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CHAPTER 13.0 - CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE

13.1.1 Management and Technical Support Organization

The Exelon Generation Company corporate organization and its functions and responsibilities are described in Section 1.0 of the Quality Assurance Program, on file with the Nuclear Regulatory Commission. Responsibilities and qualifications for the management and technical support organization are contained in the corporate-specific summary position descriptions (SPDs).

13.1.2 Operating Organization

This subsection describes the structure, functions, and responsibilities of the onsite organization established to operate and maintain the plant.

13.1.2.1 Plant Organization

A description of the plant organization is provided in Quality Assurance Topical Report NO-AA-10.

13.1.2.2 Plant Personnel Responsibility and Authorities

The basic job functions of plant positions are described in the summary position descriptions (SPDs). The SPDs are controlled and maintained by the Human Resources Department.

13.1.2.3 Operating Shift Crews

Positions and applicable operator licensing requirements are identified in Technical Specification 5.2.

The minimum number of personnel required for each shift is provided in Table 13.1-1.

A minimum of one Radiation-Protection Technician per shift is available to provide around-the-clock coverage for implementation of the Radiation Protection Program. Additional personnel are scheduled to cover special jobs or work loads as necessary.

13.1.3 Qualifications of Nuclear Plant Personnel

13.1.3.1 Qualification Requirements

The Byron/Braidwood Management follows the guidelines of ANSI/ANS 3.1-2014, for personnel selection and training, except as specified in the following:

The education and experience eligibility requirements for operator license applicants are described in the Quality Assurance Topical Report, NO-AA-10, and in an applicable station training procedure.

B/B-UFSAR

Radiation Protection Technicians at B/B will be qualified for this position as required by ANSI/ANS 3.1-2014, except that individuals in training will perform work for which qualification has been demonstrated in order to obtain the experience required by the ANSI standard.

The shift crew shall include an individual qualified in radiation protection procedures. An individual shall be considered qualified in radiation protection procedures upon certification by the licensee that he is capable of successfully accomplishing the following activities:

- a. Conduct special and routine radiation, contamination and airborne radioactivity surveys and evaluate the results.
- b. Establish protective barriers and post appropriate radiological signs.
- c. Establish means of limiting exposure rates and accumulated radiation doses, including the use of protective clothing and respiratory protection equipment.
- d. Perform operability checks of radiation monitors and survey meters.
- e. Recommend appropriate immediate actions in the event of a radiological problem and perform necessary activities until the arrival of health physics personnel.
- f. Conduct other routine radiological duties (e.g., Technical Specification surveillance items) as may be required on backshifts or weekends.

Individuals assigned to a shift crew who do not meet the experience requirements of ANSI/ANS 3.1-2014, may perform Radiation Protection activities for which qualification has been demonstrated provided that the results of analyses performed by the individual are reviewed by:

- a. A technician who meets the requirements of ANSI/ANS 3.1-2014, Section 4.5.3, or
- b. A supervisor not requiring an NRC license who meets the requirements of ANSI/ANS 3.1-2014, Section 4.5.3, or
- c. An individual who meets the requirements of ANSI/ANS 3.1-2014, Section 4.4.5, "Radiochemistry" (chemistry management only).

Station Administrative procedures list plant staff positions and provide ANSI equivalent titles.

13.1.4 Organization For the Fire Protection Program

13.1.4.1 Responsibilities and Authorities

The Quality Assurance Program for Byron/Braidwood Stations is covered in the Quality Assurance Program for Nuclear Generating Stations, which establishes requirements for design, procurement, installation, testing, and administrative controls for the fire protection program.

Several departments within the existing Exelon Generation Company organization have been assigned the responsibility of implementing and maintaining the fire protection program for the Byron/Braidwood Stations. A specific identification of the administrative and functional responsibilities within each department of the organization is provided in each station's fire protection program administrative procedures and the Byron/Braidwood Stations Fire Protection Report.

