CHAPTER 13

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CHAPTER 13

CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE OF ENERGY HARBOR NUCLEAR CORP. AT BEAVER VALLEY POWER STATION (BVPS)

In December 1999, FirstEnergy Nuclear Operating Company (FENOC) assumed responsibility for the operation of BVPS from the previous owner and operator. As an operator of multiple nuclear sites, some functions previously reporting onsite were consolidated from the sites and were provided by FENOC organizations that formally reported offsite. Individuals located onsite that represented such organizations also reported to onsite management regarding direction for the service they provided. In February 2020, Energy Harbor Nuclear Corp. assumed responsibility of operations at BVPS.

This section describes important onsite and offsite reporting positions. Facility staff qualification requirements and minimum shift crew compositions are described in the respective unit's technical specifications.

13.1.1 Offsite Organization

The description of the Energy Harbor Nuclear Corp. corporate organization and the lines of authority, responsibility, and communication between the corporate organization and the site organization are defined and established in the company Quality Assurance Program Manual (QAPM), which is incorporated by reference into this document.

13.1.2 Onsite Organization

Figure 13.1-2 describes the onsite BVPS organization. Responsibilities associated with key positions depicted on the figure are described as follows.

The **Site Vice President, Beaver Valley,** shall have the corporate responsibility for overall plant nuclear safety at the site and shall take any measures needed to ensure acceptable performance of the site staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

The **General Plant Manager** is responsible for the safe and efficient operation of the plants in accordance with the guidelines and requirements of the operating licenses and station manuals. The positions described below report directly to the General Plant Manager.

The **Manager, Site Operations** assures the safe, reliable, and efficient operation of the plant within the constraints of applicable regulatory requirements and the operating license.

The **Assistant Operations Manager** is the line person responsible for managing the operation of the respective BVPS unit. This position ensures that conditions adverse to safe, reliable operation of the unit are identified, evaluated, and effective corrective action is completed.

The **Shift Managers** are responsible for the proper startup, operation, and shutdown of station equipment associated with the respective unit. In the absence of direct line supervision, the shift manager is authorized to act as the ultimate authority with regard to nuclear safety.

The **Unit Supervisors** are responsible for the proper startup, operation, and shutdown of equipment, supervise the preparation of various logs and reports, direct all physical operations work, and provide on-the job training of operating personnel.

The **Manager, Site Maintenance** is responsible for the activities of the line maintenance organization including maintenance and calibration of plant mechanical and electrical equipment, instrumentation, controls, and computer equipment, and is responsible for maintenance services and nuclear work planning.

The **Manager, Site Work Control** is responsible for the coordination, schedule development and execution of all maintenance, planned and forced outages and online work activities at Beaver Valley.

The **Manager, Site Radiation Protection/Chemistry** is responsible for providing radiological control coverage, implementation of ALARA analysis, providing direction and support for all radioactive waste shipping, radioactive waste management, and maintaining the dosimetry and respiratory protection program, maintenance of respiratory protection equipment and radiation protection technical support. This manager also serves as Radiation Protection Manager specified in NRC Regulatory Guide 8.8.

This manager is also responsible for administration, implementation and maintenance of the plant environmental program ensuring compliance with state and federal environmental protection requirements, and the radiological environmental monitoring program. This includes the non-radioactive environmental monitoring program as well as control and disposal of non-radioactive hazardous waste. Also is responsible for all Station chemistry programs and procedures, and maintaining a qualified radiochemical program.

The **Plant Operations Review Committee (PORC)** provides recommendations to the General Plant Manager on matters relating to nuclear safety. Section 13.4.1 describes onsite review functions.

The **Manager, Energy Harbor Supply Chain**, Beaver Valley is responsible for the procurement of goods and services, inventory management, and warehouse operations, including the receipt, storage and issuance of materials, parts, and components to support plant operations and maintenance.

The **Director, Site Performance Improvement** has overall responsibility for the following functions.

The **Manager, Site Protection** is responsible for the implementation of the Physical Security Plan and has overall responsibility for directing and maintaining an effective Site Protection organization.

The **Manager, Site Training** is responsible for providing direction, control, and overall supervision of all accredited training of personnel required by regulations.

The **Manager, Regulatory Compliance and Emergency Response** is responsible for managing and overseeing all activities associated with Regulatory Compliance and Emergency Response. The primary functions of this position include Regulatory Compliance, Performance Improvement, site implementation of the Corrective Action Program, maintenance of the Site Emergency Plan, and working with off-site organizations at the local, state, and federal levels supporting the plant emergency plan.

The **Manager, Site Projects** is responsible for the direction, control, and overall supervision of projects implemented at the station.

