

## CPS/USAR

### CHAPTER 13 - CONDUCT OF OPERATIONS

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## CHAPTER 13 CONDUCT OF OPERATIONS

### 13.0 INTRODUCTION

This chapter provides information relating to operation of the Clinton Power Station.

### 13.1 ORGANIZATIONAL STRUCTURE

Exelon Generation Company, LLC (Exelon), is a limited liability company that is a wholly-owned subsidiary of Exelon Corporation.

The members of the Exelon Corporate Organization have the necessary authority and full responsibility for the safe and reliable operation of the nuclear facilities licensed by Exelon.

The Nuclear Safety Review Board (NSRB) reports to and advises the President and CNO on nuclear safety matters. The NSRB is responsible for the independent review and audit function for the nuclear units licensed by Exelon.

#### 13.1.1 Corporate Organization

The resources required to support day-to-day operation and maintenance of each plant are located onsite and report to site management. Supplemental support for the sites is available, as needed, from the corporate organizations. Needed support is provided by assigned resources and is available upon request. Other support for the plants in the areas of human resources, business operations and nuclear oversight (i.e., the quality assurance function) is also provided as needed. Personnel from these organizations are located at headquarters and in regional offices in order to ensure timeliness and ready availability of support.

The corporate organizations establish and implement policies, programs, and processes to effectively and efficiently implement nuclear services and technical support functions in accordance with applicable regulations, codes, standards, and practices. Sufficient levels of management have been established within the functional areas in each support organization and dispersed between headquarters and the regional offices to provide clear management control and effective lines of authority and communication among the organizational units. The corporate organization structure is described in the QA Topical Report NO-AA-10.

In addition, the headquarters offices are staffed by personnel with sufficient expertise and experience to provide the required technical support and services for the safe and reliable operation of the nuclear facilities.

#### 13.1.2 Onsite Organization

The Site Organization section of the QA Topical Report, NO-AA-10, describes the structure, functions and responsibilities of the onsite organization established to operate and maintain the Clinton Power Station.

13.1.2.1 Plant Personnel Responsibilities and Authorities

The functions, responsibilities, and authorities of various CPS staff positions are described in OP-AA-101-111, "Roles and Responsibilities of On-Shift Personnel."

13.1.2.1.1 Succession of Authority

The Plant Manager is responsible for overall station operation. If the Plant Manager is unavailable, absent, or incapacitated, one of the following will be designated as responsible for all station activities:

- 1) Operations Director;
- 2) An Operations Middle Manager (which can be either the Operations Support Manager or the Shift Operations Superintendent); or
- 3) Shift Manager.

The delegation of authority including the authority to issue standing or special orders is specified in administrative procedures.

13.1.2.2 Operating Shift Crews

CPS typically utilizes a five or more operating shift crew rotation for Operations personnel. Each operating shift crew is qualified to carry out activities related to station operations.

13.1.2.2.1 Administrative Requirements

13.1.2.2.1.1 Command Function

The Shift Manager or during his absence from the Control Room, a designated individual, shall be responsible for the Control Room command function.

13.1.2.2.1.2 Unit Staff

- a. Each on duty shift shall be composed of at least the minimum shift crew composition shown in a Plant operations procedure.
- b. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or licensed Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation;
- c. A site fire brigade of at least five members shall be maintained on site at all times. The fire brigade shall not include the Shift Manager, the Shift Technical Advisor (or the OTA when the STA is not present), nor the two 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; and
- d. The amount of overtime worked by unit staff members performing safety-related function shall be limited in accordance with 10 CFR 26, Subpart I, "Managing Fatigue."

13.1.2.2.1.3 Minimum Shift Complement

The Minimum Shift Complement represents the normal number of personnel required on shift during Power Operations, Startup and Hot Shutdown, Cold Shutdown, and Refueling.

Staffing requirements are taken from 10 CFR 50.54(m) "Minimum Requirements per Shift for On-Site Staffing of Nuclear Power Units by Operators and Senior Operators Licensed Under 10 CFR Part 55," and the minimum staffing requirements for the on-shift ERO as shown on Table B-1 of the Exelon Nuclear Radiological Emergency Plan Annex for CPS.

Each shift crew shall include a Shift Manager or a person qualified and designated to act as a Shift Manager. Further, each shift crew shall include an individual qualified by education and experience to act as a Shift Technical Advisor during operating modes 1,2, and 3. If properly qualified per the STA Training Program Description, a Senior Reactor Operator may perform the STA function. If the Shift Manager or Control Room Supervisor fulfill the STA function an additional SRO who has no concurrent emergency duties shall perform the Emergency Plan role of providing independent oversight.

During refueling operations, a separate Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling shall supervise these operations and shall have no other concurrent duties.

