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MANGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards responses to listed SER open items.Info will be included in next FSAR amend.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

August 24, 1984
(NMP2L 0142)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Nine Mile Point Unit 2
Docket No. 50-410

Dear Mr. Schwencer:

Enclosed for your use and information are the Nine Mile Point Unit 2 responses to the Nuclear Regulatory Commission's Safety Evaluation Report open items. This information has been previously discussed with your staff and is submitted to aid your review of the Unit 2 license application for the resolution of these open items. This information includes Safety Evaluation Report open items 19, 51-3, 56, 58, 89, 104, 105, 123, 124, 125, 129, 130, 154, 155, 157, 158, 159, 160, 161, 167, 170, 171, 172, 173, 175 and 186.

The enclosed will be included in the next Final Safety Analysis Report Amendment.

Very truly yours,

cvmangan

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

NLR:ja
Enclosure
xc: Project File (2)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
Niagara Mohawk Power Corporation	)	Docket No. 50-410
(Nine Mile Point Unit 2)	)	

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C V Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 24th day of August 1984.

Frances A. VanAuken
Notary Public in and for
Onondaga County, New York

My Commission expires:

March 30, 1986

FRANCES A. VAN AUKEN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4522187
My Commission Expires March 30, 19__

modes is presented in Tables 3.5-15 and 3.5-16. It can be observed that the overall probability of damage by turbine missiles is 1.803×10^{-7}/yr for Unit 2 if the probability of turbine failure rate of 1.0×10^{-4}/yr recommended by the NRC is used. These results are within the acceptance value of 10^{-6}/yr as outlined in Standard Review Plan 2.2.3, but are slightly higher than the acceptable criteria specified in Regulatory Guide 1.115. These calculated figures are conservative. Therefore, overall probability for unacceptable damage by turbine missiles for Unit 2, when estimated on a more realistic basis, is much lower, and is considered acceptable. A Turbine System Maintenance Program based on the Manufacturer's (GE) recommendations and calculations of missile generation probabilities will be developed within 3 years of obtaining an operating license.

3.5.1.3.4 Turbine Overspeed Protection

Design Bases

Safety Design Basis The turbine-generator overspeed protection controls are not required to effect or support the safe shutdown of the reactor or to perform in the operation of reactor safety features.

Power Generation Design Basis The turbine generator controls are designed to prevent overspeed that may result from a turbine generator trip or a large reduction in load. The mechanical overspeed trip is set at about 110 percent of rated turbine speed. The electrical or backup overspeed trip is set at about 112 percent of rated turbine speed. These set points will prevent the rotor from exceeding the maximum transient speed of 120 percent (design overspeed) of rated turbine speed.

Description

Turbine speed is normally controlled by an electrohydraulic control (EHC) system. The speed control unit of the EHC system (Figure 3.5-1) produces a speed/acceleration error signal that is determined by comparing the desired speed with the actual turbine speed at steady-state conditions, or the desired acceleration with the actual acceleration during startup. When the speed reference signal is increased in a step, the acceleration control will take over and accelerate the turbine at the selected rate up to the new speed reference, at which point the speed control will automatically take control. Upon decrease of the speed reference, the turbine will coast down with the valves closed. The valves will reopen only when the new set speed has been reached. There is no deceleration limit. During normal operation at rated speed, the speed error signal is essentially zero, regardless of the load.

SER NO. 51(3)

In the staff's review of the HPCS diesel generator, it is not clear that the check valve upstream of the air receiver tank is qualified against well established leakage criteria following a seismic event. The applicant should amend the FSAR to clarify how sufficient air capacity is assured to start the HPCS diesel generator immediately after a seismic event.

RESPONSE

This response has been incorporated into revised section 9.5.6.2.2

special fittings are designed, manufactured, and inspected in accordance with the guidelines and requirements of ANSI Standard B31.1, ASME Section VIII, or DEMA standards. These engine- skid-mounted starting air piping and associated components are over-designed (subjected to low working stresses) for the application, which results in high operational reliability. The design of the engine mounted starting air piping and components to the cited design philosophy and standards is considered equivalent to a system designed to ASME Section III, Class 3 requirements with regard to system functional operability and inservice reliability:

Sufficient air capacity to start the HPCS diesel generator immediately following a seismic event is assured by qualification of all piping and all components, including the check valve upstream of the air receiver tank, to Seismic Category I requirements. The air receiver tanks are charged to provide the necessary air for starting the engine. When the air tank pressure drops below a preset valve, the air compressors operate to recharge their respective tank to the fully charged condition.

No Division III diesel generator (DG) control functions are supplied by the air starting system or any other air system to control emergency trip functions and/or diesel generator operation, except engine cranking.

9.5.6.3 Instrumentation and Control

Instruments and controls are provided for automatic and manual control of each standby diesel generator starting system. The controls for each starting system are located in the associated diesel generator control room. The monitors described below are located in the main control room. The control logic is shown on Figure 9.5-41.

Operation

Each diesel generator air compressor is started automatically when the associated air receiver pressure is low and stops automatically when the air pressure is normal. Each air compressor can be controlled manually.

Monitoring

Alarms are provided in the main control room for each standby diesel generator starting system inoperable and each standby diesel generator starting system trouble.

9.5.6.4 Testing and Inspection

The standby diesel generator starting system is designed to permit periodic inspection and testing of the components and systems. Starting system capability is tested during preoperational testing of the diesel generator. Filters and strainers are checked for cleanliness during routine inspection and testing. Blowdown valves are opened periodically to blow moisture out of the air receivers. Continued integrity of the starting system is assured

QUESTION F271.10

Identify if there are any safety-related deep draft pumps in the plant.

RESPONSE

The only safety-related deep draft pumps utilized in the Unit 2 design are three residual heat removal pumps, one low pressure core spray pump, and one high pressure core spray pump.

NRC letter dated December 8, 1983 requested additional information on methods used to qualify long-term operability of deep draft pumps.

The following is a description of the method used:

1. Operability Methods

Long-term operability has been considered in the emergency core cooling system (ECCS) pump design. The ECCS pumps' effectiveness is evaluated by acceptance, qualification, and in-plant testing. Operability is assured by functional and surveillance tests, preventive maintenance, and vibration monitoring as described below.

a. Functional Testing and Surveillance

Each deep draft pump is scheduled to be functionally tested in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, which currently requires testing at least once each 31 calendar days. Pump inlet pressure, differential pressure, flow rate, motor vibration, and motor bearing temperature measurements will be taken. Engineering analyses are performed to identify changes or pump performance trends that may be indicative of off-normal operating conditions. Functional testing and surveillance requirements are specified in NMP2 Technical Specifications, surveillance procedures, and inservice inspection (ISI) programs.

b. Preventive Maintenance Program

Preventive maintenance and surveillance testing are scheduled at periodic intervals.

Scheduled preventive maintenance consists of obtaining megger (resistance) readings of the motor windings, lubricating critical rotating components, plus general cleaning and inspection of rotating electrical equipment at periodic intervals specified in preventive maintenance procedures. Inspection, overhaul, alignment, and impeller lift adjustments will be scheduled as the ISI program test results indicate.

c. Vibration Monitoring Program

As part of the NMP2 plant ISI programs, vibration measurements will be taken in accordance with Section XI of the ASME Boiler and Pressure Vessel Code, which currently requires monitoring every 31 days. In addition, vibration data bases will be established during the preoperational/startup testing phase and will be used for comparison purposes during later surveillance testing. Journal bearing wear and shaft whip can be deduced from motor vibration increases. The data will be evaluated on a scheduled basis to predict potential bearing and journal failures and establish replacement schedules. Data will be available onsite for inspection.