13.1.5 References

1. Quality Assurance Program Topical Report NO-AA-10.

TABLE 13.1-1

MINIMUM SHIFT CREW COMPOSITION^{(a) (f)}

| POSITION ^(b) | MINIMUM CREW NUMBER | | |
|-------------------------|------------------------------------|---|---------------------------------------|
| | EACH UNIT IN MODE 1, 2, 3, OR 4 | ONE UNIT IN MODE 1, 2, 3, OR 4, AND ONE UNIT IN MODE 5, 6 OR DEFUELED | EACH UNIT IN MODE 5, 6 OR DEFUELED |
| SM | 1 | 1 | 1 |
| SRO | 1 | 1 | None ^(e) |
| RO ^(d) | 3 | 3 | 2 |
| AO ^(d) | 3 | 3 | 3 |
| STA ^(c) | 1 | 1 | None |

- (a) The shift crew composition may be one less than the minimum requirements for not more than 2 hours to accommodate unexpected absence of on-duty shift crew members, provided immediate action is taken to restore the shift crew composition to within the minimum requirements. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crew member being late or absent.
- (b) Table Notation:
- SM - Shift Manager with a Senior Reactor Operator license
 - SRO - Individual with a Senior Reactor Operator license
 - RO - Individual with a Reactor Operator license or a Senior Reactor Operator license
 - AO - Auxiliary Operator
 - STA - Shift Technical Advisor
- (c) The STA position may be filled by any individual who meets the Commission Policy Statement on Engineering Expertise on Shift.
- (d) At least one of the required individuals must be assigned to the designated position for each unit.
- (e) At least one licensed Senior Reactor Operator or licensed Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities must be present during CORE ALTERATIONS on either unit.
- (f) With either Unit in MODE 1, 2, 3, or 4, an individual with a Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. With both units in MODE 5, 6, or defueled, an individual with a SRO license or Reactor Operator license shall be designated to assume the control room command function.

13.2 TRAINING

13.2.1 Plant Training Programs

Braidwood/Byron Nuclear Station(s) provide training formulated to develop and maintain an organization qualified to operate, maintain, and support the facility in a safe and reliable manner. Achievement of this goal is based on a philosophy of providing training developed from a systems approach to training (SAT) process. This philosophy is consistent with both Nuclear Regulatory Commission (NRC) requirements 10 CFR parts 50 and 55, as well as the Institute of Nuclear Power Operations (INPO) recommendations for the accreditation of training programs by the National Academy of Nuclear Training Program descriptions (Academy Document (ACAD)), corporate training program procedures, and site specific training procedures.

Retraining and replacement training of station personnel is conducted in accordance with the Quality Assurance Topical Report, NO-AA-10. The frequency of retraining and continuing training programs is determined by following the SAT process. The retraining (continuing) program meets or exceeds the requirements and recommendations of Section 5 of ANSI/ANS 3.1-2014.

13.2.2 General Training Programs

There are three types of training:

- Initial training, which provides indoctrination and training on safety and job skills commensurate with an individual's position;
- Continuing and/or refresher training, which reinforces or increases knowledge and skills from initial training and on-the-job experience; and
- Special or task-related training, which acquaints personnel with complex processes, procedures, or equipment not used on a routine basis.

13.2.3 General Employee Training

General Employee training is administered to all personnel at Braidwood/Byron Station(s) (except to individuals who received authorized equivalent training) in accordance with the requirements of 10 CFR 19. When necessary, training in the use of respiratory equipment is provided in conjunction with General Employee training. All employees (and others) who have unescorted access to Radiation Controlled Areas of the station will receive in-depth instruction in all aspects of radiation protection and, as required, respiratory protection.

13.2.4 New Employee Orientation Training

This program provides the new employee with a fundamental knowledge of company and station policies.

13.2.5 Exelon Standardized Radiological Emergency Plan Training

Emergency Plan training ensures that all station personnel are trained as needed for the implementation of the Emergency Plan (E-Plan) in order to provide for health and safety of the public, including station employees, and to limit damage to the facility and property. Station personnel designated as emergency response personnel receive initial training and annual retraining in accordance with the corporate training and site specific training program procedures. Training addresses applicable generic and site-specific portions of the E-Plan and corresponding implementing procedures. Additionally, participation in exercises and/or drills enhances skills which personnel are expected to use in the event of a nuclear emergency. After completing initial training, trainees enter the retraining (refresher) program.