An around-the-clock Radiological Protection Program is implemented by the presence of at least one Radiation Protection technician meeting ANSI/ANSI 3.1-1978 qualifications. Additional personnel are assigned as necessary to provide adequate coverage to meet station needs as determined by Radiation Protection supervision. RP Technicians report to the Radiation Protection Shift Supervisor.

Shift crew composition may be one less than the minimum requirements for a period of time not to exceed two hours in order to accommodate an unexpected absence of on-duty shift crew members provided immediate action is taken to restore composition to within the minimum requirements as stated. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

13.1.3 Qualifications of Nuclear Plant Personnel

13.1.3.1 Qualification Requirements

CPS has committed to the guidelines set forth in Regulatory Guide 1.8 for selection and training of management personnel with the exceptions noted in Section 1.8. Table 13.1-1 lists members of the plant staff and designates equivalent ANSI/ANS 3.1-1978 titles as a comparison.

13.1.3.2 Qualifications of Plant Personnel

The qualification of support staff personnel responsible for CPS technical support meet or exceed those requirements set by ANSI/ANS 3.1-1978. The training records of key staff personnel are available on request.

Table 13.1-1 moved to Exelon Procedure HR-AA-1004.



Table 13.1-2 has been relocated to Chapter 14 as Table 14.2-6.

## 13.2 TRAINING

### 13.2.1 Training System

The CPS Nuclear Training Program has been developed and implemented to ensure the health and safety of the public by:

- A. Ensuring that personnel are effectively trained and qualified to safely operate and maintain the plant throughout its design life.
- B. Meeting or exceeding all regulatory requirements.
- C. Meeting or exceeding the industry standards and practices identified in Section 1.8
- D. Meeting or exceeding the requirements established by INPO for accreditation of training programs.

The Nuclear Training Department programs are supported by a CPS-referenced simulator which has been certified by the NRC as meeting the requirements of ANSI/ANS 3.5 as endorsed by NRC Regulatory Guide 1.149. The simulator facility is a full scope simulator that meets the requirements of 10 CFR 55.45 and is located on-site.

#### 13.2.1.1 Accredited Training Programs

Training programs recognize a combination of education, experience, and skills commensurate with an individual's level of responsibility which provides reasonable assurances that decisions and actions during all plant conditions will be made consistent with plant safety procedures and operations limits established to protect the public health and safety.

The following key training programs are currently accredited by the National Nuclear Accrediting Board. The initial accreditation date for each training program is noted.

Control and Instrumentation Technician	November, 1988
Electrical Maintenance Personnel	November, 1988
Mechanical Maintenance Personnel	November, 1988
Chemistry Technician	November, 1988
Radiological Protection Technician	November, 1988
Engineering Support Personnel	November, 1988
Non-Licensed Operator	October, 1989
Reactor Operator	October, 1989
Senior Reactor Operator	October, 1989
Shift Technical Advisor	October, 1989
Licensed Operator Qualification	October, 1989
Shift Manager	Implemented May, 1992

Clinton Power Station will maintain these programs in an accredited status with the National Nuclear Accrediting Board or:

- A. will receive approval by the NRC for their content and structure and
- B. meet or exceed the requirements of Reg. Guide 1.8.

### **13.3 EMERGENCY PLANNING**

The Clinton Power Station Emergency Plan is a written emergency plan that establishes the necessary to limit and mitigate the consequences of potential or actual radiological emergencies. The CPS Emergency Plan provides the necessary prearrangements, directions, and organization so that all nuclear emergencies can be effectively and efficiently resolved in order to safeguard station personnel, property, and the general public.

The CPS Emergency Plan is intended to meet the emergency planning and preparedness requirements specified in Regulatory Guide 1.101, Revision 2 (October 1981), 10CFR50.47, and 10CFR50 Appendix E. The CPS Emergency Plan has been submitted to and approved by the NRC. It is reviewed annually; any changes or revisions are procedurally controlled and, when required by regulations, are submitted to the NRC for approval.

The CPS Emergency Plan:

- identifies onsite and offsite emergency response facilities,
- identifies equipment available for emergency assessment, communications, first aid and medical care, and damage control,
- provides for classification of emergencies into four categories,
- depicts notification requirements for classified events,
- makes provisions for prompt and accurate notifications to Federal, State and local governments and,
- describes actions necessary to mitigate an emergency.

Training is conducted for emergency response personnel to ensure their proficiency. The training programs for emergency response personnel are based on the requirements of 10CFR50.47 and 10CFR50 Appendix E. Evaluated exercises are conducted in order to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks, and to ensure that emergency response personnel are familiar with their duties. Each exercise involves participation by Federal, State, and/or local personnel as prescribed by regulatory requirements.

The CPS Emergency Plan revision and distribution is controlled by the appropriate procedures and is distributed on a controlled basis to all positions and locations requiring them, including appropriate Federal, State, and local agencies.