The **Director, Site Engineering**, reports directly to the Energy Harbor Nuclear Corp. executive responsible for engineering and indirectly to the Site Vice President, Beaver Valley, and is responsible for the technical and engineering activities in support of site design control, plant modifications, and system performance requirements. Site Design Engineering and Strategic Engineering, report to the Director, Site Engineering. The Director, Site Engineering, shall utilize fleet engineering resources when necessary in support of site engineering activities, and will provide assurance that all engineering activities in support of the site are accomplished in accordance with the appropriate, plant, fleet, and quality assurance policies and procedures.

The **Manager, Site Design Engineering**, is responsible for maintaining the station design basis. This includes plant modifications, plant design support, design basis and transient analysis, and technical support of plant systems and operations. The Manager, Site Design Engineering shall utilize fleet engineering resources when necessary in support of site design engineering activities. This manager is also responsible for technical support of emergent plant issues, providing engineering technical services to support the operations and maintenance organizations. The Manager, Site Design Engineering, reports to the Director, Site Engineering.

The **Manager, Strategic Engineering**, is responsible for short and long-term health of plant systems and components, providing technical support and services related to system health, and recommending and sponsoring system improvements to

optimize availability and reliability, and for reactor engineering. The Manager, Strategic Engineering shall utilize fleet engineering resources when necessary in support of site systems engineering activities. This manager will also ensure engineering programs are effective through interface with site and fleet engineering resources. The Manager, Strategic Engineering, reports to the Director, Site Engineering.

Tables for Section 13.1

TABLE 13.1-2

CROSS-REFERENCE TO POSITIONS REFERENCED IN TECHNICAL SPECIFICATIONS
(Refer to Technical Specification 5.2.1.a)

Generic Position Title (Technical Specification)	Plant-Specific Title
Corporate Officer	Site Vice President, Beaver Valley
Plant Manager	General Plant Manager
Operations Manager	Manager, Site Operations
Assistant Operations Manager	Assistant Operations Manager
Radiation Protection Manager	Manager, Radiation Protection/Chemistry

Note: The correlation between the positions described in Section 5.2.1 of the Technical Specifications and the plant-specific titles are documented in Table 13.1-2 above.

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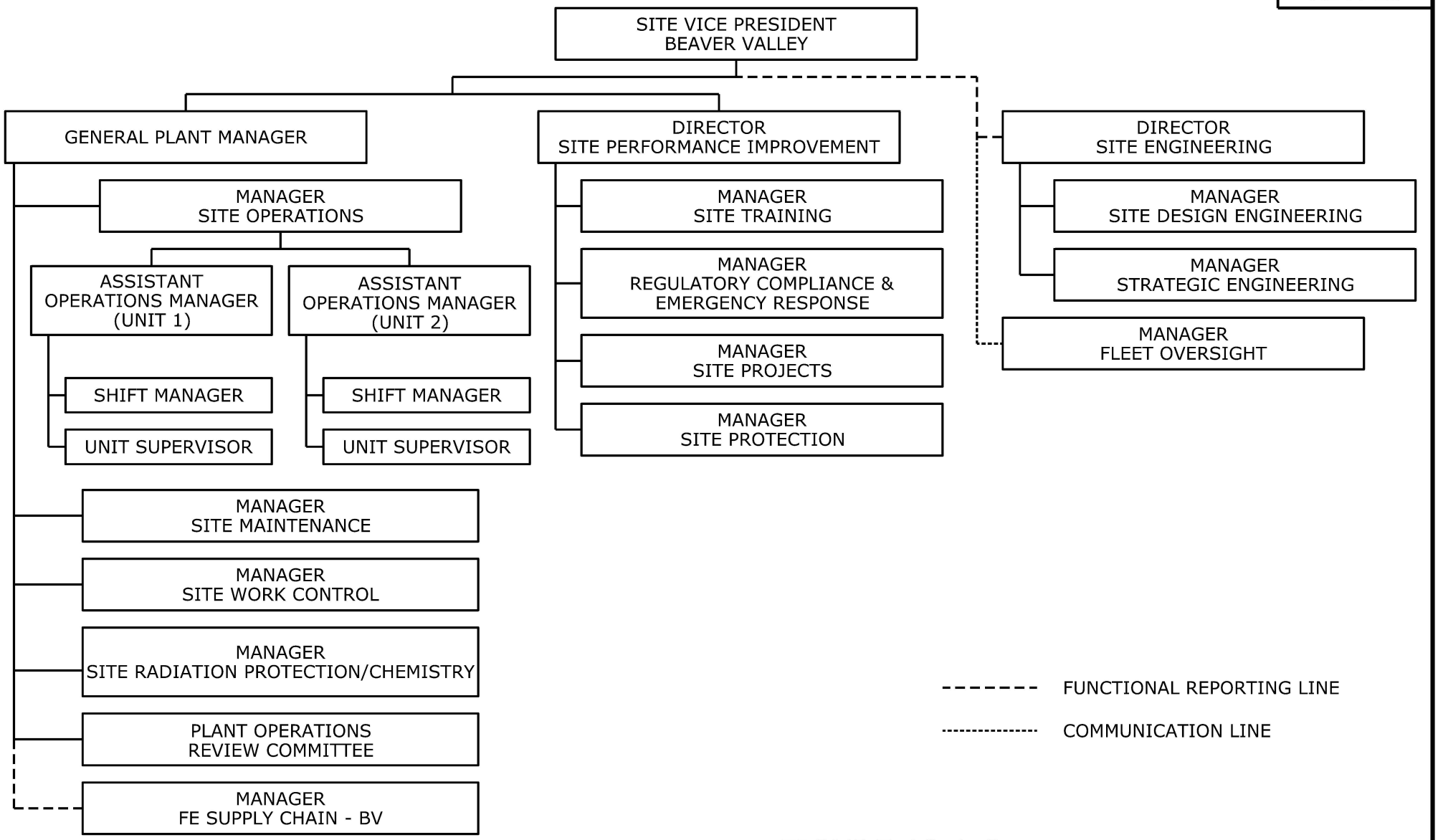

