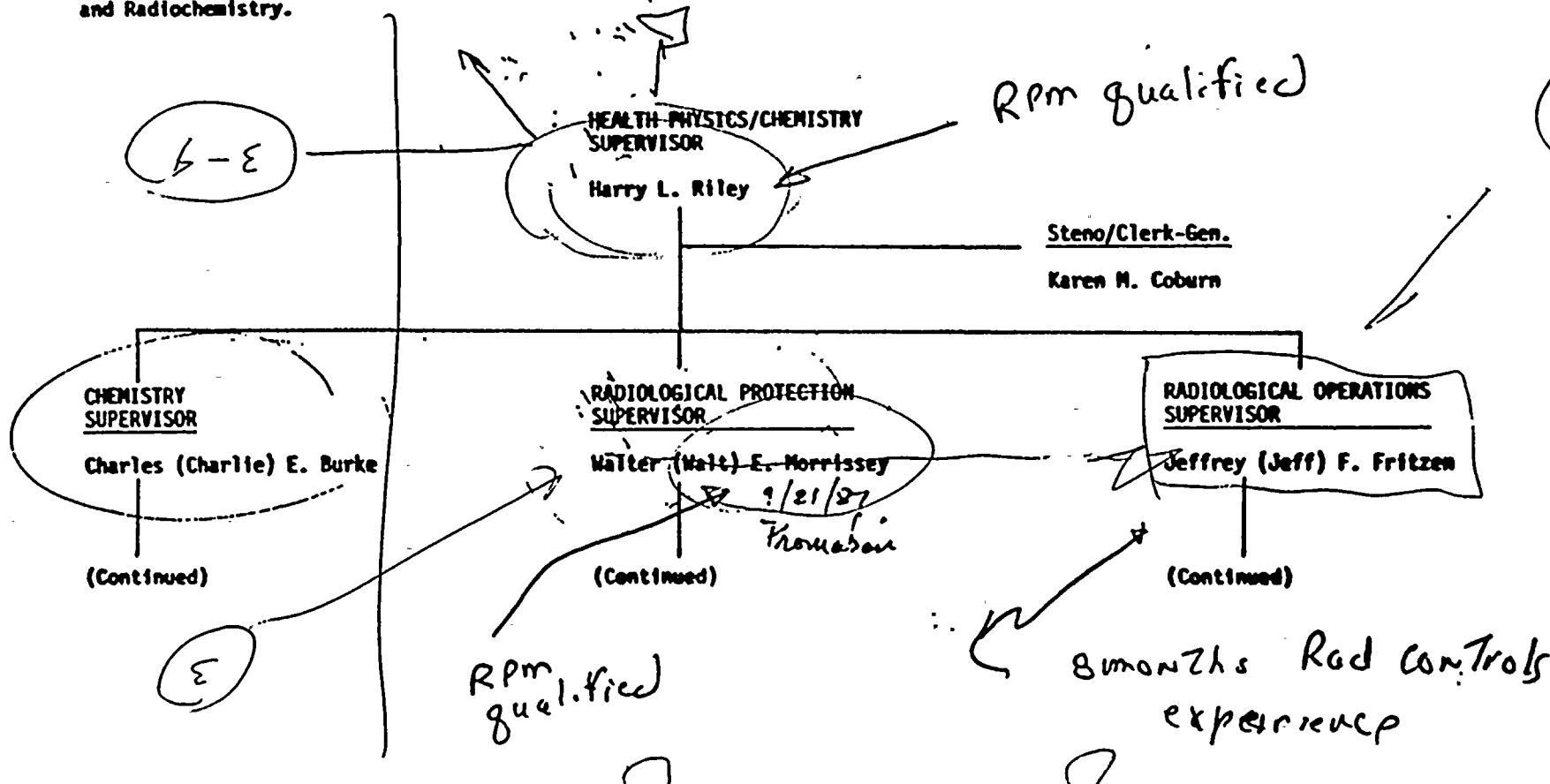
6.4.1 A retraining and replacement training program for the unit staff shall be maintained under the direction of the Manager - Nuclear Training, shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55 and the supplemental requirements specified in Section A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees, and shall include familiarization with relevant industry operational experience.

\*Not responsible for sign-off function.