13.2.6 Operations Department

13.2.6.1 Training programs for Non-licensed Personnel

To maintain INPO accreditation Non-licensed (Equipment Operator (EO)) training will comply with:

- SAT process,
- Corporate and site specific training program procedures,
- Applicable INPO ACAD(s), and
- Applicable NRC requirements (10 CFR 51) and Reg. Guides.

Equipment operator trainees participate in the training program applicable to training operators to perform job duties safely and in accordance with approved procedures. Much of this training is devoted to fundamentals, systems, related procedures, electrical switching (high voltage switching), and other information needed to perform required duties as an equipment operator. Training is accomplished through classroom lectures, plant walkdown(s), and on-the-job training. After completing initial training, trainees enter the retraining (refresher) program. Further, Equipment Operators may enter license operator training to obtain an NRC license.

13.2.6.2 Training program for Nuclear Regulatory Commission License Applicants

The training program for NRC license applicants complies with the requirements of ANSI/ANS 3.1-2014 and implements the training requirements of NUREG-0737. The objective of the program is to thoroughly familiarize Reactor Operator (RO) and Senior Reactor Operator (SRO) applicants with the theory and practices of facility operation. License applicants must meet the prerequisites of NUREG-1021 before entering the program.

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To maintain INPO accreditation Licensed RO and SRO training will comply with:

- SAT process,
- Corporate and site specific training program procedures,
- Applicable INPO ACAD(s), and
- Applicable NRC requirements (10 CFR 55) and Reg. Guides.

Initial license RO and SRO training consists of: classroom training, simulator training, on-the-job training and/or plant walkdown(s). After completing initial training, trainees enter the retraining (refresher) program.

Requalification (refresher) training for licensed ROs, and SROs is conducted at intervals not exceeding 2 years in accordance with 10 CFR 55. The training may consist of: classroom training, simulator training, on-the-job training and/or plant walkdown(s). ROs and SROs may perform control manipulations on the simulator required as part of the training. Training will maintain a certified simulator in accordance with the provisions in 10 CFR 55.

13.2.6.3 Training program for Unit Supervisors (US), Shift Managers (SM), and Shift Technical Advisors (STA)

To maintain INPO accreditation licensed training will comply with:

- SAT process,
- Corporate and site specific training program procedures,
- Applicable INPO ACAD(s), and
- Applicable NRC requirements (10 CFR 55) and Reg. Guides.

The Unit Supervisor and Shift Manager maintain a Senior Reactor Operators license. Applicants for the position are given initial training which follows the guidelines of the training program for NRC license applicants. As a continuation of initial training, retraining is provided in accordance with the Licensed Operator Personnel Requalification Program. If the Unit Supervisor also serves the STA function, then specific training related to accident assessment is provided. The STA training program incorporates Regulatory Guide 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 2. After completing initial training, trainees enter the retraining (refresher) program.

13.2.6.4 Training program for Fire Brigade Training

Fire brigade training will comply with:

- SAT process and
- Corporate and site specific training program procedures.

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A training program for the fire brigade is maintained under the direction of the Operating Department and meets or exceeds the requirements of the National Fire Protection Association (NFPA) Code, except for the fire brigade training sessions which are held at least quarterly. After completing initial training, trainees enter the retraining (refresher) program.

13.2.7 Maintenance Department

13.2.7.1 Training for Mechanical, Electrical and Instrument Maintenance Personnel including Maintenance First Line Supervisors

To maintain INPO accreditation Maintenance training will comply with:

- SAT process,
- Corporate and site specific training program procedures,
- Applicable INPO ACAD(s), and
- Accordance with 10 CFR 50.120.

Training is provided to mechanics within the Instrument, Mechanical, and Electrical Maintenance groups through:

- On-the-job training,
- On-site training,
- Generic training classes,
- Continuing Training Classes, and
- Vendor Training Classes.