Vibration should be limited to .3 in/sec velocity peak-to-peak over all measured frequencies as measured by an IRD 360 or equivalent equipment, when the motor and pump are operated as a unit, over the normal design range of pressure and flow. This limit is based on normal operation. Higher momentary increases may be acceptable during starting or at shut off. This limit is not based on what the equipment can withstand. The equipment damage threshold is higher: close to .020 inch, momentary and not sustained. Any sustained vibration over .3 in/sec may cause excessive bearing wear.

2. Background

a. ECCS Pump Design

The ECCS pumps used at NMP2 are manufactured by Byron Jackson (BJ) Pumps. Each ECCS pump is supplied with a casing or suction barrel. These pumps are not installed in a wet sump.

These deep draft pumps, due to their relative shortness, demonstrate fewer of the problems associated with longer pumps. The longest ECCS pump in service at the NMP2 plant is 24 ft long. The rigidity of the pump assembly is enhanced by the use of seismic rings between the pump assembly and the barrel.

The hydraulic design has been developed over the last 40 years of experience in many applications. The pumps use a double suction first stage to provide stability over a wide

range of flows. Column frequencies are well removed from the pump speed.

The barrels are relatively large in diameter, thereby providing low velocities around the pump inlets. The suction barrels include seismic restraints (spoke configuration) which act as flow straighteners to suppress vortex formation. All pumps are provided with high precision, keyed sleeve-type couplings.

The ECCS pumps contain design features to preclude failure of the impellers, impeller staking, shafts, bearings, wear rings, couplings, and stuffing boxes. The design includes safety factors (loading criteria) based on the expected pressures, temperatures, and loadings defined in the design specification. Lateral restraints are included in the pump to control deflections. Tolerances assuring alignment of the shaft and pumping elements are verified by design calculations. Motor shaft deflections within tolerance are predicted in a static seismic analysis and are verified by a qualification test of a similar motor. A dynamic analysis of the pump and motor is performed to determine resonances and predict loadings throughout the pump and motor.

b. ECCS Pump Testing

Tests are performed on each pump delivered. The tests include head versus flow, NPSH, and vibration monitoring. The assembled pumps are checked for porper assembly and low friction by hand turning (rotating) the shaft. Each pump is run for a total of 100 hours during testing. A qualification test of a similar pump motor was performed. This data provides qualification of the NMP2 pumps motors by a similarity analysis.

4.2 FUEL SYSTEM DESIGN

The fuel system design for Unit 2 is identical to that reviewed and approved for GESSAR II (Reference 1). Methods and criteria used to evaluate fuel system performance are also identical to those used for GESSAR II. The results of the NRC review of Section 4.2 of GESSAR II documented in References 2 and 3 are therefore applicable to Unit 2.

The Nine Mile Point Unit 2 post irradiation fuel surveillance program for GE designed and manufactured fuel assemblies is the program proposed by GE (References 4 through 8). This program has been previously approved as satisfying SRP Section 4.2.II.D.3

4.2.1 References

1. General Electric Standard Safety Analysis Report, Docket No. 50-447.

2. Safety Evaluation Report Related to the Final Design Approval of the GESSAR II BWR/6 Nuclear Island Design, NUREG-0979, April 1983.

3. Safety Evaluation Report Related to the Final Design Approval of the GESSAR II BWR/6 Nuclear Island Design, NUREG-0979 (Supplement No. 1), July 1983.

(4) J. S. Charnley (GE) to C. H. Berlinger, (NRC), "Post-Irradiation Fuel Surveillance Program", November 23, 1983.

(5) L. S. Rubenstein (NRC) to R. L. Gridley (GE), "Post-Irradiation Fuel Surveillance", January 18, 1984.

(6) J. S. Charnley (GE) to L. S. Rubenstein (NRC), "Fuel Surveillance Program", February 29, 1984.

(7) J. S. Charnley (GE) to L. S. Rubenstein (NRC), "Additional Details Regarding Fuel Surveillance Program", May 25, 1984.

(8) L. S. Rubenstein (NRC) to R. L. Gridley (GE), "Acceptance of GE Proposed Fuel Surveillance Program," June 27, 1984.

9A.3.2 Administrative Procedures and Controls

ADMINISTRATIVE CONTROLS

Procedures similiar to those presently in effect at Nine Mile Unit #1 are being developed for Unit II and will comply with BTP CMEB 9.5-1, Section C.2 Items A through O. These procedures will be under the control of the supervisor fire protection nuclear and co-approval by the required supervisors. The administrative controls for fire protection consist of the fire protection organization, the fires brigade training, the controls over combustibles and ignition source, the prefire plans and procedures for fighting fires, surveillance and maintenance of fire protection features, and quality assurance.

9A.3.3 Fire Brigade

A fire brigade of five members has been established at Unit 2. A Nuclear Fire Chief and four nuclear fire fighters are assigned rotating shifts with fire, rescue, and first aid responsibilities. In addition, these people perform instructions and tests on the fire systems and equipment as required. All members shall have knowledge in safety related systems, as this is a required module in the fire brigade training programs. The ability to pass an annual physical examination and agility test is required for employment in the fire department. Brigade members report directly to the Supervisor of Fire Protection-Nuclear or his assistant.

Personal protective equipment such as turnout coats, boots, gloves, and helmets are provided for brigade members. In addition approved self-contained breathing apparatus is provided. Complete sets of equipment are stored in a minimum of ten locations throughout the plant.

An approved breathing air-compressor is presently in use for SCBA bottle refilling, in addition a bottle cascade system is available.

Fire brigade members will be trained as outlined in APN-10P (Nuclear Fire Fighter and Nuclear Fire Chief Training). This training program is intended to ensure that the Brigade Leader and at least two members shall have sufficient training and a knowledge of plant safety-related systems to understand the effects of fire and fire suppression on safe shutdown capability.

Technical training for nuclear fire fighters and nuclear fire chiefs shall consist of classroom sessions and in-plant inspections showing site specifics covering the subjects as outlined in APN-10P.

Station practical training for nuclear fire fighters and nuclear fire chiefs shall consist of on-the-job training, fire drills, training exercises and demonstrations, lecture

QUESTION F460.18 (11.4)

Provide the NMP2 Process Control Program establishing a set of process parameters and boundary conditions within which reasonable assurance can be given that solidification will be complete with essentially zero-free liquid based on the recommended WPC-VRS Topical Report process parameters. Your process control program should include administrative and/or plant operating procedures to meet waste form structural stability requirements set forth in Section 61.56 of 10CFR61.

RESPONSE

The process control program is not yet available. Generic tests have been run on their process using their own methodology which indicate the stability requirements of 10CFR61 will be met by the NMP2 system.

The vendor of the VRS system is preparing a program based on the requirements of 10CFR61, the NRC's final waste classification and waste form technical position papers concerning stability requirements for solidified waste states that generic information from topical reports using actual or simulated waste can be used to qualify a process control program.

Tests will be performed based on the analytical standards set forth by the NRC. Test information will be collected to establish a complete program prior to making the VRS system operational.

The process control program is expected to be available by the second quarter of 1985.

QUESTION F460.19 (11.4)

Section 20.311 of 10CFR20 requires that any licensee who transfers radioactive waste to a land disposal facility must classify the waste according to Section 61.55 of 10CFR61. Provide a compliance program to assure proper classification of waste in accordance with guidance provided in Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification, Rev. 0, dated May 1983.

RESPONSE

Radioactive waste shipments are classified according to Section 61.55 of 10CFR61 by a combination of direct measurements and scaling factors. Direct measurements are made of the significant gamma-emitting nuclides, gross alpha, and water content of each batch of waste shipments. Scaling factors, initially developed from industry data and subsequently from actual measurements on composite samples of waste batches, are used to quantify nuclides not directly measured. The factors will be redeveloped when significant changes are observed in various process streams and on a periodic basis.