13.4 REVIEW AND AUDIT

The program for conducting reviews and audits for Clinton Power Station is conducted in accordance with Quality Assurance Topical Report NO-AA-10.

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### 13.5 PLANT PROCEDURES

The safe, efficient, and productive operation of the Clinton Power Station (CPS) is dependent upon trained and qualified people. A series of CPS procedures and Exelon procedures delineate the methods by which Clinton Power Station personnel are managed and directed. These procedures convey a single management philosophy addressing all aspects of plant management, including technical, quality, compliance, administrative, safety, personnel and environmental considerations. This management philosophy is communicated in procedures, which are divided into nine volumes to enhance the flow of work within the plant.

The CPS procedures are compiled in nine volumes that address plant specific requirements. The volumes shall be prepared by the plant staff under the direction of the Plant Manager.

The following is a list of the nine volumes of the CPS procedures:

Volume Number	Title
1	Administrative Procedures
2	Technical Procedures
3	System/Plant Operating Procedures
4	Off-Normal/Emergency Operating Procedures
5	Annunciator Procedures
6	Chemical/Radiochemical Procedures
7	Radiation Protection Procedures
8	Maintenance Procedures
9	Surveillance Procedures

Exelon procedures, including Clinton specific Exelon procedures shall be prepared in accordance with the Exelon Writer's Guide using the Exelon Procedure and Training & Reference Material Process or the CPS process, as appropriate. The USAR sections below describe only CPS procedures and the processing of CPS procedures.

#### 13.5.1 Administrative Procedures

##### 13.5.1.1 Conformance with Regulatory Guide 1.33

The plant procedures necessary to cover the systems, activities and subjects listed in Appendix A to Regulatory Guide 1.33 shall be developed. Each of these procedures are sufficiently detailed for a qualified individual to perform the required functions without direct supervision, but need not provide a complete description of the system or plant process. The format of CPS plant procedures are controlled by an Administrative Procedure meeting the guidelines of ANSI N18.7.

#### 13.5.1.2 Preparation of Procedures

Procedures needed for fuel loading were written by the plant staff or consultants prior to fuel loading. Procedures required for plant operations under normal and emergency conditions were written by the plant staff or consultants, to the extent practical, for use during the initial plant testing phase to allow for correction prior to fuel loading and for use in the plant operator training program. The responsibility for writing, reviewing and implementing plant procedures is delineated in Section 3, Responsibility, of each procedure.

Procedures requiring a full evaluation in accordance with 10CFR50.59 are reviewed by the PORC and approved by the Plant Manager-Clinton Power Station prior to implementation. Administrative procedures, safety-related procedures, and procedures not requiring a full 50.59 evaluation are approved by the responsible Department Head/Designee prior to implementation. Procedures are reviewed periodically as set forth in Administrative Procedures. Temporary changes to procedures which clearly do not change the intent of the approved procedure shall, as a minimum, be approved by two members of the plant staff knowledgeable in the areas affected by the procedure. At least one of the two members of plant management staff shall hold a Senior Reactor Operator's license. Section 13.4 defines types of procedures requiring PORC review.

Appropriate plant management shall approve all permanent and temporary procedures in accordance with Administrative Procedure requirements. Distribution of CPS procedures shall be controlled as prescribed in appropriate Administrative Procedures. Subsequent revisions, changes or temporary changes shall be controlled in accordance with the Administrative Procedures and as prescribed by the Technical Specifications and the Operational Requirements Manual (ORM). Changes which conflict with the intent of the Operating License and/or the Technical Specifications or involve an unreviewed safety question shall be made only with the review of the PORC and the NSRB and authorization from the Nuclear Regulatory Commission.

#### 13.5.1.3 Procedures

Administrative Procedures which consist of Plant Management Procedures (PMP's), Department Administrative Procedures, and Plant Management Special Procedures define the responsibilities, methodology, and procedural actions required to assure that the plant shall be managed in a safe and dependable manner. They include basic guidelines and controls for efficient dissemination of information and direction to plant personnel and describe the interfaces with external organizations. Plant procedures describe the method by which operating experience information is disseminated to plant personnel.

The Plant Management Procedures describe station functions required to implement the Operational Quality Assurance Program and other plant activities, assign departmental responsibilities for performing these functions, and delineate activities and methods which are applicable to all personnel assigned work at CPS. Departmental Administrative Procedures describe the functions required to implement the Plant Management Procedures and assign group responsibilities. The Plant Management and Departmental Administrative Procedures are issued and include the following:

1. Reactor Operator and Senior Operator authority and responsibilities.
2. The requirements of 10CFR50.54 (i), (j), (k), (l), and (m).

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### NOTE

The space designated for the "At the Controls" area of the Control Room is shown in Figure 13.5-1.

3. Special orders of a temporary or self-canceling nature.
4. Equipment control.
5. Control of maintenance and modifications.
6. Surveillance testing.
7. Logbook usage and control.
8. Temporary procedure issuance and control.