These programs combine to develop and promote craft capability. Specific training needs are identified by the maintenance supervisors. On-the-job training is utilized as a fundamental means of instructing Maintenance Department personnel in the performance of their duties. After completing initial training, trainees enter the continuing (refresher) program. Continuing Training is also provided annually, covering selected topics from the initial training plus other pertinent topics. Vendor training classes are conducted either onsite or offsite, as new equipment needs or new job needs arise.

13.2.8 Radiation and Chemistry Departments

13.2.8.1 Training for Radiation Protection and Chemistry Personnel

To maintain INPO accreditation Radiation Protection and Chemistry training programs will comply with:

- SAT process,
- Corporate and site specific training program procedures,
- Applicable INPO ACAD(s), and
- Accordance with 10 CFR 50.120.

After completing initial training, trainees enter the continuing (refresher) program.

13.2.9 Engineering Department

13.2.9.1 Training for Engineering Support Personnel

To maintain INPO accreditation Engineering training program will comply with:

- SAT process,
- corporate and site specific training program procedures,
- applicable INPO ACAD(s), and
- Accordance with 10 CFR 50.120.

After completing initial training, trainees enter the continuing (refresher) program.

13.2.10 Other Departments

13.2.10.1 Training for Fuel Handlers

Fuel Handling training will comply with:

- SAT process and
- Corporate and site specific training program procedures.

Fuel Handler Training ensures that Fuel Handlers are adequately trained in the area of systems, components, and task performances required fulfilling the duties and responsibilities of that position. After completing initial training, trainees enter the continuing (refresher) program.

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13.2.11 Applicable Regulations

The following list of documents was used as the basis for the development of the Byron/Braidwood Stations Training Program:

- a. 10 CFR 50, "Licensing of Production and Utilization Facilities."
- b. 10 CFR 55, "Operators' Licenses."
- c. 10 CFR 19, "Notices, Instructions, and Reports to Workers; Inspections."
- d. 10 CFR 20, "Standards for Protection Against Radiation."
- e. ANSI N18.1-1971, "Selection and Training of Nuclear Power Plant Personnel."
- f. NUREG-0094, Rev. 1 of WASH 1094 - 1976, "A Guide for the Licensing of Facility Operators, including Senior Operators."
- g. ANSI/ANS-3.1-1978, "Standard for Selection and Training of Personnel for Nuclear Power Plants."

13.3 EMERGENCY PLANNING

The Exelon Nuclear Standardized Radiological Emergency Plan (E-Plan) is a written emergency plan that establishes the concepts, evaluation and assessment criteria, and recommended protective actions necessary to limit and mitigate the consequences of potential or actual nuclear power plant emergencies. The E-Plan provides the necessary prearrangements, directions, and organization to ensure nuclear emergencies can be effectively and efficiently resolved in order to safeguard station personnel, property, and the general public.

The E-Plan has been developed based on the emergency planning and preparedness requirements specified in Appendix E to 10 CFR Part 50 and Regulatory Guide 1.101. The E-Plan has been submitted to and approved by the NRC. It is reviewed annually; any changes or revisions that pertain to regulatory requirements are submitted to the NRC for approval.

The E-Plan includes site-specific annexes that contain additional information and guidance that are unique to each nuclear generating facility. The site-specific annexes are not independent of the E-Plan. Each site has emergency plan implementing procedures that implement the E-Plan appropriately.

The E-Plan identifies onsite and offsite facilities and equipment available for emergency assessment, communications, first aid and medical care, and damage control. The emergency response facilities consist of the control room, technical support center, operational support center, emergency operations facility, and joint information center.

The E-Plan provides for classification of emergencies into five categories (listed in order of increasing severity): unusual event, alert, site area emergency, general emergency, and recovery. A description of the five categories is provided below:

a. Unusual Event

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

b. Alert

Events are in progress or have occurred which indicate an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of Environmental Protection Agency (EPA) Protective Action Guideline exposure levels.

c. Site Area Emergency

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or hostile action that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

d. General Emergency

Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

e. Recovery

That period when the emergency phase is over and actions are being taken to return the situation to a normal state (acceptable condition). The plant is under control and no potential for further degradation to the plant or the environment is believed to exist.