FIGURE 13.1-2

ONSITE ORGANIZATIONAL STRUCTURE

BEAVER VALLEY POWER STATION UNIT NO. 2
UPDATED FINAL SAFETY ANALYSIS REPORT

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13.2 TRAINING

The Beaver Valley Power Station training program has been developed for use during the operational phase of Unit 1/2 (BVPS-1/2). This program identifies requirements and provides training for employees in the operations, radiological control, chemistry, testing, maintenance, quality control, and administrative organizations. The program also identifies administrative requirements to ensure the proper and uniform documentation of training.

Training at BVPS satisfies NRC regulations including 10 CFR 55, "Operators' Licenses" and 10 CFR 50.120, "Training and Qualification of Nuclear Power Plant Personnel." The program also conforms to Regulatory Guide 1.8, Revision l-R, May 1977, Personnel Selection and Training (this is a reissuance of Revision 1, September 1975 without changes to its content).

Training is conducted by a qualified staff of instructors who meet or exceed training program minimum requirements.

Evaluation of the effectiveness of the training program is measured utilizing one or more of the following methods:

1. Written and/or oral examinations.

2. Demonstration of proficiency during actual or simulated operations.

13.2.1 Licensed Operator Replacement and Requalification Training Program

The Operator Replacement and Requalification Training Program of Record was submitted to the NRC by letter dated October 30, 1985 with supplemental information provided to the NRC in letters dated June 30 and September 30, 1986. The training program detailed in training administrative procedures was found acceptable to the NRC with clarifications noted in an NRC letter dated December 2, 1986.

A response to NRC Generic Letter 87-07 was submitted by a letter dated September 11, 1989, which certified that the BVPS-1 and BVPS-2 licensed operator initial and requalification training programs were accredited and based on a systems approach to training. Changes to the approved operator training programs, as clarified by the NRC in a letter dated November 12, 1997, are processed under the provisions of GL 87-07. Therefore, prior approval from the NRC is no longer required to change these programs.

13.2.1.1 Licensed Operator Training Program

The Licensed Operator Training Program is designed to provide operating personnel with the knowledge and skills required to operate BVPS in a safe and efficient manner. Personnel whose duties require them to possess a Reactor Operator or Senior Reactor Operator license (as specified in 10 CFR 55) will complete the Licensed Operator Training Program.

13.2.1.2 Licensed Operator Retraining

The Licensed Operator Retraining Program ensures that licensed personnel remain competent to operate either BVPS-1 or BVPS-2 in a safe, reliable, and efficient manner. This program is administered to all personnel whose duties require them to maintain a Reactor Operator or Senior Reactor Operator license (as specified in 10 CFR 55).

13.2.2 Training Programs for Non-Licensed Plant Staff

This section contains a description of the training and retraining programs for selected non-licensed members of the BVPS-1/2 staff. The training is derived from a systems approach to training as required by 10 CFR 50.120 and includes:

1. General Employee Training
2. Engineering Support Personnel Training
3. Maintenance Training (mechanical, electrical, and instrument and control)
4. Fire Protection Training
5. Shift Technical Advisor Training
6. Mitigating Core Damage Training
7. Radiological Protection Technician Training
8. Chemistry Technician Training

13.2.2.1 General Employee Training

General Employee training is provided to all employees in Plant Access Training and Radiation Worker Training to meet the intent of 10 CFR 19 Section 19.12. Plant Access Training provides individuals with an indoctrination in the general requirements necessary to gain access to the plant. This program enhances employee effectiveness and safety by covering plant organization, security, safety regulations, radiation fundamentals, quality assurance, fire protection, and the emergency plan. All individuals who require unescorted access to the protected area of Beaver Valley Power Station must complete Plant Access Training.

