

U.S. NUCLEAR REGULATORY
COMMISSION
DOCKET 50-410
LICENSE NPF-69

NINE MILE POINT
NUCLEAR STATION
UNIT 2

UPDATED SAFETY
ANALYSIS REPORT

OCTOBER 2016

REVISION 22

NMP Unit 2 USAR

CHAPTER 13

LIST OF EFFECTIVE FIGURES

<u>Figure No.</u>	<u>Revision Number</u>
F 13.1-1	(Deleted)
F 13.1-2	(Deleted)
F 13.1-3	(Deleted)
F 13.1-4	(Deleted)
F 13.1-4a	(Deleted)
F 13.1-4b	(Deleted)
F 13.1-4c	(Deleted)
F 13.4-1	(Deleted)
F 13.5-1	R16

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>
13.1	ORGANIZATIONAL STRUCTURE OF APPLICANT
13.1.1	Management and Technical Support Organization
13.1.1.1	Design and Operating Responsibilities
13.1.1.1.1	Design and Construction Activities
13.1.1.1.2	Offsite Organization
13.1.1.2	Organizational Arrangement
13.1.1.2.1	Station Organization
13.1.1.2.2	This Section Deleted
13.1.1.2.3	This Section Deleted
13.1.1.3	This Section Deleted
13.1.2	Nine Mile Point Nuclear Station, LLC, Organization
13.1.2.1	This Section Deleted
13.1.2.1.1	This Section Deleted
13.1.2.2	This Section Deleted
13.1.2.3	This Section Deleted
13.1.2.4	This Section Deleted
13.1.2.5	Operating Shift Crews
13.1.3	Qualifications of Plant Personnel
13.2	TRAINING
13.2.1	Unit 2 Station Staff Training Program
13.2.1.1	This Section Deleted
13.2.1.2	This Section Deleted
13.2.1.3	Training Program Description
13.2.1.4	This Section Deleted
13.2.1.5	This Section Deleted
13.2.1.6	This Section Deleted
13.2.1.7	This Section Deleted
13.2.1.8	This Section Deleted
13.2.2	This Section Deleted
13.2.2.1	This Section Deleted
13.2.2.1.1	This Section Deleted
13.2.2.1.2	This Section Deleted
13.2.2.1.3	This Section Deleted
13.2.2.1.4	This Section Deleted
13.2.2.1.5	This Section Deleted
13.2.3	This Section Deleted
13.2.4	This Section Deleted
13.2.5	This Section Deleted
13.2.5.1	This Section Deleted
13.2.5.1.1	This Section Deleted
13.2.5.1.2	This Section Deleted
13.2.5.1.3	This Section Deleted

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>
13.2.6	This Section Deleted
13.2.6.1	This Section Deleted
13.2.6.2	This Section Deleted
13.2.6.2.1	This Section Deleted
13.2.6.2.2	This Section Deleted
13.2.6.3	This Section Deleted
13.2.6.3.1	This Section Deleted
13.2.6.4	This Section Deleted
13.2.7	This Section Deleted
13.2.8	This Section Deleted
13.2.8.1	This Section Deleted
13.2.8.1.1	This Section Deleted
13.2.8.1.2	This Section Deleted
13.2.8.2	This Section Deleted
13.2.8.3	This Section Deleted
13.2.8.4	This Section Deleted
13.2.8.5	This Section Deleted
13.2.8.6	This Section Deleted
13.2.9	This Section Deleted
13.2.9.1	This Section Deleted
13.2.9.1.1	This Section Deleted
13.2.9.1.2	This Section Deleted
13.2.9.1.3	This Section Deleted
13.2.9.1.4	This Section Deleted
13.2.9.1.5	This Section Deleted
13.2.9.1.6	This Section Deleted
13.2.9.2	This Section Deleted
13.2.9.3	This Section Deleted
13.2.9A	This Section Deleted
13.2.9A.1	This Section Deleted
13.2.9A.1.1	This Section Deleted
13.2.9A.1.2	This Section Deleted
13.2.9A.1.3	This Section Deleted
13.2.9A.1.4	This Section Deleted
13.2.9A.1.5	This Section Deleted
13.2.9A.1.6	This Section Deleted
13.2.9A.2	This Section Deleted
13.2.9A.3	This Section Deleted
13.2.10	This Section Deleted
13.2.10.1	This Section Deleted
13.2.10.1.1	This Section Deleted
13.2.10.1.2	This Section Deleted
13.2.10.1.3	This Section Deleted