The Plant Management Special Procedures describe the functions required to implement the special requirements imposed by various codes and standards and assign departmental responsibilities for accomplishing these functions. In addition, the Administrative Procedures assure that the records, logs, and files are maintained to provide evidence of the safe and dependable operation of the plant.

Administrative Procedures are written in the format outlined in Table 13.5-2.

### 13.5.2 Operating and Maintenance Procedures

#### 13.5.2.1 Control Room Operating Procedures

The procedures described in this section are followed primarily by licensed operators or reflect licensed operator actions in the performance of their work. Operating procedures are arranged categorically and include a descriptive title for each procedure identified within the classification.

#### 13.5.2.1.1 System and Plant Operating Procedures

System and Plant Operating Procedures describe the sequence of steps to be performed to properly operate equipment, components, systems or combinations of systems. The sequence of steps required for integrated plant operations is also covered. Instructions for energizing, filling, venting, draining, starting up, shutting down, changing modes of operation and other instructions appropriate for operation of systems related to the safety of the plant are delineated in the System and Plant Operating Procedures.

A typical listing of these procedures is provided in Table 13.5-3. The various classifications of procedures are as follows:

- Integrated Plant Operating Procedures
  - Turbine Cycle Systems
  - Auxiliary Cycle Systems
  - NSSS Systems
  - HVAC Systems
  - Electrical Systems
  - Fuel Handling Systems
  - Radwaste Processing Systems

The format for Plant and System Operating Procedures is provided in Table 13.5-2.

Procedures shall require crane operators who operate cranes over fuel pools be qualified and conduct themselves in accordance with ANSI B30.2-1976.

Clinton Power Station is equipped with status monitoring that satisfies the requirements of Regulatory Guide 1.47. This status monitoring provides the ability for the operator to identify most conditions that would render a safety system inoperable. The system enables the operator to verify that the correct system is undergoing maintenance or test; when a system is placed out of service, an alarm provides that verification. Periodic monitoring of the system is assured through the shift relief and turnover checklist, although routine visual checks are expected. Independent verification of safety-related system valve and electrical lineups for isolation of components for maintenance, for restoration of components following maintenance, and for surveillance procedures shall be performed. The following are exceptions to Independent Verification, Concurrent Verification is required for: THROTTLED valves with a pre-determined valve position, Bus Metering and Potential Fuses. Verification of major flow paths shall normally consist of a second visual verification, remotely when possible, that the valve/breaker is in the correct position. Verification of non-major flow lines may consist of functional testing where conditions such as radiation levels dictate. Post maintenance testing, additionally, may preclude the need for another verification that a system/component has been correctly restored.

Radioactive waste management procedures fall under the category of System and Plant Operating Procedures. Typical radioactive waste management procedures are listed in the Radwaste Processing Systems section of Table 13.5-3.

#### 13.5.2.1.2 Off-Normal Procedures

Off-Normal Procedures describe actions to be taken during other than routine operations, which if continued, could lead to either material failure, personnel harm, or other unsafe conditions. These procedures are written so that a trained operator shall know in advance the expected course of events or indications that shall identify an off-normal situation and immediate action which should be taken. Since off-normal situations do not follow anticipated patterns, the procedures are so written to provide sufficient flexibility for accommodating variations. Off-Normal Procedures are written in the format outlined in Table 13.5-4. A typical list of Off-Normal Procedures is provided in Table 13.5-5.

#### 13.5.2.1.3 Emergency Operating Procedures

Emergency Operating Procedures (EOPs) are plant procedures that direct operators' actions necessary to mitigate the consequences of transients and accidents that have caused plant parameters to exceed reactor protection system set points or engineered safety feature setpoints, or other established limits. The EOPs consist of symptom-oriented flowcharts designed to provide operator direction in response to critical plant parameters, and text-based support procedures written to provide specific operating guidance in response to an EOP event. The EOP flowcharts are prepared in accordance with the BWR Owner's Group Emergency Procedure Guidelines. The EOP text-based support procedures are written to the guidelines and format requirements found in the CPS EOP Program and Preparation manuals and procedures. EOP flowcharts and support procedures are identified as a unique series of off-Normal Procedures and are listed in Table 13.5-5. For beyond design basis events where core cooling can no longer be assured in the EOPs, directions and guidelines for protecting the

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containment and minimizing accident impact on the public are found in the Severe Accident Guidelines (SAG). These beyond design basis guidelines are prepared in accordance with the BWR Owner's Group Severe Accident Guidelines and CPS EOP Program and Preparation Manuals.

### 13.5.2.1.4 Annunciator Procedures

Alarm Procedures provide the following information associated with an annunciator: title and location, possible causes for the alarm, indications to determine the validity of the alarm, and automatic and manual actions in response to the alarm. They are identified numerically by alarm panel number and by row number on the particular panel. The individual alarm responses are designated alphanumerically by window.