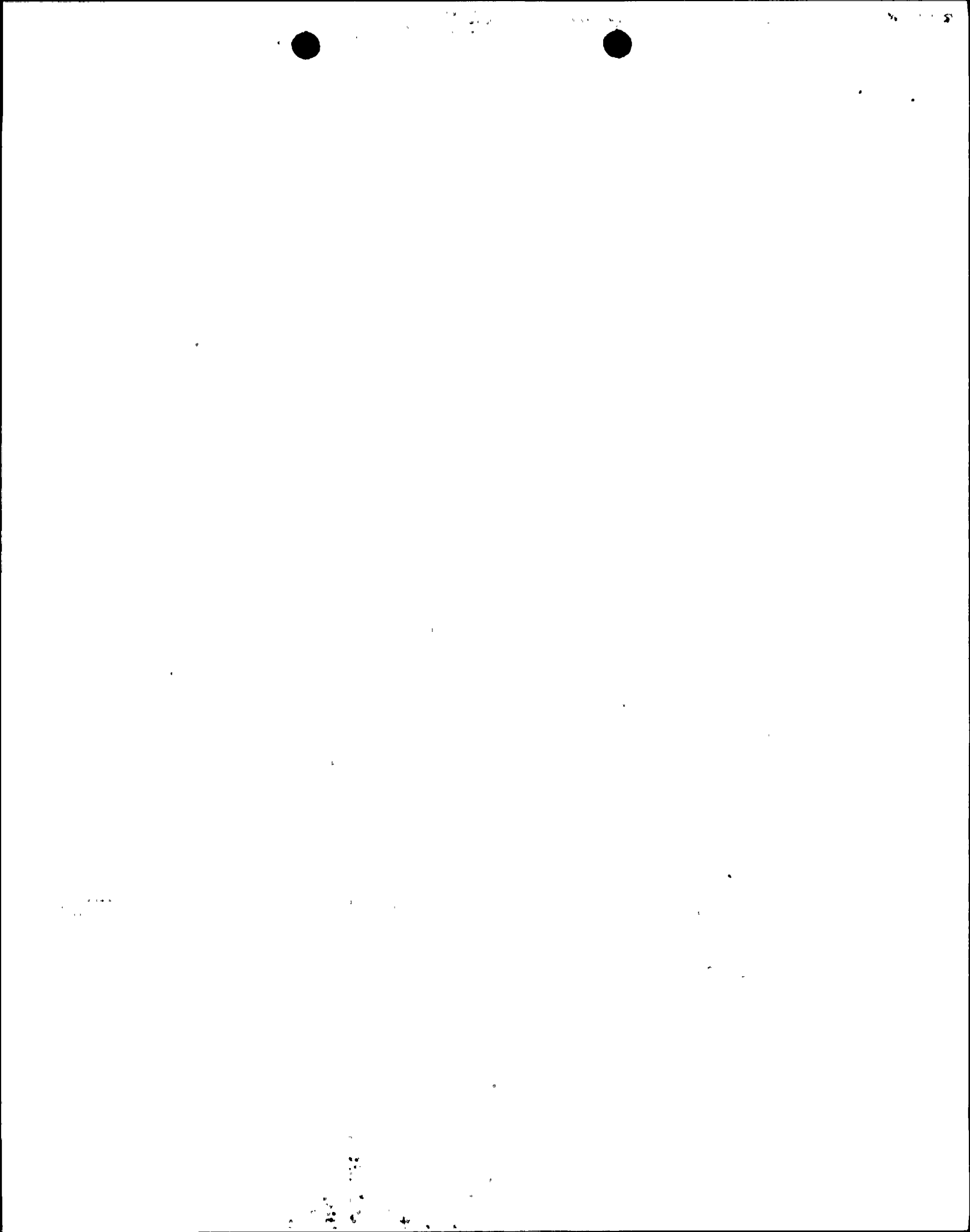
SUSQUEHANNA STEAM ELECTRIC STATION  
HEALTH PHYSICS/CHEMISTRY SECTION - CA 461

October 1987

**ON STATEMENT:** Evaluate and document plant radiological conditions, personnel exposures and ensure that every reasonable effort is expended to maintain personnel exposures to levels that are as low as reasonably achievable (ALARA). Provide for the safe transfer, storage, transport and shipment of radioactive material. Provide support for plant operations and maintenance in Chemistry and Radiochemistry.









CA 461

October 1987

RADIOLOGICAL PROTECTION SUPERVISOR

Walter E. Morrissey

*EPM Qual*

HEALTH PHYSICS SPECIALIST RESP. PROT.