In addition to Plant Access Training, Radiation Worker Training is provided for employees who will be exposed to radioactive material(s). This course covers basic radiation theory, exposure controls, safe work practices, workers' rights and responsibilities.

General Employee Refresher Training is provided on both Plant Access and Radiation Worker Training.

13.2.2.2 Engineering Support Personnel Training

Engineering Support Personnel are provided training as required to meet the intent of ANSI N18.1-1971 Section 5.3, "Training of Personnel Not Requiring AEC Licenses," as endorsed by Regulatory Guide 1.8. The engineering support personnel population is established by a management review of the functional responsibilities assigned to various job positions in comparison to the activities listed in the National Academy for Nuclear Training Guideline for Training and Qualification of Engineering Personnel.

13.2.2.3 Maintenance Training

Maintenance Training is provided for permanently assigned BVPS maintenance personnel and consists of five individual programs: Mechanical, Electrical, Instrument & Control, Relay Technician, and Maintenance Supervisory Training. In addition, trained welders are qualified by the Site Maintenance Department.

Initial training includes minimum job training requirements (MJTR) training, plant specific training, and systems training.

The Continuing Training Program is designed to maintain proficiency in learned tasks and ensures that personnel are kept informed of plant and industry changes. Continuing training includes refresher and current topics training.

Each program contains material specific to the job discipline. The programs are designed to provide entry-level or supervisory personnel with the knowledge and skills necessary to perform their job duties.

13.2.2.4 Fire Brigade Training Program

Fire Brigade Training is conducted to train individuals with assigned site fire brigade duties to respond safely and effectively to fire emergencies.

This program provides information on fire fighting procedures, equipment operation, and safety requirements through initial classroom and practical training. Continuing training is required annually as is participation in fire response drills.

More detail on Fire Protection Training is presented in Section 9.5.1.4.

13.2.2.5 Shift Technical Advisor (STA) Training

The STA program is designed to provide training that will enable personnel to provide effective analytical and technical assistance to operating personnel during normal and abnormal operating conditions.

13.2.2.5.1 STA Initial Training

Personnel who are not licensed for the Beaver Valley Power Station will complete the STA Training Program prior to assuming responsibility for the duties of the Shift Technical Advisor positions. The education of enrolled personnel will be reviewed and supplemental education or training will be performed on an as-needed basis in the following academic areas:

Reactor Theory
Reactor Chemistry
Nuclear Materials
Thermal Sciences
Electrical Sciences
Nuclear Instrumentation and Control
Nuclear Radiation Protection

The STA Training Program consists of instruction in the following areas:

Fundamentals Training
Plant Systems Instruction
Transient and Accident Assessment
Management/Supervisory Training
Simulator Training
On-Shift Training

13.2.2.5.2 STA Retraining

The STA Retraining Program is designed to ensure that personnel remain competent to carry out the duties of the STA position. Retraining is completed on a two-year basis.

The STA Retraining Program consists of classroom and simulator training. The STA participates in selected modules of the Licensed Operator Retraining Program, as well as lectures to cover any differences between the units. Annual requalification examinations and completion of individual study guides are not required.

Individuals not actively performing the STA functions for a period of 30 days or longer are required to review appropriate facility and procedural changes that have occurred since their last assignments to STA duties.

Simulator training is divided between Unit 1 and Unit 2 and scenarios are designed to evaluate the STA's analytical and advisory skills.

13.2.2.6 Mitigating Core Damage (MCD) Training

The Mitigating Core Damage Training Program provides training on recognizing and responding to accidents in which the reactor core is severely damaged.

Shift Technical Advisors and operations personnel will be provided training to meet the intent of NUREG-0737, Section II.B.4. Radiological Control Managers and Technicians, Chemistry personnel and I&C personnel will receive training commensurate with their responsibilities.

Continuing training on selected MCD topics is conducted periodically as a part of continuing training programs.

13.2.2.7 Radiation Technician Training

Radiation Protection Technician personnel are provided training as required to meet the intent of ANSI-18.1-1971, Sections 4.5.2, "Technicians" and Section 5.3.4, "Training for Technicians and Repairmen" as endorsed by Regulatory Guide 1.8.

The Radiation Protection Technicians training program meets the National Academy of Nuclear Training "Guidelines for Training and Qualification of Radiological Protection Technicians."

