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SCHWENCER,A. Licensing Branch 2

SUBJECT: Provides revised response to FSAR Question 640.10.Info submitted to aid review of license application & will be included in Amend 17 to FSAR.

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NIAGARA MOHAWK

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

December 4, 1984
(NMP2L 0278)

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 is the Nine Mile Point Unit 2 revised response to a Nuclear Regulatory Commission's Final Safety Analysis Report question. 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 this question. This information includes response to question 640.10.

The enclosed information will be included in Final Safety Analysis Report Amendment 17.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

NLR:ja
Enclosure
xc: R. Gramm, NRC Resident Inspector
Project File (2)

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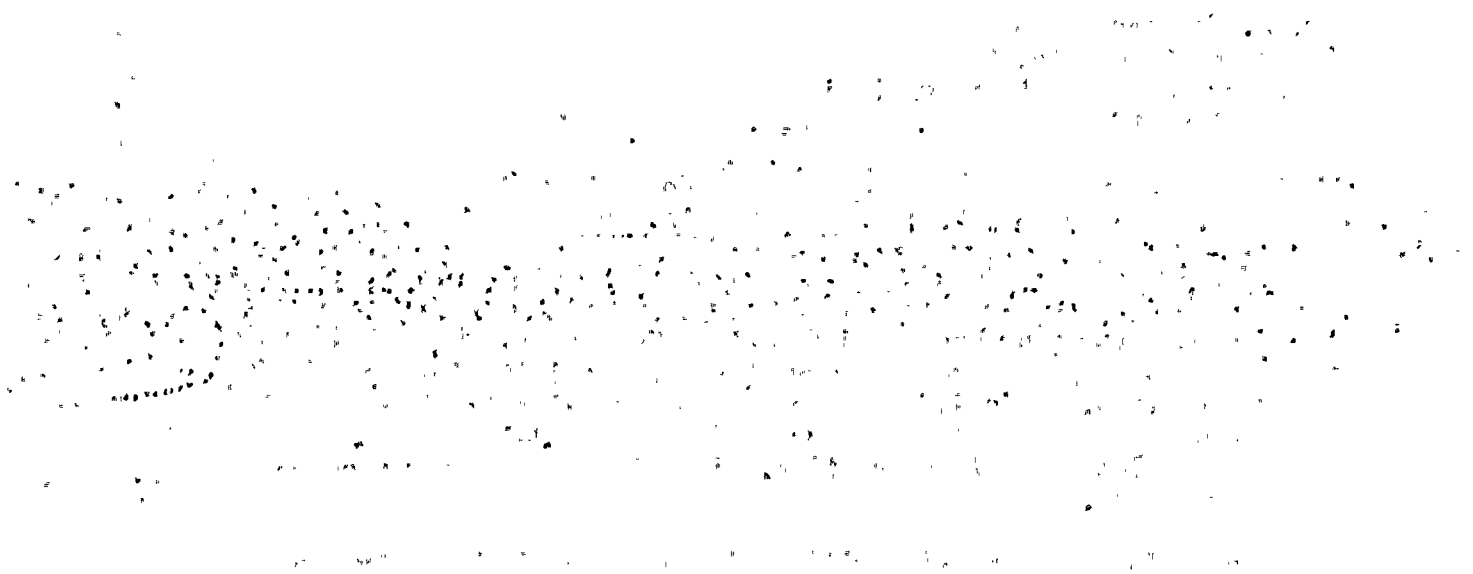

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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 4th day of December, 1984.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1985

QUESTION F640.10 (14.2.12)

Preoperational and acceptance test abstracts use an identical format for describing what will be done and, for many of the tests, either reference an FSAR subsection that only in vague generalities discusses how the system is designed to perform, or reference an incorrect or nonexistent FSAR subsection. Startup test abstracts often do not list sources of acceptance criteria. For any of the following tests subject to FSAR Chapter 17 Quality Assurance Program requirements, modify the abstract to include specific acceptance criteria or identification of the sources for the acceptance criteria to be used when test procedures are prepared. This information is necessary for the NRC inspectors who review test procedures and evaluate test results. The test description should provide "traceability" to acceptance criteria sources such as: other FSAR subsections which contain specific detail as to the expected system performance, Technical Specifications, topical reports, vendor-furnished test specifications, and/or accident analysis assumptions.

1. Preoperational Test Abstract Numbers 14.2-45 through 51, 66, 68, 74, 76, 78, 84, 85, 92, 100, 102 through 105, 108, and 109.

2. Startup Test Abstract Numbers 14.2-110, 112 through 115, 117 through 126, 128 through 137, and 139 through 144.

RESPONSE

Revised preoperational and acceptance test abstracts are provided in Section 14.2. Revised startup test abstracts are provided in Tables 14.2-202 through 14.2-227. | 12

Additional Information (F640:10)

Question (1) The following acceptance and pre-operational test abstracts should be modified to reference appropriate acceptance criteria: 77, 87, 111, 124 and 130.

Response (1) See revised test abstracts 14.2-77, 14.2-87, 14.2-124 and 14.2-130, test abstract 14.2-111 has been deleted.

Question (2) The following startup test abstracts should be modified as follows:

(a) The Maximum Feedwater Runout Capability test (FSAR Table 14.2-225) Level 1 acceptance criteria should reference specific FSAR sections and the Level 2 acceptance criteria should clarify the runout conditions specified in Part 1.

(b) The Drywell Atmosphere Cooling System test (FSAR Table 14.2-301) should be provided.

Response (2) (a) See revised test abstract 14.2-225.

(b) Test abstract 14.2-301 has been deleted, but will be supplied by March 1985.