The E-Plan includes notification requirements for classified events, including prompt and accurate notifications to federal, state, and local governments.

Training is conducted for all emergency response personnel to ensure their proficiency. The training programs for emergency response personnel are based on the requirements of Appendix E to 10 CFR Part 50.

Evaluated exercises are conducted biennially at each nuclear station 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 E-Plan and station-specific annexes are distributed on a controlled basis to all stations and emergency facilities requiring them, including appropriate federal, state, and local agencies.

13.4 REVIEW AND AUDIT

The review and audit program for the Byron/Braidwood Stations is conducted in accordance with the Quality Assurance Program for Nuclear Generating Stations. This program was submitted to the Nuclear Regulatory Commission in January 1976 as Reference 1. It was accepted by the NRC as a part of the approved Commonwealth Edison Company Quality Assurance Program. The current Quality Assurance Program for the Byron/Braidwood Stations is described in Quality Assurance Topical Report NO-AA-10. |

13.4.1 References

1. Quality Assurance Program Topical Report NO-AA-10. |

13.5 PLANT PROCEDURES

Day-to-day operations of the Byron/Braidwood Stations are governed by procedure manuals within assigned areas of responsibility. These manuals govern employee actions and establish standards for plant operation.

A formalized system of written procedures containing administrative and operating instructions in conformance with Regulatory Guide 1.33 and ANSI N18.7-1976/ANS-3.2, which acknowledges the safety provisions of the facility license and Technical Specifications, is employed to ensure that all normal and reasonably foreseeable abnormal or emergency activities are conducted in a safe manner.

Detailed station procedures (i.e., plant procedures) are prepared by members of the station staff or by persons under their direction.

13.5.1 Administrative Procedures

13.5.1.1 Quality Assurance Requirements for Operation

The Byron/Braidwood plant procedures are written to conform to applicable quality assurance requirements for operation.

13.5.1.2 Preparation of Initial Procedures

The Byron/Braidwood administrative procedures are prepared by members of the station organization or persons under their direction. The responsibility for writing and preparing plant procedures is assigned to the appropriate department heads of the station organization.

Procedures and necessary changes are reviewed and approved in accordance with station procedures.

13.5.1.3 Procedures

The Byron/Braidwood Administrative Procedures identify station organization and responsibilities, control room procedures, operating criteria, requirements for records, a summary of required tests, analyses, and calibrations to be performed, their frequency of performance, and the group responsible for this work.

13.5.1.3.1 Standing Operating Orders

Special Operating Orders are issued to provide a mechanism for dissemination of instructions and information of continuing importance to shift operations. Special Operating Orders may be long term, if desired, and are not to be substituted for either permanent or temporary procedures.

13.5.1.3.2 Daily Operating Orders

Daily Operating Orders are issued to provide a mechanism for dissemination of management instructions which have short-term applicability. Daily Operating Orders are not to be a substitute for either permanent or temporary procedures.

13.5.1.3.3 Equipment Control Procedures

Equipment control procedures are established to provide for the necessary control of equipment to maintain plant equipment and personnel safety and to avoid unauthorized operation of equipment. These instructions utilize the control measure of tagging to secure and identify equipment in a controlled status.

The use of equipment locks is employed in certain circumstances in conjunction with the tagging procedure or in the absence of the tagging procedure to ensure that the safety of plant equipment and personnel is not jeopardized. Verification and control procedures are utilized when equipment locking is necessary.

13.5.1.3.4 Control of Maintenance and Modification

Control of maintenance and modification is provided for in Reference 1.

13.5.1.3.5 Master Surveillance Testing Schedule

A master surveillance testing schedule is prepared which prescribes the surveillance to be performed and the frequency as outlined in the Technical Specifications and the Technical Requirements Manual.