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>
13.2.10.2	This Section Deleted
13.2.11	This Section Deleted
13.2.11.1	This Section Deleted
13.2.11.1.1	This Section Deleted
13.2.11.1.2	This Section Deleted
13.2.11.1.3	This Section Deleted
13.2.11.2	This Section Deleted
13.2.12	Fire Brigade Training
13.2.12.1	This Section Deleted
13.2.12.2	This Section Deleted
13.2.12.3	This Section Deleted
13.2.12.4	This Section Deleted
13.2.12.5	This Section Deleted
13.2.13	This Section Deleted
13.2.13.1	This Section Deleted
13.2.13.2	This Section Deleted
13.2.13.3	This Section Deleted
13.2.13.4	This Section Deleted
13.2.13.5	This Section Deleted
13.2.14	This Section Deleted
13.2.15	Applicable NRC Regulations
13.3	SITE EMERGENCY PLAN
13.4	OPERATION REVIEW AND AUDIT
13.4.1	Administrative Controls
13.4.2	This Section Deleted
13.4.2.1	This Section Deleted
13.4.2.1.1	This Section Deleted
13.4.2.2	This Section Deleted
13.4.3	This Section Deleted
13.4.4	This Section Deleted
13.4.4.1	This Section Deleted
13.4.4.2	This Section Deleted
13.4.4.3	This Section Deleted
13.4.4.4	This Section Deleted
13.5	PLANT PROCEDURES
13.5.1	This Section Deleted
13.5.1.1	This Section Deleted
13.5.1.2	This Section Deleted
13.5.1.3	This Section Deleted
13.5.1.3.1	This Section Deleted

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	
13.5.1.3.2	This Section Deleted	
13.5.1.3.3	This Section Deleted	
13.5.1.3.4	This Section Deleted	
13.5.1.3.4.1	This Section Deleted	
13.5.1.3.5	This Section Deleted	
13.5.1.3.6	This Section Deleted	
13.5.1.3.7	This Section Deleted	
13.5.2	This Section Deleted	
13.5.2.1	This Section Deleted	
13.5.2.1.1	General Plant and System Operating Procedures	
13.5.2.1.2	Emergency Operating Procedures	
13.5.2.1.3	This Section Deleted	
13.5.2.1.4	This Section Deleted	
13.5.2.2	This Section Deleted	
13.5.2.2.1	This Section Deleted	
13.5.2.2.2	This Section Deleted	
13.5.2.2.3	This Section Deleted	
13.5.2.2.4	This Section Deleted	
13.5.2.2.5	This Section Deleted	
13.5.2.2.6	This Section Deleted	
13.5.2.2.7	This Section Deleted	
13.5.2.2.8	This Section Deleted	
13.5.2.2.9	This Section Deleted	
13.5.2.2.10	This Section Deleted	
13.6	SECURITY	
CHAPTER 13		
APPENDIX 13A	RESUMES	13A-1
APPENDIX 13B	SITE EMERGENCY PLAN	13B-1

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

LIST OF TABLES

<u>Table Number</u>	<u>Title</u>	
13.1-1	REACTOR OPERATING MODES	
13.1-2	This Table Deleted	
13.2-1	This Table Deleted	
13.4-1	This Table Deleted	
13.4-2	This Table Deleted	
13.4-3	This Table Deleted	
13.5-1	This Table Deleted	
13.5-2	This Table Deleted	
13.5-3	This Table Deleted	
13.5-4	This Table Deleted	
13.5-5	This Table Deleted	
13.5-6	This Table Deleted	
13.5-7	This Table Deleted	