### 13.5.2.1.5 Temporary Procedures

Temporary Procedures may be used to provide guidance in unusual situations not within the scope of CPS procedures and to ensure orderly and uniform operations for short periods when the plant, a system, or a component of a system is performing in a manner such that portions of existing procedures do not apply.

### 13.5.2.2 Other Procedures

This section describes how other procedures are classified, what group within the CPS organization has the responsibility for following each class of procedures, and outlines the general objectives and character of each class of procedure.

#### 13.5.2.2.1 Technical Procedures

Technical Procedures provide the necessary steps or guidelines for carrying out the various technical programs associated with the performance of fuel, balance-of-plant, environs, and other ongoing programs. The procedures are prepared by the Nuclear Station Engineering Department and are under the cognizance of the Manager - Nuclear Station Engineering. Procurement Engineering procedures are prepared by the Procurement Engineering group of Material Management and are under the cognizance of the Director - Material Management.

#### 13.5.2.2.2 Chemical/Radiochemical Procedures

Chemical/Radiochemical Procedures describe the plant chemistry and radiochemistry equipment and methods of analysis used in the plant. The procedures are prepared by the Chemistry Department and are under the cognizance of the Director - Chemistry.

#### 13.5.2.2.3 Radiation Protection Procedures

Radiation Protection Procedures describe the methods for monitoring both external and internal exposures to personnel radiation, surveys, radiation monitoring of maintenance and special work activities, operation of various equipment. The procedures are prepared by the Radiation Protection Department and are under the cognizance of the designated Radiation Protection Manager or appropriate Group Supervisors.

**13.5.2.2.4     Maintenance Procedures**

Maintenance Procedures provide the sequence of steps required to repair, replace, service, calibrate, or overhaul a component, instrument, or system. The procedures contain enough detail to permit maintenance work to be performed correctly and safely. Additionally, Maintenance Procedures provide direction for conducting maintenance inspections. The procedures are prepared by the Maintenance Department and are under the cognizance of the Manager - Maintenance.

**13.5.2.2.5     Emergency Plan Implementing Procedures**

Procedures to implement the Emergency Plan were prepared prior to fuel load and complied with applicable guidelines. These procedures were written by the Emergency Preparedness Staff.

**13.5.2.2.6     Security Plan Implementing Procedures**

Procedures to implement the CPS Security Plan were developed prior to initial fuel load.

These procedures were written and remain under the cognizance of the Manager - Security and the procedures which contain safeguards information shall be withheld from public disclosure.

**13.5.2.2.7     Surveillance Procedures**

Surveillance Procedures prescribe the method for which systems and components important to safety are inspected and/or tested. Plant Technical Specifications, Operations Requirement Manual and the Offsite Dose Calculation Manual delineate the frequency and type of surveillance tests/inspections to be performed. It is the responsibility of the appropriate department personnel having accountability of the equipment/operation to prepare and follow appropriate surveillance procedures.

TABLE 13.5-1  
Deleted

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TABLE 13.5-2  
FORMAT FOR OTHER THAN "ABNORMAL" OR "ANNUNCIATOR" PROCEDURES

Procedures include, as appropriate, the following elements:

- Title: A title description of the work or system or unit to which the procedure applies, a revision number or date, and an approval status.
- 1.0 Purpose - A brief description of the purpose for which the procedure is intended is clearly stated; for example, for use during reactor or plant startup.
- 2.0 Discussion/Definitions - A brief description of the applicable component, system, or task for understanding the background, function, or interrelationships of the procedure. Definitions if necessary.
- 3.0 Responsibility - Indicates the member of CPS management staff responsible for ensuring the proper implementation of the procedure.
- 4.0 Precautions - Precautions to alert the individual performing the task to those important measures used to protect equipment and personnel, including the public, or to avoid an abnormal or emergency situation are listed in this section. Cautions and warnings specific to steps of the procedure appear within the body of the procedure.
- 5.0 Prerequisites - This section contains independent actions or procedures which must be completed and plant and environmental conditions which shall exist prior to the use of the procedure. Prerequisites applicable to only certain sections of the procedure should also be identified.
- 6.0 Limitations - Limitations on the parameters being controlled and appropriate corrective measures to return the parameter to the normal control band should be specified. Administrative limits may be included.
- 7.0 Materials and/or Test Equipment - Lists special tools and equipment, reagents, instrumentation, measuring and test equipment, materials, etc., required to accomplish the work in accordance with the procedure.
- 8.0 Procedure - Step-by-step directions to the degree necessary to guide personnel into achieving the stated purpose of the procedure.
- 9.0 Acceptance Criteria - Specific criteria against which test or inspection results shall be judged for approval/disapproval.
- 10.0 Final Conditions - Listing of those tasks required to return the applicable component or system to operational status.
- 11.0 References - References, including references to Technical Specifications, should be included in procedures as applicable. Identified documents or manuals referred to for the purpose of providing background information are listed in this section.