13.5.1.3.6 Procedures for Logbook

Procedures for logbook usage and control are provided to ensure adequate documentation of various unit operations and conditions. Logbooks are maintained in the control area, radwaste control room, and Shift Manager's office. Entry items in these books include unit plant equipment status, malfunction, reactor trips (including the reasons), changes in operating conditions, test and measurements performed, and other significant information noted by the operating crew or the Shift Manager. The Shift Manager normally signs the Shift Manager's log to acknowledge understanding of its contents respecting plant status. Prior to shift changeovers, the oncoming Shift Manager must read the log of the off-going Shift Manager to ensure complete understanding of the plant conditions before assuming shift responsibilities.

13.5.1.3.7 Temporary Procedures

Temporary procedures may be issued to direct specific operator actions during operations testing and maintenance, to provide

guidance in unusual situations not within the scope of the station operating 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.

Temporary procedures require review and approval according to the station review process and must be authorized by the appropriate management representatives prior to implementation.

13.5.2 Operating and Maintenance Procedures

13.5.2.1 General Operating Procedures

The procedures described in this subsection are performed primarily by licensed operators or reflect licensed operator actions in the performance of the procedure.

Operating procedures are arranged categorically and include a descriptive title for each procedure identified within the classification.

13.5.2.1.1 Systems Operating Procedures

The procedures identified in this classification provide step-by-step instructions for energizing buses, filling, venting, draining, startup, shutdowns, and changing modes of operation.

A typical list of these procedures follows:

- a. reactor coolant system;
- b. control rod drive system;
- c. residual heat removal system;
- d. safety injection system;
- e. component cooling water;
- f. containment integrity;
- g. containment spray system;
- h. fuel storage pool purification and cooling system;
- i. main steam system;
- j. pressurizer pressure and level control systems;
- k. feedwater system (feedwater pumps to steam generator);

- l. auxiliary feedwater system;
- m. service water system;
- n. chemical and volume control system (including letdown/purification system);
- o. auxiliary and containment heating and ventilation;
- p. control room heating and ventilation;
- q. radwaste building heating and ventilation;
- r. instrument air system;
- s. electrical system:
 - 1. offsite;
 - 2. onsite;
 - a) emergency power sources (diesel generator, batteries);
 - b) a-c auxiliary system;
 - c) d-c auxiliary system;
- t. nuclear instrument system:
 - 1. source range channels;
 - 2. intermediate range channels;
 - 3. power range channels;
 - 4. incore system;
- u. reactor control and protection system; and
- v. hydrogen recombiner (Byron only).

13.5.2.1.2 General Operating Procedures

The general operating procedures provide instruction for the integrated operation of the plant. They are written in the degree of detail necessary to perform the evolution. Where appropriate, reference is made to detailed system procedures.

Typical procedures included in this category are as follows:

- a. heatup;
- b. startup;

- c. power operations;
- d. normal unit shutdown; and
- e. normal unit cooldown.

13.5.2.1.3 Abnormal Operating Procedures

The Abnormal Operating Procedures provide guidance to the operators when important parameters of systems are in jeopardy, but a reactor trip or safety injection has not been actuated.

The typical procedures included in the general abnormal procedures category are as follows:

- a. loss of coolant (small leaks),
- b. loss of instrument air,
- c. loss of offsite electrical power,
- d. loss of condenser vacuum,
- e. loss of containment integrity,
- f. loss of service water,
- g. loss of component cooling system and cooling to individual components,
- h. loss of feedwater or feedwater system failure,
- i. loss of protective system channel,
- j. mispositioned control rod or rods (and rod drops),
- k. inability to drive control rods,
- l. conditions requiring use of emergency boration,
- m. high activity in reactor coolant,
- n. evacuation of control room,
- o. malfunction of automatic reactivity control system,
- p. malfunction of pressure control system,
- q. acts of nature (e.g., tornado, flood, dam failure, earthquakes), and
- r. irradiated fuel damage while refueling.

For annunciator response procedures, refer to Subsection 13.5.2.1.5.

13.5.2.1.4 Emergency Operating Procedures

Emergency Operating Procedures initiate operator action based upon either a reactor trip or safety injection. They provide for the diagnosis and mitigation of design basis events such as a loss-of-coolant accident (LOCA), steam generator tube rupture (SGTR), or loss of secondary coolant (LOSC).