P. J. McGlynn

*Level II - Specialist*

HEALTH PHYSICS SPECIALIST PROGRAMS/PROCEDURES

C. P. Lewis *Level II - Specialist*

1 Steno/Clerk-Gen.

M. M. McAloose

HEALTH PHYSICIST/ DOSIMETRY

*Jeff Husswell*  
Vacant *(New Specialist)*

*acting on 10/29*

Tech. Records Input

D. M. Davidson

Steno/Clerk-Gen.

D. A. Ferdinand  
J. A. Fink  
P. R. Wilds

Consultant

R. Brink 12/18/87

*July 87 hire*

*current org 3 of 3*

FSAR

Section referenced  
in Response**12.5.1.4 Experience and Qualification**

The Health Physics staff, responsible for the Health Physics Program at Susquehanna, will meet minimum experience and qualification requirements. 147

The Health Physics Supervisor will be an experienced professional in applied radiation protection at nuclear power plants or nuclear facilities dealing with radiation protection problems similar to those at nuclear power stations; familiar with the design features of nuclear power stations that affect the potential for exposures of persons to radiation; in possession of technical competence to establish radiation protection programs and supervisory capability to direct the work of professionals and technicians required to implement such programs.

The Health Physics Supervisor will have experience in applied radiation protection which is to include five years of professional experience. Four years of the experience requirement may be fulfilled by a bachelor's degree in a science or engineering subject. Three years of the professional experience will be in a nuclear power plant or nuclear facility dealing with radiological problems similar to those encountered in nuclear power stations. One year of professional experience may be fulfilled by a master's degree and two years may be fulfilled by a doctor's degree where course work related to radiation protection is involved.

The Radiological Support Supervisor will have a minimum of five years of experience in applied radiation protection in a nuclear power plant or a nuclear facility dealing with radiological problems similar to those encountered in nuclear power stations. Up to four years of the experience requirement may be fulfilled by related technical training or academic training in a science or engineering subject.

The Health Physics Specialist will have a minimum of four years of experience in applied radiation protection to include two years of experience in a nuclear power plant or a nuclear facility dealing with radiological problems similar to those encountered in nuclear power stations. A maximum of two years of the experience requirement may be fulfilled by related technical training or academic training in a science or engineering subject.

To at all times assure adequate manpower for Health Physics supervisory functions, the experience and qualification requirements of the Radiological Support Supervisor and Health Physics Specialist positions may be reduced on a temporary basis. The Superintendent of Plant will approve or disapprove such

action following review of the Health Physics Supervisor's recommendations and justification.

The Health Physics Technicians Level II will meet the qualification requirements of ANS 3.1-1978.

## 12.5.2 FACILITIES, EQUIPMENT & INSTRUMENTATION

### 12.5.2.1 Control Structure Facilities

The facilities, shown in Figure 12.5-2, are located at the central access to the Controlled Zone, elevation 676', for efficiency of operation. Self-survey personnel monitoring equipment, such as hand and foot, portal, or Geiger-Mueller (G-M) type friskers, will be located at the exit from the central access control area. Self-survey requirements will be administratively imposed prior to exiting the Controlled Zone.

#### 12.5.2.1.1 Health Physics Facilities

The Health Physics office and workroom are located in the Control Structure. Job planning and Radiation Work Permit coordination may be conducted through the pass-thru window of the workroom. Portable radiation survey instrumentation as well as air monitoring and sampling equipment, self-reading dosimeters, and miscellaneous Health Physics supplies will be stored in the Health Physics Office and Workroom area. Health Physics equipment used for routine counting of smears and air samples such as end window G-M counters, alpha and beta scintillation detectors, and/or gas flow proportional counters will be located in the Health Physics Office to prevent cross contamination of chemistry samples and minimize counting room background variations. Health Physics samples requiring gamma isotopic analysis and/or low level counting may be analyzed in the Health Physics Counting Room.

Decontamination facilities at the central access control area consist of a main personnel decontamination area and auxiliary decontamination area. Auxiliary toilets and locker room are also provided. The personnel decontamination areas contain showers, sinks, and decontamination agents. Decontamination area ventilation is filtered through prefilter, High Efficiency Particulate Air (H.E.P.A.), and charcoal filters prior to exhaust through the Turbine Building vent. Sinks and showers drain to the chemical drain tanks for processing through the Liquid Radioactive Waste System. G-M type friskers will be located in these areas for personnel contamination monitoring.

plant operating activities. One individual is designated as the Lead STA and supervises group activities.