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TABLE 13.5-2 (Cont'd)

- 12.0 Appendices - Applicable appendices such as engineering listings, sketches, photographs, vendor information, engineering drawings, additional supporting information, etc. may be included in this section.
- 13.0 Documents - Complex procedures should have checkoff lists (i.e., datasheets, forms, checklists, valve line-ups, electrical line-ups, etc.). These lists may be included as part of the procedure or may be appended to the procedure.

TABLE 13.5-3  
SYSTEM AND PLANT OPERATING PROCEDURES

INTEGRATED PLANT OPERATING PROCEDURES

Approach to Criticality  
Heatup and Pressurization  
Startup from Hot Standby  
Turbine Startup and Generator Synchronization  
Unit Power Changes  
Unit Shutdown with Condenser  
Unit Shutdown without Condenser  
Unit Cooldown

TURBINE CYCLE SYSTEMS PROCEDURES

Main Steam (MS & IS)  
Extraction Steam/Heater Vent and Drains (ES, HD, DV)  
Feedwater (FW)  
Cond. and Cond. Booster (CD & CB)  
Turbine Generator (TG, EHC & TS)  
Moisture Separator Reheater  
Turbine Gland Seal (GS)  
Turbine Oil and Transfer (OT, TO)  
Generator Seal Oil (SO)  
Generator Stator Cooling (GC)  
Generator Gas (HY, CO)  
Condenser Vacuum (CA)  
Circulating Water (CW)

AUXILIARY CYCLE SYSTEM PROCEDURES

Acid and Caustic Handling (AC & OH)  
Auxiliary Steam (AS)  
Component Cooling Water (CC)  
Turbine Bldg. Closed Cooling Water (WT)  
Make-Up Water Pump House (WM)  
Potable Water (WD)  
Filtered Water (TW)  
Cycled Condensate (CY)  
Chlorination (CL)  
Screen Wash (SW)  
Shutdown Service Water (SX)  
Plant Service Water (WS)  
Fire Detection and Protection  
Plant Air (IA & SA)  
Off-Gas (OG)

NSSS SYSTEMS

Nuclear Boiler (NB)  
Reactor Recirculation (RR)

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TABLE 13.5-3 (Cont'd)

Reactor Water Cleanup (RT)  
Control Rod Hydraulics & Control (RD & RC & IS)  
Reactor Protection (RPS)  
Source Range Monitors (SRM)  
Intermediate Range Monitors (IRM)  
Local Power Range/Average Power Range Monitors (LPRM & APRM)  
High Pressure Core Spray (HPCS)  
Reactor Core Isolation Cooling (RCIC)  
Automatic Depressurization System (ADS)  
Residual Heat Removal (RHR)  
Low Pressure Core System (LPCS)  
Standby Liquid Control (SLC)  
Containment Monitoring/Leak Detection (CM & LD)  
Containment Combustible Gas Control (HG)  
Fuel Pool Cooling and Cleanup (FC)  
Suppression Pool Cleanup & Transfer (SF)  
Standby Gas Treatment (VG)  
Drywell Cooling (VP)  
Drywell Purge (VQ)  
Traversing In-Core Probe (TIP)

### **HVAC SYSTEMS**

Auxiliary Building HVAC (VA)  
Control Room HVAC (VC)  
Diesel Generator HVAC (VD)  
Fuel Building HVAC (VF)  
Screenhouse and Make-Up Water Pumphouse HVAC (VH)  
Machine Shop HVAC (VJ)  
Off-Gas Building HVAC (VO)  
Containment Building HVAC (VR)  
Service Building HVAC (VS)  
Turbine Building HVAC (VT)  
Radwaste Building HVAC (VW)  
Essential Switchgear Heat Removal (VX)  
Plant Chilled Water System (WO)  
Laboratory HVAC (VL)

### **ELECTRICAL SYSTEMS**

6.9 kv and 4 kv VAC Auxiliary Power System  
480 VAC Auxiliary Power System  
Battery & D-C Distribution  
Main Power System  
Switchyard & 13.8 kv Auxiliary Power  
Diesel Generator & Support Systems  
Lighting and Low Voltage Systems  
Cathodic Protection

TABLE 13.5-3 (Cont'd)

Fuel Handling Procedures

New Fuel Receiving and Handling  
Containment/Fuel Building Transfer  
Refueling Operations  
Fuel Slipping Operations  
Cask Handling and Transfer