13.5.2.1.5 Annunciator Response Procedures

Due to the large number of annunciator response procedures, the descriptive titles are not listed. Annunciators in control areas are identified by an alphanumeric designation on the control panel which coincides with the alphanumeric designation of the annunciator response procedure in the appropriate procedure manual. Those conditions which require immediate operator action are identified in the emergency operating procedures.

13.5.2.1.6 Temporary Procedures

Temporary procedures are described in Subsection 13.5.1.3.7.

13.5.2.2 Other Procedures

This subsection describes how other operating and maintenance procedures are classified and what group within the operating organization has the responsibility for following each class of procedures and outlining the general objectives and character of each class.

13.5.2.2.1 Plant Radiation Protection Procedures

These procedures are described in Chapter 12.0.

13.5.2.2.2 Emergency Preparedness Procedures

These procedures are described in Section 13.3.

13.5.2.2.3 Instrument Calibration and Test Procedures

The instrumentation procedures section governs operation at checkout and calibration of instrumentation. These procedures apply to nuclear, process, area radiation monitoring, and reactor protection instrumentation. Checkoff lists are provided and completed for the more complex operations. The instrument maintenance department prepares these procedures.

13.5.2.2.4 Chemical/Radiochemical Control Procedures

The chemical control procedures section states the operating limits of ranges for chemical and radiochemical control and prescribes the personnel to be notified if these limits are approached.

The chemistry technicians are provided with a schedule which describes the types of analysis to be performed and the frequency at which samples are taken. Step-by-step procedures are provided. In addition, a copy of these procedures is kept in the radiochemical laboratory for ready reference. Other copies are available in the chemistry supervisor's office.

The chemistry department prepares the procedures described in this section.

13.5.2.2.5 Radioactive Waste Management Procedures

The radioactive waste management procedures prescribe the methods and modes of operation employed to collect, treat, store, and dispose of liquid and solid radioactive waste materials resulting from plant operations. The operations department prepares the procedures described in this section.

13.5.2.2.6 Maintenance Procedures

The maintenance procedures prescribe the technique, tools, and equipment used to perform inspection, repair, and overhaul of unit equipment. The maintenance department prepares the procedures in this category.

13.5.2.2.7 Materials Control Procedures

Materials control requirements and procedures are identified in Section 8.0 of the Exelon Nuclear Quality Assurance Manual. |

13.5.2.2.8 Plant Security Procedures

The plant security procedures are acknowledged in Section 13.6. A separate set of station security procedures has been written to implement the Byron/Braidwood Master Security Plan.

13.5.2.2.9 Surveillance Procedures

The surveillance procedures prescribe the frequency at which major components and systems are inspected and tested. This includes unit equipment which is not included in the Technical Specifications.

It is the responsibility of the appropriate department requiring surveillance items to prepare surveillance procedures.

13.5.3 References

1. Quality Assurance Program Topical Report NO-AA-10. |

13.6 PHYSICAL SECURITY

Byron and Braidwood Stations implement and maintain in effect all provisions of the NRC-approved physical security, guard training and qualification, and safeguards contingency plans for Byron and Braidwood Stations in accordance with the operating licenses. The plans are specified in the following documents, as revised and filed with the NRC:

- A. Byron Station Security Plan
- B. Braidwood Station Security Plan
- C. Byron Security Personnel Training and Qualification Plan
- D. Braidwood Station Security Personnel Training and Qualification Plan
- E. Byron Safeguards Contingency Plan
- F. Braidwood Station Safeguards Contingency Plan

These plans meet the requirements of 10 CFR 73.55, NRC Regulatory Guide 1.17, Appendices B and C to 10 CFR 73 and ANSI N18.17,- 1973.

Procedures to implement the Byron and Braidwood Stations Security Plans are 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 are Security Manager written and remain under the cognizance of the Manager, Nuclear Security and the procedures that contain Safeguards Information shall be a withheld from public disclosure.

The security plan documents Safeguards Information protected under 10 CFR 73.21 and are, therefore, withheld from public disclosure.