- o The Senior Compliance Engineer Supervises the activities of the compliance staff. The compliance staff provides the plant technical interface with NRC, evaluates and interprets licensing documents such as Technical Specifications, Regulatory Guides, IE Bulletins and Circulars, represents the plant staff in licensing activities, coordinates the surveillance and inservice inspection programs at the plant, and prepares routine and special NRC reports.

### 13.1.2.3 Shift Crew Composition

The shift complement for normal operation of both units consists of eleven (11) qualified individuals; the Shift Supervisor who holds an SRO License, two (2) Unit Supervisors who hold SRO Licenses, three (3) Licensed Operators with RO Licenses and five (5) Non-Licensed Operators (See Figure 13.1-6). Five crews as specified provide continuous coverage. Table 6.2.2-1 of the Technical Specifications shows the minimum number and type of licensed and non-licensed operating personnel required to be on-site for each operating shift. Health Physics coverage is described in Subsection 13.1.2.2.2. For those operations that involve core alterations, direct supervision of fuel movements is provided by an individual holding an SRO License. This person will have no other concurrent responsibilities during this assignment.

## 13.1.3 QUALIFICATION REQUIREMENTS FOR NUCLEAR PLANT PERSONNEL

### 13.1.3.1 Minimum Required Qualifications

When selecting personnel and scheduling training assignments for the plant staff positions listed below, the requirements of NRC Regulatory Guide 1.8, Rev. 1-R, 9/75 will be met. Experience, education, and training are such that the criteria in Section 4 of ANSI/ANS-3.1-1978 are met at the time of the core loading of the appropriate unit.

For these determinations the following plant staff positions are identified with the classifications contained in Section 4 of ANSI/ANS-3.1-1978:

Susquehanna SES Staff PositionANSI/ANS-3.2 Classification

Superintendent of Plant	Plant Manager (4.2.1)
Assistant Superintendent of Plant	Plant Manager (4.2.1)
Assistant Superintendent of Plant-Outages	Plant Manager (4.2.1)
Supervisor of Operations (4.2.2)	Operations Manager
Shift Supervisor NRC Licenses (4.3.1)	Supervisors Requiring
Unit Supervisor NRC Licenses (4.3.1)	Supervisors Requiring
Licensed Operators (4.5.1)	Operators (Licensed)
Non-licensed Operators (4.5.1)	Operators (Non-Licensed)
Technical Supervisor (4.2.4)	Technical Manager
Reactor Engineering Supervisor (4.4.1)	Reactor Engineering
Instrumentation and Control/ Computer Supervisor	Instrumentation and Control (4.4.2)
Instrumentation and Controls Foreman and Assistant Foreman	Supervisors Not Requiring NRC Licenses (4.3.2)
Instrument Man	Technician (4.5.2)
Chemistry Leader	Technician (4.5.2)
Chemistry Supervisor	Radiochemistry (4.4.3)
Supervisor of Maintenance (4.2.3)	Maintenance Manager
Foreman and Assistant Foreman - Mechanical Repairs	Supervisors Not Requiring NRC Licenses (4.3.2)

Foreman and Assistant Foreman -  
Electrical Repairs

Supervisors Not Requiring  
NRC Licenses (4.3.2)

Mechanic

Repairmen (4.5.3)

Health Physics Supervisor  
Regulatory Guide 1.8, Rev: 1-R,  
9/75

Qualifications per NRC

Health Physics Foreman and  
Assistant Foreman

Supervisors Not Requiring  
NRC Licenses (4.3.2)

Health Physics Personnel  
Section 12.5

Qualifications per

13.1.3.1.1 Qualifications of Personnel that Cannot Be Directly  
Cross-Referenced to ANSI/ANS-3.1-1978

The below listed positions cannot be directly cross-referenced to corresponding positions in ANSI/ANS-3.1-1978; however, personnel filling these positions will have that combination of education, experience and skills commensurate with their functional level of responsibility which provides assurance that decisions and actions during normal and abnormal conditions will be such that the plant is operated in a safe and efficient manner:

- Personnel and Administrative Supervisor
- Security Supervisor
- Senior Compliance Engineer
- Shift Technical Advisor
- Mechanical Maintenance Supervisor
- Electrical Maintenance Supervisor
- Senior Results Engineer
- Engineer
- Administrative Supervisor
- Clerks
- Material Supervisor
- Material Personnel