Radwaste Processing Systems

OP\* Bldg. Equipment Drain System  
OP Equipment Drain Collection System  
OP Bldg. Floor Drain System  
OP Floor Drain Collection System  
OP Bldg. Chemical Waste System  
OP Chemical Waste Collection System  
OP Bldg. Laundry Drain System  
OP Laundry Drain Collection System  
Operating Radwaste Filters  
Processing Waste Through the RW Filters  
Operating Radwaste Demineralizers  
Processing Waste Through the RW Demineralizers  
Operating Radwaste Evaporators  
Processing Waste with the RW Evaps  
Operating Waste Sample Tanks  
Operating Excess Water Tanks  
Discharging from the Station  
OP Spent Resin System  
OP Phase Separators  
OP F/P F/D Sludge System  
OP Concentrate Waste System  
OP Waste Sludge System  
Operating Solidification System  
Operating Solid Radwaste Components

\* OP = Operating Procedure

TABLE 13.5-4  
"OFF-NORMAL" PROCEDURE FORMAT

Procedure Title - The title describes the "off-normal" situation for which the procedure is provided.

1. Symptoms - Symptoms are included to aid in the identification of the situation. They include alarms, operating conditions, and probable magnitudes of parameter changes. If one condition is peculiar to the situation under consideration, it is listed first.
2. Automatic Action - Describes automatic action expected to occur (State "none" if not pertinent).
3. Immediate Operator Action - These steps specify immediate actions for operation of controls and confirmation of automatic actions that are required to stop the degradation of conditions and mitigate their consequences. Examples may include (a) verification of automatic actions, (b) assurance that the reactor is in a safe condition, (c) notification of station personnel of the nature of the situation, (d) determination that containment and exhaust systems are operating properly in order to prevent uncontrolled releases of radioactivity.
4. Subsequent Action - Steps are included to return the reactor to a normal condition or to provide for a safe extended shutdown period under off-normal conditions.
5. Final Conditions - These steps specify the documentation, authorizations, and plant conditions that must be completed prior to resumption of normal operation.
6. Discussion - A brief explanation of the procedure. This section should contain background information, causes, effects, and other information that may assist in clarifying the procedure and analyzing symptoms.
7. References - Lists various materials used to develop the procedure.

TABLE 13.5-5  
"OFF-NORMAL" PROCEDURES

SYSTEMS/PLANT FAILURES

Reactor Coolant Leakage (Tech. Spec. Limit)  
Remote Shutdown  
Loss of Control Air  
Reactor Scram  
Loss of AC Power  
Loss of DC Power  
Loss of Reactor Coolant Flow  
Inadvertent Opening Safety/Relief Valve  
Automatic Isolation  
Reactor Cavity Leakage During Refueling  
Spent Fuel Pool Abnormal Water Level Decrease  
Toxic Gas Release  
Flooding

FEEDWATER PROBLEMS

Loss of Feedwater

CONTROL ROD PROBLEMS

Inadvertent Rod Movement  
Rod Drop

CHEM/RADCHEM PROBLEMS

Reactor Coolant High Activity  
Plant Chemistry

NATURAL DISASTER/OTHER MISC

Earthquake  
Tornado  
Security Intrusion

RADIATION PROBLEMS

High Airborne Activity  
High Airborne Radioactivity

RADIOACTIVE MATERIAL RELEASES

Abnormal Releases of Radioactive Liquid  
Abnormal Airborne Radioactive Release  
Radioactive Liquid Spill

TABLE 13.5-5 (Cont'd)

**EMERGENCY OPERATING PROCEDURES**

**Flowcharts:**

RPV Control  
Primary Containment Control  
RPV Flooding  
ATWS RPV Control  
Hydrogen Control  
Secondary Containment Control  
Radioactivity Release Control  
Emergency RPV Depressurization

**Supporting Procedure Series:**

Bypassing/Defeating EOP Interlocks Series  
Amplifying EOP Operator Actions Series  
Chemistry Sampling During EOP Conditions Series

**Severe Accident Guidelines (SAG)**

Primary Containment Flooding flowchart  
RPV, Containment, and Radioactivity Release Control flowchart  
Support Procedures  
Technical Support Guidelines (TSG)

**FUEL BUNDLE PROBLEMS**

Dropped Fuel Bundle in the Fuel Building  
Dropped Fuel Bundle in the Containment Building



### 13.6 PHYSICAL SECURITY PLAN

Clinton Power Station (CPS) implements and maintains in effect all provisions of the NRC approved physical security, guard training and qualification, and safeguards contingency plans for CPS in accordance with the operating license. The plans are specified in the following documents, as revised and filed with the NRC.

- A. Clinton Power Station Security Plan,
- B. Clinton Power Station Security Personnel Training and Qualification Plan, and
- C. Clinton Power Station Safeguards Contingency Plan.

These plans meet the requirements of 10CFR 73.55 and Part 73, Appendices B and C, and ANSI N18.17-1973.

Procedures to implement the CPS Security Plan were developed to establish administrative requirements and responsibilities for the plant security program and to supplement features and physical barriers designed to control access to the plant and, as appropriate, to vital areas within the plant. These procedures were written and remain under the cognizance of the Manager - Nuclear Security and the procedures that contain Safeguards Information shall be withheld from public disclosure.