Specifically, the following is used to quantify the nuclides listed in Tables 1 and 2 of Section 61.55 for each radioactive waste stream:

Co-60, Cs-137, and other gamma-emitting nuclides with sufficient yield - By direct gamma ray spectroscopy.

Ni-63, Sr-90, Tc-99, and I-129 - By scaling to nuclides directly measured.

Transuranics, Pu-241, and Cm-242 - By scaling to gross alpha directly measured.

H-3 - By scaling to water content.

C-14, Ni-63, and Nb-94 in activated metal - By physical calculations based on exposure.

Procedures will be developed by March 1985 for classification of waste shipments from Unit 2. Training procedures will be developed and training will be provided prior to use of the procedures.

QUESTION F471.21 (SRP 13.1)

(a) Figure 13.1-9 shows that the health physics and chemistry functions at NMP-2 are not separated into a Health Physics Section and Chemistry Section supervised by a Health Physics Supervisor and a Chemistry Supervisor as recommended by our positions in Section II.A.1 of NUREG-0731. The organization and Figure 13.1-9 should be revised to reflect separate supervision of these distinct functional areas..

(b) The applicant should provide qualifications in the form of a resume for the Superintendent, Chemistry and Radiation Management (RPM) to demonstrate that the RPM meets the requirements of Regulatory Guide 1.8, "Personnel Selection and Training."

(c) The applicant should commit to using the criteria of ANSI 3.1, December 1979, in selecting the individual temporarily filling the RPM's position as outlined in NUREG-0731.

(d) The applicant should commit to train health physics technicians in accordance with the criteria of ANSI/ANS 3.1-1978, which requires one year of related technical training and two years of experience, or ANSI 18.1, which also requires such training and experience. Additionally, radiochemistry and radiation protection are separate specialties each requiring two years of working experience, as indicated in ANSI 18.1. The applicant should commit to provide experienced technicians with appropriate qualifications and two years of experience in each specialty, chemistry and radiation protection, or should separate the functions into two distinct specialties in accordance with ANSI 18.1.

(e) To comply with the criteria of NUREG-0654, Table B-1 and the II.A.d(2) of NUREG-0731, the applicant should commit to have at least one ANSI 18.1 qualified health physics technician on the site at all times.

RESPONSE

See revised Chapter 13.

TABLE 13.1-3 (Cont)

Supervisor Computer Operations and Maintenance Nuclear

This supervisor is responsible for the proper operation of the station process computer, the security computers, the document control computer, the outage management and scheduling computer, site applications on the Niagara Mohawk system computers and the operation and maintenance of the various mini and micro computers used on the site for process and results applications.

Supervisor Technical Support Nuclear

The Supervisor Technical Support Nuclear is in charge of the coordination of the activities of the General Site Technical Support Staff. This staff is composed of technical assistants of diverse training and experience, who are assigned on special projects within the Technical Department.

Supervisor Fire Protection Nuclear

The Supervisor Fire Protection Nuclear performs general planning, testing, inspection and overseeing of the station fire protection functional activities. Periodic testing of the systems and portable equipment is performed by shift fire brigade personnel or technicians under the direction of the Shift Supervisor or Supervisor Fire Protection.

Superintendent Chemistry and Radiation Management

The Superintendent Chemistry and Radiation Management is responsible for the chemistry, radiochemistry, radiation protection and emergency planning requirements of the stations(He is the "Radiation Protection Manager" defined in ANSI 18.1-1978). He also coordinates the chemical and radiochemical aspects of the effluent and environmental monitoring to ensure the maintenance of site criteria. Under his direction are the Supervisor Chemistry and Radiation Protection, Supervisor Radiological Support, and the Environmental Coordinator.

Supervisor Chemistry and Radiation Protection

The Supervisor Chemistry and Radiation Protection has direct responsibility for the Radiochemistry and Radiation Protection Technicians and for the operation of the Chemistry and Radiochemistry Laboratory, radiation protection program, and radiological monitoring equipment.

TABLE 13.1-3 (Cont)

(When he temporarily fills the ("Radiation Protection Manager") Superintendent Chemistry and Radiation Management position, he is qualified to ANS 3.1 Draft 1979)
Under his direction are the Unit Radiation Protection Supervisor, Unit Chemistry Supervisor, and Supervisor Instrument Support.

Supervisor Radiological Support

The Supervisor Radiological Support has the responsibility of assisting the Superintendent Chemistry and Radiation Management in providing technical and administrative guidance in the areas of Emergency Planning, ALARA, Radiological Engineering, Respiratory Protection, and Dosimetry (He is an individual who can temporarily fill the ("Radiation Protection Manager") Superintendent Chemistry and Radiation Management's position and is qualified to Section 4.4.4 of ANS 3.1 Draft 1979).
Under his direction is a technical support staff to provide technical guidance in the above areas.

Unit Radiation Protection Supervisor

Under the general direction of the Chemistry and Radiation Protection Supervisor, this supervisor is responsible for providing technical and administrative guidance in the area of radiation protection and for managing and controlling personnel exposures to radiation and radioactive materials. A Technical Specialist is assigned to assist this supervisor.

Unit Chemistry Supervisor

Under the general direction of the Chemistry and Radiation Protection Supervisor, this supervisor is responsible for providing technical and administrative guidance in the area of Chemistry and for managing and controlling radioactive and chemical effluents. A Technical Specialist is assigned to assist this supervisor.

Supervisor Instrument Support

Under the general direction of the Chemistry and Radiation Protection Supervisor, this supervisor is responsible for a program to assure that all counting room and radiation protection instrumentation, as well as sealed sources, are properly inventoried and maintained. A Technical Specialist is assigned to assist this supervisor.

ALARA Coordinator

Under the general direction of the Supervisor Radiological Support, this supervisor is responsible for developing and maintaining a formal ALARA program to assure that the

TABLE 13.1-3 (Cont)

Radwaste Operations Supervisor

The Radwaste Operations Supervisor, under the general direction of the Supervisor Operations, is responsible for coordinating the safe and efficient conduct of waste operations. He schedules and coordinates waste shipments and supervises the packing of radioactive waste as necessary. He directs and supervises the work of operators assigned to duties in the waste facility. Assistant Supervisors Radwaste Operations are assigned, as required.

Radiological Engineer

Under the general direction of the Supervisor Radiological Support, this supervisor is responsible for providing highly specialized technical advice and assistance in the area of radiological engineering.

Emergency Coordinator

This supervisor has responsibility for maintaining and modifying the Emergency Plan and Procedures as required, for maintaining the Emergency Plan Monitoring equipment and for the scheduling, operation and analysis of drills and other exercises of the Emergency Plan and Procedures. An assistant emergency coordinator is assigned to assist this supervisor.

Environmental Protection Coordinator

This supervisor is responsible for coordination of the environmental programs associated with the Nine Mile Point Site and operated by contractors, and also for environmental monitoring conducted by site personnel.

TABLE 13.1-4 (Cont)

Title	No. Site Personnel	Section of ANSI N18.1-1978 Containing Qualifications
Training Specialist Nuclear	16	NA
Emergency Coordinator	1	NA
Supervisor Chemistry and Radiation Protection	1	4.4.3 or 4.4.4 *
Unit Radiation Protection Supervisor	2	4.4.4
Unit Chemistry Supervisor	2	4.4.3
Supervisor Instrument Support	1	4.7.2
Supervisor Radiological Support	1	4.6.1*
Dosimetry Coordinator	1	4.7.2
ALARA Coordinator	1	4.7.2
Radiation Protection Technicians	As Needed	4.5.2
Chemistry & Radiochemistry Technicians	As Needed	4.5.2
Environmental Protection Coordinator	1	4.7.2
Respiratory Protection Coordinator	1	4.7.2
Radiological Engineer	1	4.7.2
Assistant Station Shift Supervisor Nuclear	16	4.3.1
Station Shift Supervisor Nuclear	16	4.3.1
Chief Shift Operator	12	4.3.1
Nuclear Auxiliary Operator E	24	4.3.1

* When one of these individuals temporarily fills the position of Superintendent Chemistry and Radiation Management this individual will meet the qualifications of Section 4.4.4 of ANS 3.1 Draft 1979.