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

LIST OF FIGURES

<u>Figure Number</u>	<u>Title</u>	
13.1-1	This Figure Deleted	
13.1-2	This Figure Deleted	
13.1-3	This Figure Deleted	
13.1-4	This Figure Deleted	
13.1-4a	This Figure Deleted	
13.1-4b	This Figure Deleted	
13.1-4c	This Figure Deleted	
13.4-1	This Figure Deleted	
13.5-1	"AT THE CONTROLS" MAIN CONTROL ROOM EL 306'-0"	

NMP Unit 2 USAR

CHAPTER 13

CONDUCT OF OPERATIONS

13.1 ORGANIZATIONAL STRUCTURE OF APPLICANT

Exelon Generation Company, LLC, is a limited liability company and is responsible for the safe, reliable, and efficient operation of its nuclear facilities. In addition, Exelon is responsible for appropriate standards, programs, processes, management controls, and support for the nuclear facilities. In keeping with these responsibilities, Exelon is committed to providing sufficient personnel having appropriate qualifications to both operate and technically support the facility. The organizational structure, including functions and responsibilities, are described in the Quality Assurance Topical Report (QATR), NO-AA-10, as revised. Excessive detail previously contained in Chapter 13 has been removed to improve the use of the USAR and to incorporate the QATR by reference.

13.1.1 Management and Technical Support Organization

13.1.1.1 Design and Operating Responsibilities

13.1.1.1.1 Design and Construction Activities

1. Principal site-related work, such as meteorology, seismology, hydrology, demography, and environmental effects, has been completed and is described in Chapter 2. Post-operational environmental evaluations are described in the Environmental Report-Operating License Stage (ER-OLS).
2. The design of the Unit 2 plant and auxiliary systems is described in Chapters 3 and 9.
3. The review and approval of plant design features were completed as an integral part of the design review process.
4. Site layout with respect to environmental effects is described in Chapter 2. Section 13.6 discusses the security plan with respect to site layout.
5. Most of the Final Safety Analysis Report (FSAR) was prepared through the combined efforts of Niagara Mohawk Power Corporation (NMPC), General Electric Company (GE), and Stone & Webster Engineering Corporation (SWEC). Some portions were prepared by Dames and Moore; Lawler, Matusky, and Skelly; and Meteorological Evaluation Services.

NMP Unit 2 USAR

6. Management control and review of construction activities are currently and have been exercised routinely during construction of the plant.

13.1.1.1.2 Offsite Organization

The Exelon corporate organization and its functions and responsibilities are described in Chapter 1 of the Quality Assurance Topical Report, NO-AA-10, as revised.

13.1.1.2 Organizational Arrangement

13.1.1.2.1 Station Organization

The Station organization is as described in NO-AA-10. Refer to the Quality Assurance Topical Report, NO-AA-10, as revised for the qualifications of essential managerial positions and to the applicable Human Resources procedures for comparable ANSI/ANS 3.1-1978 positions for individuals responsible for programs and systems that ensure the safe and successful operation of the facility. Changes to these documents are evaluated in accordance with the applicable change control process.

13.1.2 Nine Mile Point Nuclear Station, LLC, Organization

This section describes the structure, function, and responsibilities of the onsite organizations established to operate and maintain the plant. The onsite and offsite independent review committees are described in NO-AA-10. Unit 1 and Unit 2 operations are independent of each other, including backshift operation. Only licensed individuals may direct licensed activities.

The lines of authority are described in administrative procedures.

13.1.2.5 Operating Shift Crews

The Operations Department is under the direction of the Director - Operations who reports to the Plant Manager. The Director - Operations has the following direct reports: the Unit Shift Operation Superintendent, the Reactor Engineering Manager, and the Senior Manager Operations Support and Services. The Unit Shift Operations Superintendent is directly responsible for supervision of plant operations including management oversight of shift operations. The Unit Shift Managers report directly to the Unit Shift Operations Superintendent. The Director - Operations, Unit Shift Operations Superintendents, Senior Manager Operations Support and Services, Operations Support Manager, or Operation Services Manager must possess a Senior Reactor Operator (SRO) license. Table 13.1-1 shows the position titles, applicable operator licensing requirements, and minimum numbers of personnel planned for each shift for the various reactor operating modes.