13.2.2.8 Chemistry Training

Chemistry personnel are provided training as required to meet the intent of ANSI-18.1-1971, Sections 4.5.2, "Technicians" and Section 5.3.4, "Training for Technicians and Repairmen" as endorsed by Regulatory Guide 1.8.

The Chemistry training program meets the National Academy of Nuclear Training "Guidelines for Training and Qualification of Chemistry Technicians."

13.2.3 Applicable U.S. Nuclear Regulatory Commission Documents

The BVPS training program will be conducted in accordance with applicable portions of 10 CFR 50; 10 CFR 55; and 10 CFR 19. Additionally, the program will be conducted in accordance with the intent of the following guidance documents, including any alternative methods that may be specified in Section 1.8.

1. Regulatory Guide 1.8, "Personnel Selection and Training."

2. Regulatory Guide 1.101, "Emergency Planning for Nuclear Power Plants."

3. Regulatory Guide 8.2, "Guide for Administrative Practices in Radiation Monitoring."

13.3 EMERGENCY PLANNING

The Beaver Valley Power Station Emergency Preparedness Program is an in-depth concept designed to protect both employees and property and the health and safety of the general public surrounding Beaver Valley Power Station.

The BVPS Emergency Preparedness Plan provides guidance for coping with both onsite and offsite emergency situations. The Plan ranges in scope from relatively minor occurrences involving small releases of radioactive material, up to and including a major nuclear incident having significant offsite radiological consequences.

The Emergency Preparedness Plan provides for a graded scale of response for distinct classifications of emergency conditions, actions within those classifications, and criteria for escalation to a more severe classification. The Plan interrelates with BVPS Operating Procedures, Security Procedures, the BVPS radiation protection procedures and the associated EPP Implementing Procedures. The overall preparedness concept is emphasized onsite in training as well as preparedness drills and exercises. The Plan is in compliance with the standards of 10 CFR 50 Appendix E and is responsive to the individual acceptance criteria of NUREG-0654 to meet the intent of Item III.A.2 of NUREG-0737 and Item III.A.1.1 of NUREG-0660.

The Emergency Preparedness Program includes emergency measures out to a radius of at least 10 miles from BVPS. The 10-mile Emergency Planning Zone (EPZ) encompasses three states (Pennsylvania, Ohio and West Virginia) and three counties (Beaver County, PA; Columbiana County, Ohio; and Hancock County, WVa). Each emergency response agency has an Emergency Operations Plan. These plans are coordinated closely with the BVPS Plan to ensure compatibility. Arrangements and procedures exist and training has been conducted for the treatment of contaminated injuries and significant over-exposures to radiation. The Medical Center, Beaver, PA; and Presbyterian-University Hospital, Pittsburgh, PA; are included in these arrangements. Letters of Agreement with agencies providing support to BVPS during an emergency are on file and reviewed annually to ensure currency.

BVPS has designated an Emergency Response Organization (ERO) which encompasses both the operating and support elements of the nuclear organization. Provisions are in place for a timely, staged response consistent with the emergency classification. Personnel are trained to provide in-depth response capability for required actions in an emergency situation. Upon activation, the ERO remains in effect until such time as conditions have been stabilized or normal operations are resumed. In support of handling any emergency operations at BVPS, an onsite Technical Support Center has been provided which meets the intent of Item III.A.1.2 of NUREG-0660. The Technical Support Center is separate from, but in close proximity to the Control Room, having the capability to display plant status of reactor operations in the event of an accident.

13.4 REVIEW AND AUDIT

A review and audit program has been established to assure that operations of BVPS-2 are performed in a safe manner consistent with license provisions, approved procedures, and company policy. The review program is the responsibility of the Plant Operations Review Committee (PORC) and the Company Nuclear Review Board (CNRB). The audit program is the responsibility of the Manager, Nuclear Quality Assessment. The functions of the review and audit program are detailed as follows:

1. Review proposed plant changes, tests, experiments, and implementing procedures pursuant to the criteria established in 10 CFR 50.59.

2. Verify that unusual events are promptly investigated and corrected.

3. Detect trends of conditions that may not be apparent to a day-to-day observer.

13.4.1 Onsite Review

The review functions of the on-site review organization, which is known as the Plant Operations Review Committee (PORC), are described in ANSI N18.7-1976, which is committed to as delineated in the company Quality Assurance Program Manual (QAPM). The specific details related to the activities of PORC are set forth in administrative procedures.

13.4.2 Independent Review

Company Nuclear Review Board (CNRB)

The description, responsibilities, and functions of the independent review organization, which is known as the Company Nuclear Review Board (CNRB), are described in ANSI N18.7-1976, which is committed to as delineated in the company Quality Assurance Program Manual (QAPM). The specific details related to the activities of CNRB are set forth in administrative procedures.