13.2.16 Shift Technical Advisor Training

The Shift Technical Advisor (STA) attends the training program for Senior Reactor Operators (SRO). The SRO program meets the requirements of NUREG 0737 Appendix C. For a comparison of the SRO program and the requirements for STA training in NUREG 0737 Appendix C see Table 13.2-2.

13.2.17 Applicable NRC Documentation

The following NRC documents are applicable to training:

10CFR50	Licensing of Production & Utilization Facilities
10CFR50	Appendix R Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979
10CFR55	Operator License
10CFR55	Appendix A Requalification Program For Licensed Operators
10CFR55.33	Appendix E Renewal of Licenses Technical Specifications 6.4.1
NUREG-0094	NRC Licensing Operating Guide
NUREG-0737	Clarification of TMI Action Plan Requirements
10CFR71	Packaging of Radioactive Material for Transport
Regulatory Guide 1.8	Personnel Selection and Training
USNRC Letter	Harold Denton to all power reactor applicants and licensees. Subject - qualifications of reactor operators, dated March 28, 1980.

The above-listed regulatory guidance has been addressed in the training program and implementing procedures.

CHAPTER 13

LIST OF FIGURES

TABLE OF CONTENTS (Cont)

TABLE 13.2-2

SRO PROGRAM COMPARISON TO NUREG-0737 *

APPENDIX C

NUREG-0737, Appendix C		SRO PROGRAM	
6.2	Applied Fundamentals(120 hrs) Plant Specific Rx Technology Chemistry & Corrosion Control I&C Plant Materials Plant Thermal Cycle	Reactor Theory Simulator Week Plant Systems Training Plant Systems Training Thermodynamics	80 hours 8 hours 40 hours 4 hours 40 hours 172 hours
6.3	Management/Supervisory Skills (40 hours) Leadership Interpersonal Communication Motivation of Personnel Problem & Decisional Analysis Stress Human Behavior Command Responsibilities & Limits	Admin Procedures, Controls & Limitations (Leadership Training) (Procedural Training)	24 hours 16 hours 40 hours
6.4	Plant Systems (200 hours)	Plant Systems Training	200 hours
6.5	Administrative Controls (80 hours)	Simulator Training Admin Procedures, Controls and Limitations	25 hours 40 hours 65 hours
6.6	General Operating Procedures (30 hours)	Simulator Training	30 hours
6.7	Transient/Accident Analysis (30 hours)	Simulator Training	30 hours
6.8	Simulator Training	Simulator Training	120 hours

* This table is typical of each training class, however, the actual hours may vary by ± 20 percent based upon the qualifications and experience of the training class.

F.S.A.R. Changes to Chapter 13.2

13.2.1.2 Administration of Training Programs

All instructors teaching the licensed training and retraining programs in the subjects of systems, integrated responses, transients and simulator courses shall demonstrate senior reactor operator qualifications and be enrolled in appropriate requalification programs. Other members of the permanent or non-permanent training staff, who are responsible for teaching technical subjects, such as reactor theory, heat transfer, fluid mechanics, thermodynamics, health physics, chemistry and instrumentation are exempt from the senior reactor operator criteria. Guest lecturers who are considered subject matter experts, who are to be used on a limited basis, are also exempt from the Senior Reactor Operator Criterion but shall be monitored by a qualified instructor.

NINE MILE POINT UNIT 2 RESPONSE TO TMI REQUIREMENTS

I.A.1.1 SHIFT TECHNICAL ADVISOR

FSAR Cross Reference

Sections 13.1, 13.2.2

NUREG-0737 Position

Each licensee shall provide an on-shift Technical Advisor to the Shift Supervisor. The Shift Technical Advisor (STA) may serve more than one unit at a multiunit site if qualified to perform the advisor function for the various units.

The STA shall have a bachelor's degree or equivalent in a scientific or engineering discipline and have received specific training in the response and analysis of the plant for transients and accidents. The STA shall also receive training in plant design and layout, including the capabilities of instrumentation and controls in the control room. The licensee shall assign normal duties to the STAs that pertain to the engineering aspects of assuring safe operations of the plant, including the review and evaluation of operating experience.

The need for the STA position may be eliminated if the qualifications of the Shift Supervisors and Senior Operators have been upgraded and the man-machine interface in the control room has been acceptably upgraded. However, until long-term improvements are attained, the need for an STA program will continue.

The NRC staff will establish the detailed elements of the academic and training requirements of the STA at a later date. The level of upgrading required for licensed operating personnel and the man-machine interface in the control room acceptable for eliminating the need of an STA will also be determined at a later date. Until these requirements for eliminating the STA position have been established, the staff continues to require that an STA be available for duty on each operating shift when a plant is being operated in Modes 1-3 for a BWR. At other times, an STA is not required to be on duty.

Since the accident at TMI several efforts have been made to establish, for the long term, the minimum level of experience, education, and training for STAs. These efforts include work on the revision to ANS-3.1, work by the

Institute of Nuclear Power Operations (INPO), and internal staff efforts.

INPO has made available a document entitled Nuclear Power Plant Shift Technical Advisor--Recommendations for Position Description, Qualifications, Education and Training. A copy of Revision 0 of this document, dated April 30, 1980, is attached as a supplement to this task. Sections 5 and 6 of the INPO document describe the education, training, and experience requirements for STAs. The NRC staff finds that the descriptions as set forth in Sections 5 and 6 of Revision 0 to the INPO document are an acceptable approach for the selection and training of personnel to staff the STA positions. The INPO document provides interim guidance for a utility in planning its STA program over the long term.

Applicants for operating licenses shall provide a description of their STA training program and their plans for requalification training on a schedule consistent with the NRC licensing review schedule. This description shall indicate the level of training attained by STAs and demonstrate conformance with the qualification and training requirements.

Applicants for operating licenses shall provide a description of the long-term STA program, including qualification, selection criteria, training plans, and plans, if any, for the eventual phase-out of the STA program on a schedule consistent with the NRC licensing review schedule.

Nine Mile Point Unit 2 Position

The STA qualifications are shown on Table 13.1-4 and include a bachelor's degree or equivalent in a scientific or engineering descipline. Training requirements are discussed in Section 13.2, and include specific training in plant design and arrangement, and the capabilities of the instruments and controls in the control room. The STA's review and evaluate operating experience reports, including engineering aspects of assuring safe sperations. During off-normal events, he provides the Station Shift Supervisor with and assessment of station conditions and advises actions to terminate or mitigate the consequences of off-normal conditions. During this time he shall perform no duties unrelated to assessment or diagnosis.

I.C.3 SHIFT SUPERVISOR RESPONSIBILITY

FSAR Cross Reference

Sections 13.1, 13.5.1

NUREG-0737 Position

The highest level of corporate management of each licensee shall issue and periodically reissue a management directive that emphasizes the primary management responsibility of the Shift Supervisor for safe operation of the plant under all conditions on his shift and that clearly establishes his command duties.