NMP Unit 2 USAR

Unique requirements for additional personnel for the refueling modes are also listed in Table 13.1-1. The following additional requirements apply:

1. In MODES 1, 2 and 3, at least one Licensed Senior Reactor Operator or Licensed Reactor Operator shall be at the controls of the unit.
2. A Licensed Senior Reactor Operator or Licensed Senior Reactor Operator Limited to Fuel Handling shall be responsible for all movement of new and irradiated fuel within the site boundary.

Round-the-clock chemistry and radiation protection coverage is met by qualified Technicians. Technicians are qualified in accordance with the requirements of ANSI/ANS-3.1-1978 as outlined in administrative procedures. Round-the-clock Fire Brigade coverage is provided by shift Fire Brigades. Fire Brigades are qualified in accordance with 10CFR50 Appendix R as described in training procedures. There are five operating shift crews.

13.1.3 Qualifications of Plant Personnel

Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI/ANS-3.1-1978 and Regulatory Guide (RG) 1.8.

Qualifications of replacement personnel shall meet the requirements established in Section 5.3.1 of the Technical Specifications.

NMP Unit 2 USAR

TABLE 13.1-1
(Sheet 1 of 1)

REACTOR OPERATING MODES

(Number of Personnel Required)

Position Title	Licensee Requirements	Normal Operation	Startup	Refuel ⁽¹⁾	Shutdown	Operation Without Process Computer ⁽²⁾
SM	SRO	1	1	1	1	1
US/FS ⁽³⁾	SRO	1	1	-	1 ⁽⁵⁾	1
Licensed Reactor Operators (Reactor Operators)	RO	2	3	1	2/1 ⁽⁶⁾	2
Plant Operators		2	2	1	2/1 ⁽⁶⁾	2/3
Fire Brigade	-	5	5	5	5	5
Radiation Protection Technician	-	1	1	1	1	1
Chemistry Technician		1	1	1	-	1
Shift Technical Advisor		1	1	-	1 ⁽⁵⁾	1

⁽¹⁾ A SRO who has no other concurrent responsibilities will supervise all core alterations.

⁽²⁾ Two Plant Operators are required up to 8 hr without the process computer; three Plant Operators are required after 8 hr without the process computer.

⁽³⁾ May be other qualified staff position.

⁽⁴⁾ Deleted.

⁽⁵⁾ The Unit Supervisor (US) or Field Supervisor (FS), if qualified, may function in the dual role US/STA or FS/STA position when the Emergency Plan is activated during normal operation, startup, or hot shutdown conditions. During a cold shutdown condition, neither a US/FS nor a STA is required.

⁽⁶⁾ Two Operators required during hot shutdown.

NMP Unit 2 USAR

13.2 TRAINING

13.2.1 Unit 2 Station Staff Training Program

The training program includes development and conduct of technician, operator, and support programs. Additional training and educational programs are presented as needed. Training programs are prepared to include formal objectives and written lesson plans. During development of programs, close liaison is maintained with appropriate line managers to ensure that content, test material, mode of presentation, and schedule are appropriate. As additional training needs are identified, new training programs or lessons are developed to meet requirements not covered by existing programs. Program responsibilities are described in NO-AA-10.

13.2.1.3 Training Program Description

The overall training program was developed consistent with Institute of Nuclear Power Operations (INPO) accreditation objectives and criteria.

The Training System Development (TSD) process developed by INPO and its members is a systematic approach for establishing and maintaining a performance-based training program.

The process of maintaining an INPO-accredited training program is controlled internally through the use of training procedures.

13.2.12 Fire Brigade Training

The Fire Brigade training program meets or exceeds the requirements of Appendix R to 10CFR50 (by implementing Standard Review Plan BTP CMEB 9.5-1, Section C.3).

13.2.15 Applicable NRC Regulations

The following NRC documents are applicable to training:

10CFR50	Licensing of Production and Utilization Facilities
10CFR50	Appendix R, Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979
10CFR55	Operator License
10CFR55.59	Requalification Program for Licensed Operators

NMP Unit 2 USAR

10CFR55.57 Renewal of Licenses, Technical
 Specifications, 6.4.1

RG 1.8 Personnel Selection and Training

NMP Unit 2 USAR

13.3 SITE EMERGENCY PLAN

The prime objectives of emergency planning are to: (1) Develop a plan and implementing procedures that will provide the means for mitigating the consequences of emergencies (including very low probability events) in order to protect the health and safety of the general public and site personnel and to prevent damage to property, and (2) Ensure operational readiness of emergency preparedness capabilities.