13.4.3 Audit Program

A description of the audit program for the operational phase of BVPS-2 is contained in the company QAPM, referenced in Section 17.2.

13.4.4 Independent Safety Evaluation

The intended function of the Independent Safety Evaluation Group (ISEG) will be maintained by current programs and processes that provide oversight of plant operating characteristics, NRC issuances, Licensing Information Services, and other sources of plant design and operating experience information that may indicate areas for improvement to insure overall safe operation of the station. Included

within the oversight process are reviews of plant activities including Maintenance, Modifications, and Operational problems. The ISEG functions are directly incorporated into engineering, operations, performance improvement, and oversight functions through administrative processes such as the Corrective Action and Operating Experience programs. Organizational entities responsible for engineering assessment, corrective action review, oversight and assessment are structured to provide the necessary experience and independence.

13.5 PLANT PROCEDURES

Various administrative and operating procedures have been established for the Beaver Valley Power Station (BVPS) operating organization to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner.

Detailed guidelines for the preparation of procedures have been developed for each type of required written procedure. These guidelines include the information required to be included in the procedures, the appropriate references for precautions and limitations, the review and approval sequence for the various types and safety categories of equipment and systems, and the method to implement temporary and permanent changes to the procedures.

13.5.1 Administrative Procedures

The administrative procedures establish methods and controls which aid in the safe and efficient operation of BVPS. These procedures are intended to direct the plant personnel in the performance of safety-related functions in accordance with regulatory requirements and the BVPS-2 Technical Specifications. Table 13.5-1 lists the subjects included in the corporate and station administrative procedures. Administrative procedures were prepared in accordance with the intent of Regulatory Guide 1.33, Revision 2, "Quality Assurance Program Requirements (Operations)" for BVPS-1.

The administrative procedures conform to the BVPS-2 Final Safety Analysis Report and Technical Specifications, the company Quality Assurance Program Manual, and the intent of the following ANSI Standards and USNRC documents.

1. NUREG-0694 Item I.C.2 for procedures for shift relief and turnover for shift operating personnel

2. NUREG-0694 Item I.C.4 for control room access

3. NUREG-0737 Item I.C.5 for procedures for feedback of operating information

4. NUREG-0737 Item I.C.6 for procedures for verifying the correct performance of operating activities

6. ANSI B30.2-1976, Chapters 2 and 3 for qualification and conduct of crane operators who operate cranes over fuel pools

7. NUREG-0694 Item I.A.1.2 for procedures covering shift supervisor administrative duties

8. NUREG-0694 Item I.C.3 for procedures covering shift supervisor responsibilities

The administrative procedures provide a clear understanding of the operating philosophy and administrative policies. The procedures establish the rules and instructions pertaining to personnel conduct and control; on-call availability of professional and supervisor personnel; the method of conducting operations; and the preparation, issue, revision, and retention of BVPS-2 documents.

The administrative procedures delineate the responsibilities and authorities of the BVPS staff. As a minimum, the procedures shall include requirements set forth in 10 CFR 50.54, paragraphs (i), (j), (k), (l), (m), and the following:

1. Procedures include the reactor operator’s authority and responsibility for shutting the reactor down after determining that the safety of the reactor is in jeopardy, or when operating parameters exceed any of the reactor protection circuit set points and automatic shutdown does not occur. Additionally, procedures include the reactor operator's responsibility to believe and respond conservatively to instrument indications unless they are proven incorrect.

2. Procedures include the senior reactor operator's authority and responsibility to determine the circumstances, analyze the cause, and determine that operations can proceed safely before the reactor is returned to power after a trip or an unscheduled or unexplained reduction in power. Additionally, procedures include the senior reactor operator's responsibility to be present at BVPS-2 and to provide direction for returning the reactor to power following a trip or an unscheduled or unexpected power reduction.

The administrative procedures require that all documents such as those described previously, including any revisions or changes thereto, are reviewed for adequacy by authorized personnel, approved for release by authorized personnel, distributed to personnel performing the activity, and used by the personnel performing the activity.

13.5.1.1 Preparation of Procedures

BVPS has developed administrative procedures governing policy and conduct of operations for BVPS.

13.5.1.2 Initial Test Program

The organizational system for control of the initial test program is described in Section 14.2. Section 14.2.3 describes the method used to develop, review and approve individual test procedures. Section 14.2.4 describes the administrative control mechanisms governing conduct of the test program. Section 14.2.5 describes the controls that govern the review, evaluation, and approval of test results.