Plant procedures shall be reviewed to assure that the duties, responsibilities, and authority of the Shift Supervisor and Control Room Operators are properly defined to effect the establishment of a definite line of command and clear delineation of the command decision authority of the Shift Supervisor in the control room relative to other plant management personnel. Particular emphasis shall be placed on the following:

1. The responsibility and authority of the Shift Supervisor shall be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the control room. The idea shall be reinforced that the Shift Supervisor should not become totally involved in any single operation in times of emergency when multiple operations are required in the control room.

2. The Shift Supervisor, until properly relieved of duty, shall remain in the control room at all times during accident situations to direct the activities of Control Room Operators. Persons authorized to relieve the Shift Supervisor shall be specified.

3. If the Shift Supervisor is temporarily absent from the control room during routine operations, a lead Control Room Operator shall be designated to assume the control room command function. These temporary duties, responsibilities, and the authority shall be clearly specified.

Training programs for Shift Supervisors shall emphasize and reinforce the responsibility for safe operation and the

management function the Shift Supervisor is to provide for assuring safety.

The administrative duties of the Shift Supervisor shall be reviewed by the senior officer of each utility responsible for plant operations. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

The following table clarifies this position:

SHIFT SUPERVISOR RESPONSIBILITY (2.2.1.a)

NUREG-0578 Position (Position No.)	Clarification
Highest level of corporate management (1)	V. P. for operations
Periodically reissue (1)	Annual reinforcement of company policy
Management direction (1)	Formal documentation of shift personnel, all plant management, copy to IE region
Properly defined (2.0)	Defined in writing in a plant procedure
Until properly relieved (2.8)	Formal transfer of authority, valid SRO License, Recorded in plant log
Temporarily absent (2.C)	Any absence
Control room defined (2.C)	Includes shift supervisor office adjacent to the control room
Designated (2.C)	In administrative procedures
Clearly specified	Defined in administrative procedures

NUREG-0578 Position (Position No.)	Clarification
SRO training	Specified in ANS 3.1 (Draft) Section 5.2.1.8
Administrative duties (4)	Not affecting plant safety
Administrative duties reviewed (4)	On same interval as reinforcement: i.e., annual by V. P. for operation

Nine Mile Point Unit 2 Position

The response to this task is contained in I.A.1.2.

Refer to Task I.A.1.2 position statement for response to I.C.3.

I.A.1.2 SHIFT SUPERVISOR RESPONSIBILITIES

FSAR Cross Reference

Sections 13.1, 13.5.1

NUREG-0737 Position

The highest level of corporate management of each licensee shall issue and periodically reissue a management directive that emphasizes the primary management responsibility of the Shift Supervisor for safe operation of the plant under all conditions on his shift and that clearly establishes his command duties.

Plant procedures shall be reviewed to assure that the duties, responsibilities, and authority of the Shift Supervisor and Control Room Operators are properly defined to effect the establishment of a definite line of command and clear delineation of the command decision authority of the Shift Supervisor in the control room relative to other plant management personnel. Particular emphasis shall be placed on the following:

1. The responsibility and authority of the Shift Supervisor shall be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the control room. The idea shall be reinforced that the Shift Supervisor should not become totally involved in any single operation in times of emergency when multiple operations are required in the control room.

2. The Shift Supervisor, until properly relieved, shall remain in the control room at all times during accident situations to direct the activities of Control Room Operators. Persons authorized to relieve the Shift Supervisor shall be specified.

3. If the Shift Supervisor is temporarily absent from the control room during routine operations, a lead control room operator shall be designated to assume the control room command function. These temporary duties, responsibilities, and authorities shall be clearly specified.

Training programs for Shift Supervisors shall emphasize and reinforce the responsibility for safe operation and the

management function of the Shift Supervisor is to provide for assuring safety.

The administrative duties of the Shift Supervisor shall be reviewed by the senior officer of each utility responsible for plant operations. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

The following table provides clarification to the above position.

SHIFT SUPERVISOR RESPONSIBILITY (2.2.1.a)

NUREG-0578 Position (Position No.)	Clarification
Highest level of corporate management (1)	V. P. for operations
Periodically reissue (1)	Annual reinforcement of company policy
Management direction (1)	Formal documentation of shift personnel, all. plant management, copy to IE region
Properly defined (2.0)	Defined in writing in a plant procedure
Until properly relieved (2.B)	Formal transfer of authority, valid SRO license, recorded in plant log
Temporarily absent (2.C)	Any absence
Control room defined (2.C)	Includes shift supervisor office adjacent to control room
Designated (2.C)	In administrative procedures
Clearly specified (2.C)	Defined in administrative procedures

NUREG-0578 Position (Position No.)	Clarification
SRO training (3)	Specified in ANS 3.1 (Draft) Section 5.2.1.8
Administrative duties (4)	Not affecting plant safety
Administrative duties reviewed (4)*	On same interval as reinforcement: i.e., annual by V. P. for operations

NINE MILE POINT UNIT 2 POSITION

Prior to fuel loading and annually thereafter, the Vice President-Nuclear Generation shall issue a management directive that emphasizes the primary management responsibility of the Station Shift Supervisor (SSS) for safe operation of the plant under all conditions on his shift and clearly establishes his command duties.

Plant procedures are written to assure that the duties, responsibilities and authority of the SSS and other licensed control room operators are properly defined to effect the chain of command.

In the future, administrative duties of the SSS will be reviewed annually after fuel load by the Vice President-Nuclear Generation to ensure that such functions don't detract from safe plant operation.

SSS RESPONSIBILITIES

The Station Shift Supervisor is in charge of all operations on his assigned shift. Under the general direction of the Supervisor Operations Nuclear, his function includes direction of shift activities, authorization of equipment releases for maintenance, ensuring that the plant is operated safely and within the license and technical specifications and ensuring that plant operations are conducted in accordance with approved procedures. As overall supervisor of operations for his shift, the Station Shift Supervisor should avoid becoming personally involved in the manipulative tasks or details of operation of any one portion of the plant so that he may retain a comprehensive perspective of general station conditions at all times. In an emergency situation, however, should the Shift Supervisor choose to perform manipulative functions to ensure that the plant is in a safe condition, he shall coordinate his actions with the Chief Shift Operator. Whenever he determines that the safety of the reactor is in immediate joepardy or when operating parameters exceed any of the reactor protection circuit setpoints and automatic shutdown should, but does not occur, he has the responsibility and the authority to order shutdown of the reactor or to personally effect the shutdown.

The Shift Supervisor shall hold an NRC senior reactor operator license. He shall be continuously present at the plant for the duration of his assigned shift until properly relieved by the oncoming Shift Supervisor. It is his responsibility to provide direction for returning the reactor to power following a trip or an unscheduled power reduction.

During (normal operations) periods when the SSS is out of the control room, he designates another SRO the control room command function, as specified by administrative procedures.

During emergencies, accidents or incidents requiring special procedures, the Shift Supervisor shall remain continuously in the control room until relieved by the oncoming shift supervisor or a senior licensed operator designated by the Supervisor Operations or higher authority. From the control room, he shall continuously assess the condition of the station and provide general direction for all operating actions.

Training programs for SROs reinforce the responsibility for safe operation and the management function of the control room supervisor to assure safety.

SSS administrative duties have been reviewed, and many of the administrative functions have been assigned to other personnel.

I.B.1.2 INDEPENDENT SAFETY ENGINEERING GROUP

FSAR Cross Reference

Sections 13.1.1, 13.4

NUREG-0737 Position

Each applicant for an operating license shall establish an onsite independent safety engineering group (ISEG) to perform independent reviews of plant operations.

The principal function of the ISEG is to examine plant operating characteristics, NRC issuances, Licensing Information Service advisories, and other appropriate sources of plant design and operating experience information that may indicate areas for improving plant safety. The ISEG is to perform independent review and audits of plant activities, including maintenance, modifications, operational problems, and operational analysis and to aid in the establishment of programmatic requirements for plant activities. Where useful improvements can be achieved, it is expected that this group will develop and present detailed recommendations to corporate management for such things as revised procedures or equipment modifications.