The Nine Mile Point Nuclear Station Emergency Plan assures that all emergency situations, including those which involve radiation or radioactive material are handled logically and efficiently. It covers the entire spectrum of emergencies from minor, localized emergencies to major emergencies involving action by offsite emergency response agencies and organizations. The Emergency Plan Implementing Document provides a single source of pertinent and significant information and data and the procedures that would be required by or useful for various emergency response agencies and organizations in the event of an emergency.

The Implementing document consolidates and integrates specific material detailed in documents such as the Nine Mile Point Nuclear Station Emergency Plan, the State Plans, and the Various County Plans.

This Emergency Plan has been developed in accordance with the provisions of 10CFR50, Appendix E, and 10CFR50.47. Other guidance and sources of information used in the development of the Emergency Plan have been identified in the Exelon Nuclear Standardized Radiological Emergency Plan Annex for Nine Mile Point.

The Site Emergency Plan and Implementing Procedures have been submitted to the NRC under separate cover. Changes to the Site Emergency Plan are made in accordance with the requirements of 10CFR50.54(q).

NMP Unit 2 USAR

13.4 OPERATION REVIEW AND AUDIT

13.4.1 Administrative Controls

The functions, composition and responsibilities of those organizations responsible for performing the nuclear safety review and audit of Nine Mile Point Nuclear Station are delineated in the Quality Assurance Topical Report, NO-AA-10, as revised.

NMP Unit 2 USAR

13.5 PLANT PROCEDURES

Unit 2 day-to-day operations are governed by procedures within assigned areas of responsibility that govern employees' actions and establish standards for plant operation. Requirements for procedure preparation, review and control are described in the Quality Assurance Topical Report, NO-AA-10, as revised.

A formal system of written procedures containing administrative and operating instructions in conformance with Section 5.3 of ANSI/ANS-3.2-1982, and acknowledging safety provisions of the facility license and Technical Specifications, is used to ensure that all normal and reasonably foreseeable abnormal or emergency activities are conducted in a safe manner.

Administrative procedures are written to conform to applicable federal guidelines, including RG 1.33, Revision 2. Administrative procedures are issued to delineate authority and responsibility of shift supervision and crews and includes the designated area for the "at the controls" area of the control room (Figure 13.5-1).

13.5.2.1.1 General Plant and System Operating Procedures

General plant and system operating procedures are developed for Unit 2. They are in three categories: operating procedures, special operating procedures and fuel handling procedures. Fuel handling procedures deal specifically with refueling, core alterations, and refueling equipment operation (RG 1.33, Revision 2, February 1978, Appendix A, Sections 2.k and 2.l, and ANSI/ANS-3.2-1982, Appendix, Sections A5.k and A5.l).

Special operating procedures cover off-normal situations not meeting the requirement for inclusion in an EOP. These procedures are written in an event-based format using the guidance of Section 5.3.9 of ANSI/ANS-3.2-1982. These procedures cover the scope of events identified in Appendix A of RG 1.33, Revision 2, except for a few events which are more appropriately covered by EOPs or other procedures.

13.5.2.1.2 Emergency Operating Procedures

EOPs were developed based on GE BWR Owners' Group Emergency Procedure Guidelines (BWROG EPG)/Severe Accident Guidelines (SAG), Revision 4. Later revisions to the BWROG EPG will be considered as required.

13.6 SECURITY

A detailed Nine Mile Point Nuclear Station Physical Security, Safeguards Contingency, and Security Training and Qualification Plan, identified as Safeguards Information and withheld from public disclosure in accordance with 10CFR73.21, has been submitted to the NRC.

The security plan described above details the measures taken to provide adequate site and Station security and conforms to 10CFR73.55. Changes to the security plan are made in accordance with the requirements of 10CFR50.54(p) or 10CFR50.90, as applicable.