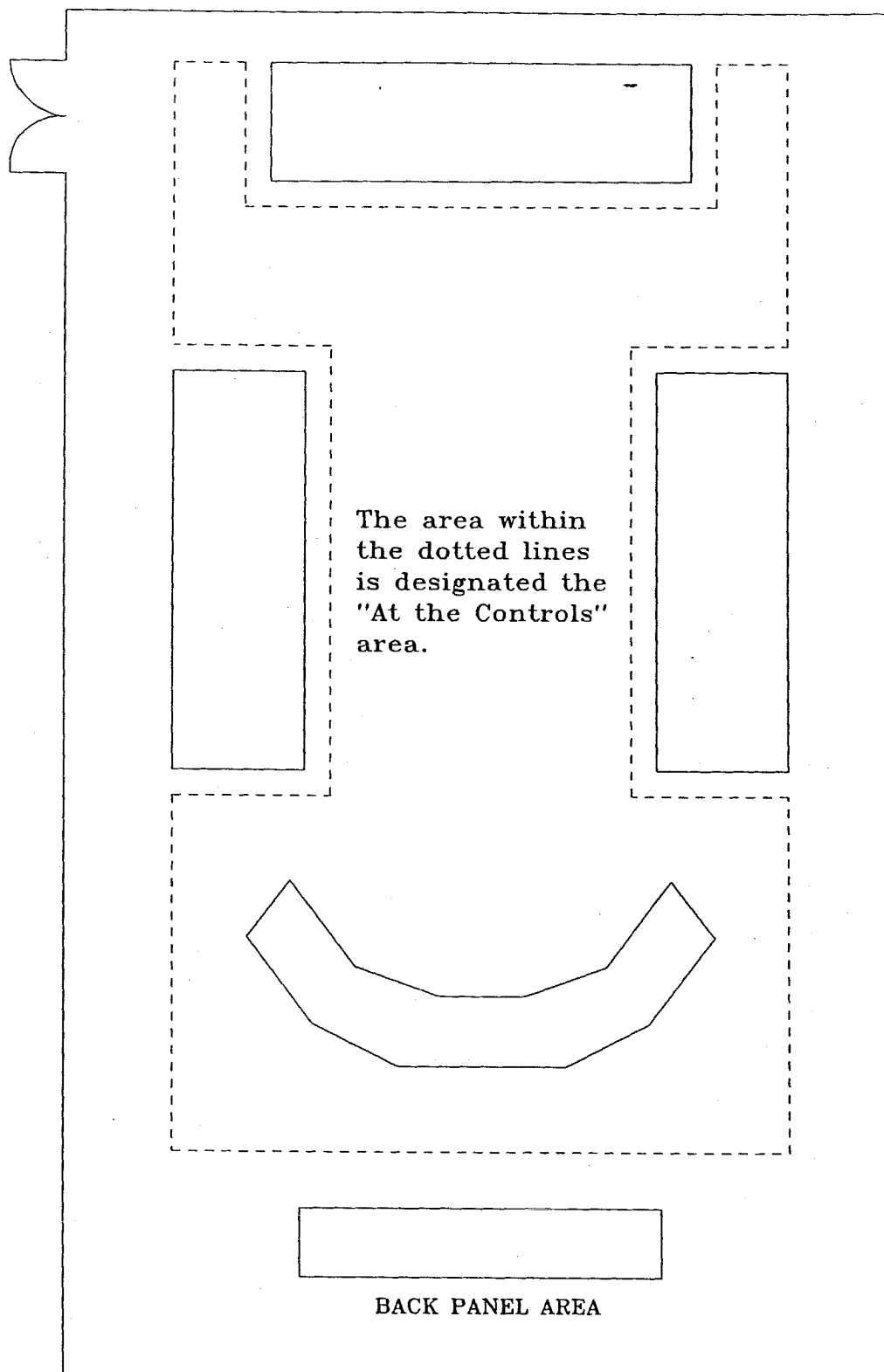
The Security Plans document Safeguards Information protected under 10CFR73.21 and are, therefore, withheld from public disclosure..

Document control methods limit distribution of, and access to, the approved plan and procedures to persons approved by CPS.

The Supervisor-Security is responsible for administration and implementation of the plan, which has been reviewed by the PORC and approved by the Manager-Clinton Power Station. Enforcement of access control and security surveillance shall be the responsibility of the integrated security force.

Security incidents which directly affect the integrity of Clinton Power Station's security shall be resolved in accordance with established procedures.

All elements of Regulatory Guide 5.66 have been implemented to satisfy the requirements of 10CFR73.56.



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FIGURE 13.5-1  
DIAGRAM OF "AT THE  
CONTROLS" AREA