Another function of the ISEG is to maintain surveillance of plant operations and maintenance activities to provide independent verification that these activities are performed correctly and that human errors are reduced as far as practicable. ISEG will then be in a position to advise utility management on the overall quality and safety of operations. ISEG need not perform detailed audits of plant operations and shall not be responsible for signoff functions such that it becomes involved in the operating organization.

The new ISEG shall not replace the plant operations review committee (PORC) and the utility's independent review and audit group as specified by current staff guidelines (Standard Review Plan, Regulatory Guide 1.33, Standard Technical Specifications). Rather, it is an additional independent group of a minimum of five dedicated, full-time engineers, located onsite but reporting offsite to a corporate official who holds a high level, technically-oriented position that is not in the management chain for power production. The ISEG will increase the available technical expertise located onsite and will provide continuing, systematic, and independent assessment of plant activities. Integrating the Shift Technical

Advisors (STAs) into the ISEG in some way would be desirable in that it could enhance the group's contact with the knowledge of day-to-day plant operations to provide additional expertise. However, the STA on shift is necessarily a member of the operating staff and cannot be independent of it.

It is expected that the ISEG may interface with the quality assurance (QA) organization, but preferably should not be an integral part of the QA organization.

The functions of the ISEG require daily contact with the operating personnel and continued access to plant facilities and records. The ISEG review functions can therefore best be carried out by a group physically located onsite. However, for utilities with multiple sites, it may be possible to perform portions of the independent safety assessment function in a centralized location for all the utility's plants. In such cases, an onsite group still is required, but it may be slightly smaller than would be the case if it were performing the entire independent safety assessment function. Such cases will be reviewed on a case-by-case basis.

At this time, the requirement for establishing an ISEG is being applied only to applicants for operating licenses in accordance with Task I.B.1.2. The staff intends to review this activity in about a year to determine its effectiveness and to see whether changes are required. Applicability to operating plants will be considered in implementing long-term improvements in organization and management for operating plants (Task I.B.1.1).

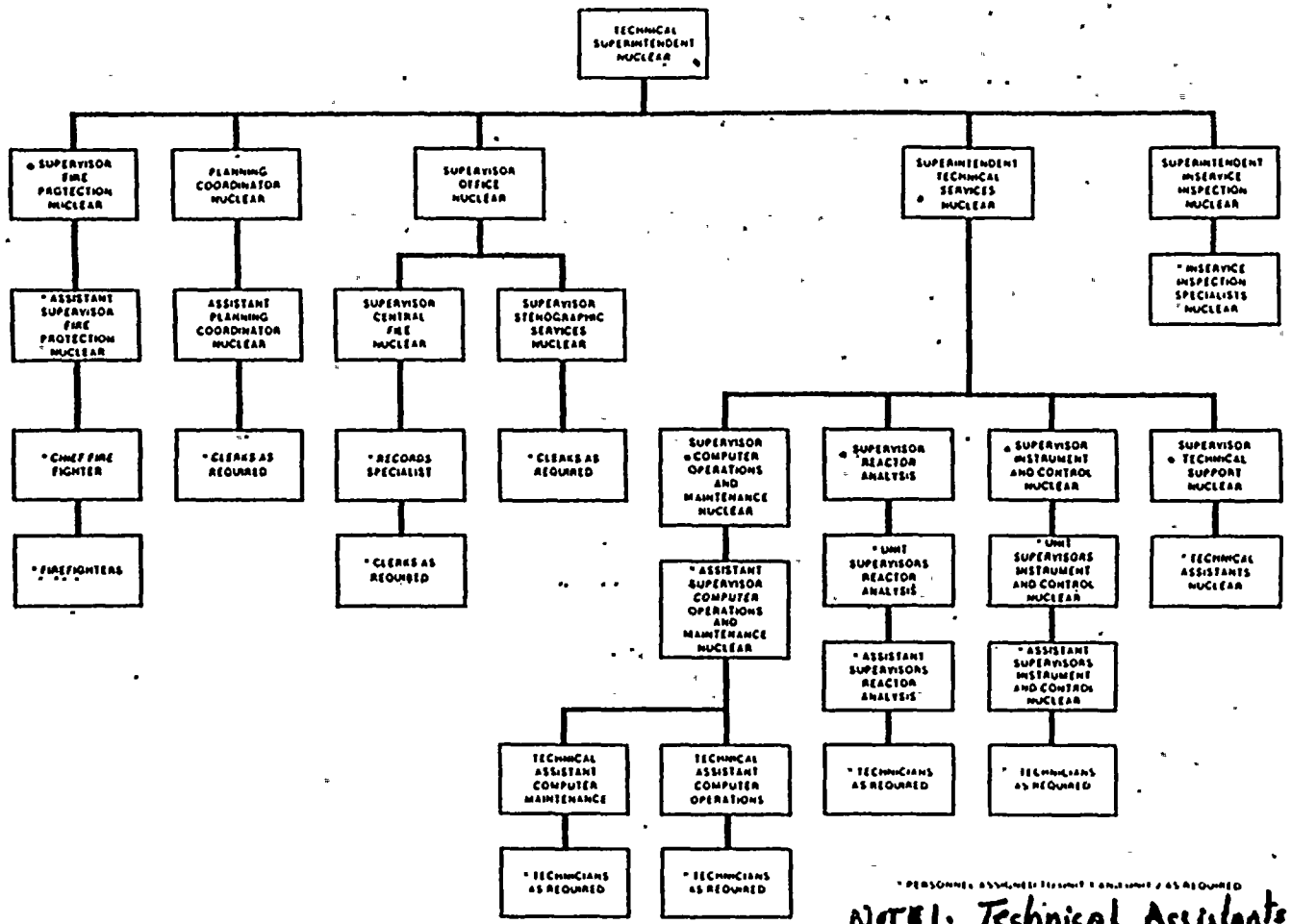
Nine Mile Point Unit 2 Position

An onsite ISEG will be established to perform independent reviews of plant operation. The principal function of the ISEG is to examine plant operating characteristics, various NRC and industry licensing and service advisories, and recommend ones for improving plant operations or safety. The ISEG will perform independent review of plant activities, including maintenance, modifications, operational concerns, and operational analysis and make recommendations to the Supervisor Technical Support Nuclear. The Supervisor Technical Support Nuclear (or his designee) will present to Operations Assessment Committee (OAC) and/or the Technical Superintendent the results of analysis including (when useful improvements can be achieved) detailed recommendations such as revised procedures or equipment modifications. Presentations to SORC are provided by the Operations Assessment Committee described in Section 13.4.

The ISEG will observe plant operations and maintenance activities to determine that these activities are being performed properly and provide written recommendations (when useful improvements can be achieved). The ISEG does not perform detailed (QA type) audits, and are not responsible for signoff functions associated with daily operational activities. The ISEG is independent of SORC and SRAB but may make recommendations to these groups.

The ISEG is a total of ten dedicated full-time engineers, assigned onsite to Unit 1 and Unit 2, and report to the Supervisor Technical Support Nuclear. The Supervisor Technical Support Nuclear reports to the Superintendent Technical Services Nuclear and then reports to the Technical Superintendent who is responsible for all technical support on site.

Although the Technical Department reports to the General Superintendent Nuclear Generation (who is responsible for operations), the Technical Department is independent from the direct operational supervision of the plant that resides with the Station Superintendent. Additionally, the Technical Department has recourse to resolve safety concerns by addressing such concerns to either the SRAB or the Vice President Nuclear Engineering and Licensing.