.Stockman

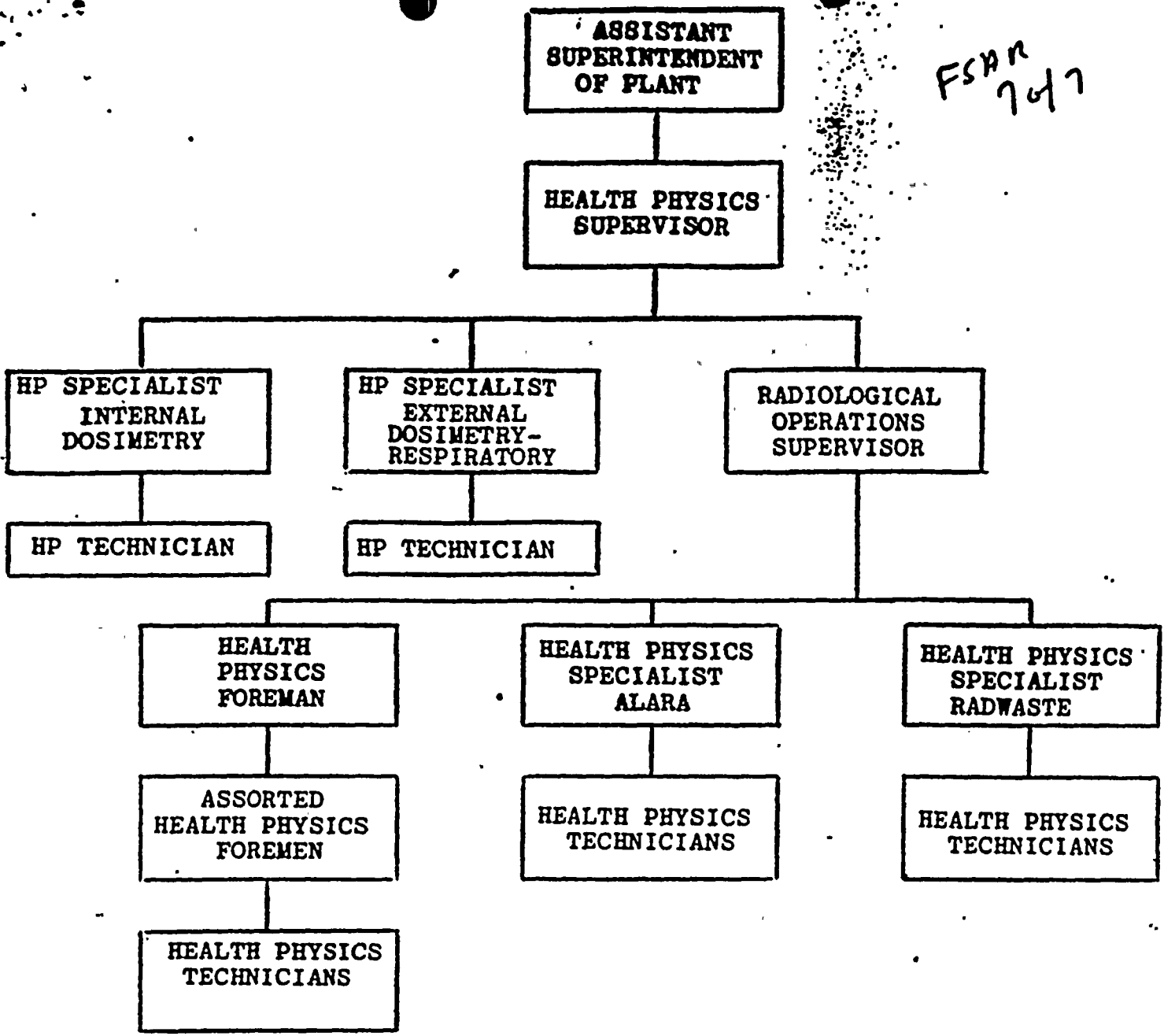
Supervisor - Nuclear Records System

Records Personnel

13.1.3.2 Qualifications of Plant Personnel

The qualifications of the key plant supervisors are shown on Tables 13.1-3.

FSA# 747



Rev. 35, 07/84

SUSQUEHANNA STEAM ELECTRIC STATION  
UNITS 1 AND 2  
FINAL SAFETY ANALYSIS REPORT

HEALTH PHYSICS  
ORGANIZATION

FIGURE 12.5-1