13.5.2 Operating and Maintenance Procedures

Operating and maintenance procedures are established for the BVPS operating organization to ensure that routine operating, off-normal, and emergency activities are conducted in a safe manner. The administrative procedures define the mechanisms to be employed by the various groups in the preparation of that group's procedures. Operating and maintenance procedures were prepared in accordance with the intent of Regulatory Guide 1.33 Revision 2 and ANSI/ANS 3.2-1976.

13.5.2.1 Control Room Operating Procedures

No change in station parameters that may affect the reactivity and power level of the core, and no change in valving or switching that may compromise the availability of engineered safeguards will be made without written procedures. Table 13.5-3 lists the subjects included in the BVPS-2 Operating Manual which relate to normal, abnormal, and emergency operation of safety-related and nonsafety-related systems and equipment. The Operating Manual is composed of individual chapters which contain detailed operating procedures. These procedures present clear and concise directions to BVPS management and operating personnel, thus ensuring system operations are conducted in accordance with manufacturers' instructions, applicable rules and regulations, and in a manner conducive to overall plant safety. The operating procedures meet the intent of applicable Regulatory Guides including:

1. NUREG-0737 Item I.C.1
2. NUREG-0799
3. NUREG-0737 Item III.D.1.1
4. NUREG-0737 Item II.K.1.5
5. NUREG-0737 Item II.K.1.10
6. NUREG-0737 Item II.K.3.17

13.5.2.2 Radiation Protection Procedures

The BVPS radiation protection procedures establish the policy and procedures to ensure that radiation exposure received by persons working in, or making visits to, BVPS is maintained as low as reasonably achievable. Table 13.5-4 lists the subjects included in the radiation protection procedures.

13.5.2.3 Chemistry Procedures

The Chemistry organization establishes the policy and procedures to ensure that routine and special chemical and radiochemical tests and analyses produce meaningful, reproducible results. Table 13.5-5 lists the subjects included in the chemistry procedures.

13.5.2.4 Maintenance Procedures

Maintenance administrative procedures are established to minimize outages and assure the safe, efficient production of electrical power. The procedures outline standardized methods of implementation for maintenance work performed on safety-related systems and equipment consistent with the quality assurance program.

13.5.2.5 Engineering Procedures

Engineering Procedures were developed in accordance with the company Quality Assurance Program. These procedures govern the design, review and approval, installation, and completion of modifications accomplished at BVPS-2. Administrative procedures describe the involvement of the onsite and independent review committees with respect to engineering changes, to assure that plant safety is not compromised.

13.5.2.6 Equipment Control Procedures

Procedures are provided for control of equipment in order to maintain reactor and personnel safety and to avoid unauthorized operation of equipment. These procedures require control measures such as locking or tagging to secure and identify equipment in a controlled status. The procedures require independent verification, where appropriate, to ensure that necessary measures have been implemented correctly.

13.5.2.7 Station Security Procedures

Procedures have been developed to control access to sensitive areas and equipment of the station. Security procedures provide for visitor control, fences and lighting, lock controls, traffic provisions, badge identification for personnel and visitors, screening of potential employees, and inspection and observation of areas and individuals. A security program and procedures have been provided in accordance with ANSI N18.17, "Industrial Security For Nuclear Power Plants."

Tables for Section 13.5

TABLE 13.5-1

SCOPE OF ADMINISTRATIVE PROCEDURES

Administrative procedures address the following topics:

Administrative Controls/General instructions

Personnel Protection/General Safety

Training/Qualifications

Reports/Reporting

Correspondence/Documents/Records Control

Design/Modification Control

Assurance of Quality/Performance Programs

Procurement/Material Management

TABLE 13.5-3

SCOPE OF THE BVPS-2 OPERATING MANUAL

The Operating Manual includes but is not limited to, the following chapters which relate to normal, abnormal, and emergency operation of safety-related and nonsafety-related systems and equipment:

Chapter	
1	Reactor Control and Protection
2	Reactor Excore Instrumentation
3	Incore Instrumentation System
4	Plant Process Control System
5A	Plant Computer System
5B	Annunciator System
5C	ERFS/SPDS
5D	Plant Safety Monitoring System
6	Reactor Coolant System
7	Chemical and Volume Control System
8	Boron Recovery and Primary Grade Water System
9	Reactor Plant Vents and Drains
10	Residual Heat Removal System
11	Safety Injection System
12	Containment Vacuum and Leakage Monitoring
13	Containment Depressurization System
14A	Reactor Plant Sampling System
14B	Turbine Plant Sample System
14C	Post Accident Sampling System
15	Primary Component and Neutron Shield Tank Cooling Water Systems
16	Supplementary Leak Collection and Release System

TABLE 13.5-3 (Cont)