NOTE 1

* PERSONNEL ASSIGNED TO UNIT 1 AND UNIT 2 AS REQUIRED

NOTE 1. Technical Assistants make up the IS EG

FIGURE 13.1-7

TECHNICAL ORGANIZATION

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT-UNIT 2
FINAL SAFETY ANALYSIS REPORT

I.C.2 SHIFT AND RELIEF TURNOVER PROCEDURES

FSAR Cross Reference

Section 13.5.1

NUREG-0737 Position

The licensees shall review and revise as necessary the plant procedure for shift and relief turnover to assure the following:

1. A checklist shall be provided for the oncoming and offgoing Control Room Operators and the oncoming Shift Supervisor to complete and sign. The following items, as a minimum, shall be included in the checklist:

   a. Assurance that critical plant parameters are within allowable limits (parameters and allowable limits shall be listed on the checklist).

   b. Assurance of the availability and proper alignment of all systems essential to the prevention and mitigation of operational transients and accidents by a check of the control console (what to check and criteria for acceptable status shall be included in the checklist).

   c. Identification of systems and components that are in a degraded mode of operation permitted by the Technical Specifications. For such systems and components, the length of time in the degraded mode shall be compared with the Technical Specifications action statement (this shall be recorded as a separate entry on the checklist).

2. Checklists or logs shall be provided for completion by the offgoing and ongoing auxiliary operators and technicians. Such checklists or logs shall include any equipment under maintenance or test that by itself could degrade a system critical to the prevention and mitigation of operational transients and accidents or initiate an operational transient (what to check and criteria for acceptable status shall be included on the checklist).

3. A system shall be established to evaluate the effectiveness of the shift and relief turnover procedure.

Nine Mile Point Unit 2 Position

The Unit 2 (shift relief turnover) procedures will include:

1. A checklist providing for the oncoming and offgoing Control Room Operators and the oncoming Shift Supervisor to complete and sign. The following items, as a minimum, shall be included in the checklist:

   a. Assurance that critical plant parameters are within allowable limits (parameters and allowable limits shall be listed on the checklist).

   b. Assurance of the availability and proper alignment of all systems essential to the prevention and mitigation of operational transients and accidents by a check of the control console (what to check and criteria for acceptable status shall be included in the checklist).

   c. Identification of systems and components that are in a off normal or out of service mode of operation permitted by the Technical Specifications. For such systems and components, the length of time in the off normal or out of service mode shall be compared with the Technical Specifictions action statement (if any). (This shall be recorded as a separate entry on the checklist.)

2. Checklists or logs shall be provided for completion by the offgoing and ongoing operators. Such checklists or logs shall include any equipment under maintenance or test that by itself could degrade a system critical to the prevention and mitigation of operational transients and accidents or initiate an operational transients and accidents or initiate an operational transient (what to check and criteria for acceptable status shall be included on the checklist).

3. A system shall be established to evaluate the effectiveness of the shift and relief turnover procedure.

I.C.4 CONTROL ROOM ACCESS

FSAR Cross Reference

Section 13.5.1

NUREG-0737 Position

The licensee shall make provisions for limiting access to the control room to those individuals responsible for the direct operation of the nuclear power plant (e.g., Operations Supervisor, Shift Supervisor, and Control Room Operators), to technical advisors who may be requested or required to support the operation, and to predesignated NRC personnel. Provisions shall include the following:

1. Develop and implement an administrative procedure that establishes the authority and responsibility of the person in charge of the control room to limit access, and

2. Develop and implement procedures that establish a clear line of authority and responsibility in the control room in the event of an emergency. The line of succession for the person in charge of the control room shall be established and limited to persons possessing a current senior reactor operator's license. The plan shall clearly define the lines of communication and authority for plant management personnel not in direct command of operations, including those who report to stations outside of the control room.

Nine Mile Point Unit 2 Position

Unit 2 will utilize procedures to limit access to the Control Room to those individuals responsible for direct operation of the plant, and technical advisors requested or required to support operation and to NRC personnal as described below:

1. Procedures establish the authority and responsibility of the person in charge of the Control Room to limit access, and

2. Procedures establish a clear line of authority and responsibility in the Control Room in the event of an emergency. The line of succession for the person in charge of the Control Room include those holding a senior reactor operators license. The emergency plan clearly defines the line of communication and authority for plant management personnel not in direct command of operations, including those reporting to stations outside the Control Room.

I.C.5 PROCEDURES FOR FEEDBACK OF OPERATING EXPERIENCE TO PLANT STAFF

FSAR Cross Reference

Section 13.5.1

NUREG-0737 Position

In accordance with Task I.C.5, Procedures for Feedback of Operating Experience to Plant Staff (NUREG-0660), each applicant for an operating license shall prepare procedures to assure that operating information pertinent to plant safety originating both within and outside the utility organization is continually supplied to operators and other personnel and is incorporated into training and retraining programs. These procedures shall:

1. Clearly identify organizational responsibilities for review of operating experience, the feedback of pertinent information to operators and other personnel, and the incorporation of such information into training and retraining programs;

2. Identify the administrative and technical review steps necessary in translating recommendations by the operating experience assessment group into plant actions (e.g., changes to procedures, operating orders);

3. Identify the recipients of various categories of information from operating experience (i.e., supervisory personnel, shift technical advisors, operators, maintenance personnel, health physics technicians) or otherwise provide means through which such information can be readily related to the job functions of the recipients;

4. Provide means to assure that affected personnel become aware of and understand information of sufficient importance that it should not wait for emphasis through routine training and retraining programs;

5. Assure that plant personnel do not routinely receive extraneous and unimportant information on operating experience in such volume that it would obscure priority information or otherwise detract from overall job performance and proficiency;

6. Provide suitable checks to assure that conflicting or contradictory information is not conveyed to operators and other personnel until resolution is reached; and,

7. Provide periodic internal audit to assure that the feedback program functions effectively at all levels.

Each utility shall carry out an operating experience assessment function that will involve utility personnel having collective competence in all areas important to plant safety. In connection with this assessment function, it is important that procedures exist to assure that important information on operating experience originating both within and outside the organization is continually provided to operators and other personnel and that it is incorporated into plant operating procedures and training and retraining programs.

Those involved in the assessment of operating experience will review information from a variety of sources. These include operating information from the licensee's own plant(s), publications such as IE Bulletins, Circulars, and Notices, and pertinent NRC or industrial assessments of operating experience. In some cases, information may be of sufficient importance that it must be dealt with promptly (through instructions, changes to operating and emergency procedures, issuance of special precautions, etc) and must be handled in such a manner to assure that operations management personnel would be directly involved in the process. In many other cases, however, important information will become available which should be brought to the attention of operators and other personnel for their general information to assure continued safe plant operation.

Since the total volume of information handled by the assessment group may be large, it is important that assurance be provided that high priority matters are dealt with promptly and that discrimination is used in the feedback of other information so that personnel are not deluged with unimportant and extraneous information to the detriment of their overall proficiency. It is important, also, that technical reviews be conducted to preclude premature dissemination of conflicting or contradictory information.

Nine Mile Point Unit 2 Position

Unit 2 will utilize Administrative Procedures and Training Procedures to implement the feedback of operating experience to plant staff. The procedures:

1. Clearly identify organizational responsibilities for review of operating experience, the feedback of pertinent information to operators, and other personnel, and the incorporation of such information in training and requalification training programs (for example see Section 13.2.4.1.1 item 9).

2. Identify the administrative and technical review steps necessary in translating recommendations by the Operations Assessment Committee into plant actions (e.g. changes to procedures, operating orders). Section 13.4 and 1.10 provide information on the Operations Assessment Committee.

3. Identify the recipients of various categories of information from operating experience (i.e. shift or supervisor, personnel) or otherwise provides means through which such information can be readily related to the job functions of the recipients (for example see Section 13.2.4.1.3).

4. Provide means to assure that affected personnel become aware of and understand information of sufficient importance that it should not wait for emphasis through routine training and retraining or standing orders or night orders (for example required reading assignments are made on an ongoing basis to address this concern).

5. Assure that plant personnel do not routinely receive extraneous information on operating experiences in such volume that it could obscure priority information.

6. Provide suitable checks to assure correct information is conveyed to operators and other personnel.

7. Provide periodic audits to assure that the feedback program functions effectively (for example Training Audits).

Operating experience assessment is performed by the Technical Support Group, the Operations Assessment Committee and SORC as described in Administrative Procedures on an ongoing basis. The individuals involved review information from a variety of sources such as, IE Bulletins, IE Information Notices, IMPO, reports, LER's, and vendor information letters such as SILS.

The feedback system provides for early notification of significant information to operating personnel and management. The evaluation process, specifically the Operations Assessment Committee meeting, provides assurance that the information is correct and that unimportant and extraneous information does not impact overall proficiency.

SER NO. 167
(5.2.2)

We require the applicant to discuss in detail the analytical method used to determine the number of the ADS SRVs. This method should consider the most limiting events and satisfy a single failure criterion.

RESPONSE

In a LOCA analysis, a particular ADS flow rate is required to bring the vessel pressure down in a prescribed time to allow the operation of low pressure core cooling following the postulated failure of HPCS. This required flow rate determines the number of ADS valves. Based on generic BWR calculations including that of Hanford, 7 ADS valves are required for NMP2. This number will be confirmed by NMP2 unique ECCS analysis.

SER QUESTION 170:

The LOCA analyses reported in the FSAR were for a lead plant representative of NMP-2. The applicant has committed to perform plant-specific LOCA analyses in a later amendment to the FSAR before fuel loading. The NRC staff will report the results of its review of the plant-specific analyses in a supplement to this report.

SER QUESTION 171:

The staff requires the applicant to provide calculated maximum total hydrogen generation from the chemical reaction of the cladding with water or steam for the most limiting LOCA case.

RESPONSE:

Information for SER items 170 and 171 will be provided by April 1985.

NINE MILE POINT UNIT 2

SER NO. 172

Single active component failures and operator errors are considered in the transient analysis of moderate frequency. The most limiting transient event is a feedwater controller failure with maximum demand with the failure of turbine bypass. The change in CPR is about 0.27 for an initial MCPR of 1.24 which results in violation of MCPR safety limit of 1.06. The applicant has stated that this transient event is one of only 2 to 3 seconds duration: no fuel failure would be expected. The staff requires that the applicant demonstrate how they meet a small fraction of 10 CFR 100 criteria violating OL MCPR limit. The applicant should also demonstrate the method used to identify this event when all moderate frequency transients combined with single failure/operator error are considered in the evaluation.

RESPONSE

As stated in the response to Question 440.41, for moderate-frequency events in Chapter 15, the inclusion of any additional single failure or operator error would shift the events to infrequent or limiting fault category which has less stringent safety criteria.

Responses to Questions 440.41 and 440.43 have identified that:

1) The worst additional single failure/operator error is the postulated failure of turbine bypass, and

2) Among all moderate-frequency transients coupled with turbine bypass failure, the most limiting event is feedwater controller failure with maximum demand.

In this scenario, the final CPR would violate the 1.06 safety limit for a duration of 2 to 3 seconds. Consequently, about 2% of fuel rods will undergo boiling transition for 2 to 3 seconds with corresponding peak clad temperature (PCT) below 1600°F. Since boiling transition would have to last for much longer than 30 seconds before PCT approaches the safety limit of 2200°F, no fuel failure or radiological release is expected. Therefore, the requirement of meeting "a small fraction of 10CFR100 limit" is satisified.

NINE MILE POINT UNIT 2

SER. NO. 173

The applicant was asked to justify that operation with partial feedwater heating to extend the cycle beyond the normal end of cycle condition would not result in a more limiting change in minimum critical power ratio than that obtained using the assumption of normal feedwater heating. The applicant indicated that analyses will be provided before operation in this mode if a decision is made to operate in this mode. Until such analyses are provided the staff will condition the license to prohibit operation in this mode.

RESPONSE

Operating with reduced feedwater temperature after rated end of cycle is not the design basis of the plant safety analysis. Although it is expected that current Chapter 15 analyses will bound this operation under a derated feedwater heating condition, Niagara Mohawk will submit additional analysis to accompany the request for this mode of operation. This commitment has been made in response to Question 440.46.

OPEN ISSUE 175

II.K.3.18 Modification of ADS Logic

NMPC is currently evaluating this item. The staff will require that NMP2 should specify which option they are planning to implement. Either Option 2 or 4 is acceptable to the staff.

RESPONSE

Nine Mile Point Unit 2 will implement Option 2. FSAR Section 1.10 will be revised to address this commitment.

Exemption Justification (10CFR50 Appendix J, Part III, A.1.d)

1. Systems that are required to maintain the plant in a safe condition during the test shall be operable in their normal mode and need not be vented.

2. Systems that are normally filled with water and operating under post accident conditions need not be vented.

The control rod drive and hydraulic control for the reactor recirculation flow control valves will not be vented during the ILRT as justified by Notes 17 and 26 of Table 6.2-56, respectively.

The test method utilized is the absolute method, as described in BN-TOP-1, Rev. 1, 1972. Values of primary containment atmosphere dry-bulb temperature, dew point temperature (vapor pressure), and pressure are used in the leakage rate calculations.

The primary containment leakage monitoring system (LMS) provides means for monitoring the primary containment pressure during ILRT. Two independent pressure sensing lines, each equipped with a quartz digital type absolute pressure manometer, are provided in LMS system. One extra quartz manometer is provided as a not-installed spare (Figure 6.2-73).

Eighteen temperature elements and six humidity analyzers are provided in the primary containment atmosphere monitoring system (CMS) to monitor dry-bulb and dew point temperatures, respectively (Figure 6.2-71).

The test procedure, test equipment and facilities, period of testing, and verification of leak test accuracy follow the recommendations of BN-TOP-1, Rev. 1, 1972.

Acceptance criteria for a Type A tests are described in Chapter 16.

6 2.6.3 Primary Containment Isolation Valve Leakage Rate Tests (Type C Tests)

Primary containment isolation valve leakage rate tests will be performed by local pressurization in accordance with the requirements of Appendix J to 10CFR50. The pressure will be applied in the same direction as it would be applied when the valve is required and documented that the results from the test for a pressure applied in the opposite direction will provide equivalent or more conservative results. Each valve to be tested will be closed by normal operation, without any preliminary exercising or adjustment. Table 6.2-56 lists all primary containment isolation valves on pipelines penetrating the primary containment.

The test pressures and acceptance criteria for the primary containment isolation valve leakage rate tests are given in Table 6.2-60.

6.2.6.4 Additional Requirements

The combined leakage rate forall penetrations and valves subject to Type B and C tests will be in accordance with 10CFR50 Appendix J.

6.2.6.5 Scheduling and Reporting of Periodic Tests

The periodic leakage test schedule is given in Chapter 16.

6.2.6.6 Special Testing Requirements

The reactor building will be tested as required by Chapter 16.

A peroperational high pressure drywell bypass leakage test will be performed once prior to fuel load to determine the bypass leakage from the drywell into the suppression chamber. The containment will be subjected to the maximum design pressure differential of 25 psi between the drywell and suppression chamber.

The test pressures and acceptance criteria for the drywell bypass leakage tests are given in Table 6.2-61.