Chapter	
17	Liquid Waste Disposal System
18	Solid Waste Disposal System
19	Gaseous Waste Disposal System
20	Fuel Pool Cooling and Purification System
21	Main Steam System
22A	Condensate System
22B	Condensate Polishing System
23A	Extraction Steam System
23B	Heater Drains
24	Steam Generator Feedwater System
25	Steam Generator Blowdown System
26	Main Turbine and Condenser
27A	Auxiliary Steam and Condensate System
27B	Auxiliary Boiler System
28	Turbine Plant Component Cooling Water System
29	Chilled Water System
30	Service Water System
31	Circulating Water System
32	Water Treating System
33	Fire Protection System
34	Compressed Air System
35	Main Generator and Main Transformer
36	4 kV Station Service System
37	480 V Station Service System
38	120 V ac Distribution and Lighting System

TABLE 13.5-3 (Cont)

Chapter	
39	125 V dc Distribution System
40	Station Communications
41A	Building Services Hot Water Heating System
41C	Domestic Water System
41D	Building and Yard Drains
42	Sewage Treatment
43	Radiation Monitoring System
44A	Area Ventilation Systems - Control Area
44B	Area Ventilation System - Cooling System
44C	Area Ventilation Systems - Containment
44D	Area Ventilation Systems - Auxiliary Building
44F	Area Ventilation Systems - Miscellaneous
44G	Area Ventilation Systems - Condensate Polishing Building
45A	Loose Parts Monitoring
45B	Seismic Instrumentation System
45D	Electric Heat Tracing System
45E	Fault Recording System
46	Post DBA Hydrogen Control System
47	Containment
48	Conduct of Operations
49	Rx Engineering Procedures
50	Station Start-up
51	Station Shutdown
52	General Operating Instructions
53A	Emergency Operating Procedures

TABLE 13.5-3 (Cont)

Chapter	
53B	Emergency Operating Procedures - Executive Volume
53C	Abnormal Operating Procedures
54	Station Logs
55A	Periodic Checks - Operating Surveillance
56A	(Deleted)
56B	Fire Protection and Prevention
56C	Alternate Safe Shutdown from Outside Control Room
59A	South Office Shop Building
59B	Primary Access Facility

TABLE 13.5-4

SCOPE OF THE BVPS RADIATION PROTECTION PROCEDURES

The radiation protection procedures include the following topics:

General Program

Exposure Control

Contamination Control

Airborne Radioactivity Control

Monitoring and Surveys

Radioactive Material Control

Records, Reports, and Notifications

References and Commitments

Radiation Worker Practices

Radioactive Sources

Radiological Work Surveillance

Personnel Monitoring

Exposure Control/Dose Assessment

Radiological Work Controls

Radiation/Contamination Protection

Respiratory Protection

Worker Instruction/Processing

Radiological Instrument Calibration and Use

Emergency Use of Radiation Monitoring Systems and Equipment

Emergency Entry, Radiation Exposure Control and Monitoring

TABLE 13.5-5

SCOPE OF BVPS CHEMISTRY PROCEDURES

Chemistry procedures include the following topics:

1. Administrative Controls

    a. Introduction
    b. Conduct of Operations
    c. Chemistry Manual Description
    d. Laboratory Control Programs

2. Chemical Specifications

    a. Reactor Plant Chemicals
    b. Turbine Plant Chemicals
    c. Water Treating Chemicals
    d. Waste Disposal System Chemicals
    e. Laboratory Chemical and Counting Room Gases

3. Sampling and Testing

    a. Reactor Plant
    b. Turbine Plant
    c. Water Treating
    d. Waste Disposal
    e. Sewage Conveyance System
    f. Environmental Sampling Requirements
    g. Reactor Plant Sample System
    h. Turbine Plant Sample System
    i. Reactor Coolant Chemistry Follow During Initial Power Testing Sequence
    j. Beaver Valley Power Station Chlorination Study Program
    k. Gaseous Waste, Containment Air, and Continuous Releases Sampling Systems
    l. Liquid and Gaseous Radwaste

4. Analytical Methods

5. Radiochemistry Procedures

6. Post Accident Sampling Procedures

7. Chemical Additions

8. Logs and Forms

9. Conduct of Operations

10. Training Guidelines

13.6 SECURITY

BVPS has prepared a security plan that meets the intent of Regulatory Guide 1.17. This plan provides the protection needed to meet the general performance requirements of 10 CFR 73.55(a) and the objectives of the specific requirements of 10 CFR 73.55, paragraphs (b) through (h).

The approved security plan for BVPS-2, withheld from public disclosure pursuant to 10 CFR 2.790(d) and 73.21, "Requirements for the Protection of Safeguards Information," is identified as the "Beaver Valley Power Station Physical Security Plan."