TABLE 14.2-77

STANDBY GAS TREATMENT AND SECONDARY CONTAINMENT LEAKAGE TEST | 12

System 61 | 12

Preoperational Test (N2-POT-61B)

Test Objectives

1. To demonstrate the reliable operation of the standby gas treatment system and components.

2. To verify that the standby gas treatment system can maintain the proper reactor building pressure and that reactor building leakage rate is within design limits. | 12

Safety Precaution

~~Follow all NMPC safety rules and proper procedures during testing.~~

Prerequisites

1. All applicable preliminary tests are completed and approved.

2. All applicable motor control centers to supply electric power to motors, control circuits, and instrumentation are available.

~~3. All valve lineups are completed.~~

4. Reactor building ventilation system is operable, and all reactor building doors and hatches are closed. | 12

Test Procedure

1. The test procedure will verify that the two gas treatment filter trains operate according to design specifications under normal and transient conditions.

2. Various system auto initiations will be demonstrated.

3. System annunciators, control instrumentation, and interlocks will be tested. | 12

4. Standby gas treatment fan operation will be verified.

TABLE 14.2-77 (Cont)

5. The test will verify that the SGTS will accomplish its design objective of reestablishing the Reactor Building pressure equal to our below -0.25 in W.G. within the required time interval.

6 With the standby gas treatment system in operation and all doors and hatches controlled in the closed position, secondary containment leakage rate will be verified as within allowable limits.

Acceptance Criteria

1. Each standby gas treatment system train and its associated equipment; valves, motors, filters, etc., will function as designed per SWEC logic drawings LSK 27-15A-H.

2. System interlocks, control instrumentation and annunciators function as designed per SWEC design drawings LSK 27-15A-H.

3. Reactor Building ventilation system isolation functions as designed per system logic drawings LSK 27-15A-H.

4. Each standby gas treatment system train can maintain reactor building pressure equal to or below -0.25 wg (see FSAR Sec. 6.5).

5. The reactor building leakage rate is not greater than 3,160 cmf (see Response to FSAR Question F480.25).

6. The secondary containment drawdown time to -0.25 in. W.G. is less than 90 seconds, at a maximum of 3600 cfm (see Technical Specifications Section 3/4.6.5).

TABLE 14.2-87

345-KV TRANSFORMER

System 69

Preoperational Test (N2-POT-69)

Test Objectives

1. To demonstrate the reliable operation of the 345-kV transformer system and components.

2. To ensure the system is properly designed and constructed.

Safety Precaution

Follow all NMPC safety rules and proper procedures during testing.

Prerequisites

1. All applicable preliminary tests are completed and approved.

2. All applicable motor control centers to supply electric power to motors, control circuits, and instrumentation are available.

Test Procedure

1. The test procedure ensures all controls and interlocks are checked for proper operation to ensure performance in accordance with specifications.

2. The transformer cooling fans will be verified for proper operation.

3. Disconnect switches will be checked for response to simulated conditions and interlocks.

4. All alarm set points are verified by simulated signals or actual parameter variation.

Acceptance Criteria

1. The operation of the 345 KV transformers is as described in FSAR Section 8.2.1

TABLE 14.2-87 (Cont)

8 2. Disconnect switches function as designed with respect to interlocks and system logic.

8 3. All alarms and annunciators function as designed.

TABLE 14.2-111

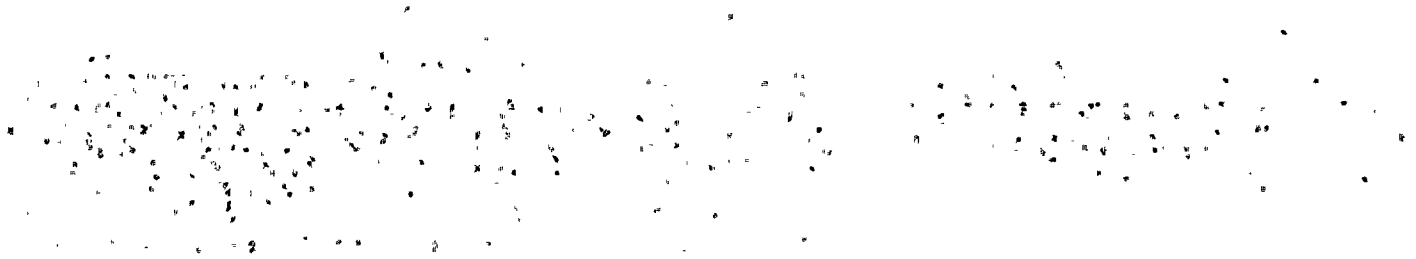

TABLE 14.2-124

TURBINE GENERATOR PROTECTION

System 98

Preoperational Test (N2-POT-98)

Test Objectives

1. To demonstrate the reliable operation of the turbine generator protection systems and components.

2. To ensure the system is properly designed and constructed.

Safety Precaution

Follow all NMPC safety rules and proper procedures during testing.

Prerequisites

1. All applicable preliminary tests are completed and approved.

2. All applicable motor control centers to supply electric power to motors, control circuits, and instrumentation are available.

Test Procedure

1. The test procedure ensures all controls, interlocks, and trips are checked for proper operation to ensure performance in accordance with specifications.

2. All alarms and set points are verified by simulated signals or actual parameter variation.

3. The test procedure demonstrates that adequate turbine generator protection is provided in the event of abnormal conditions.

Acceptance Criteria

1. Protective relays and system logic function as designed to provide necessary turbine generator protection as described in FSAR Section 10.2

2. All applicable set points, interlocks, and trips function as designed in accordance with SWEC design drawings.

TABLE 14.2-124 (Cont)

8 3. All alarms and annunciators function as designed.

TABLE 14.2-130

RPV HYDROSTATIC TEST

Preoperational Test (N2-POT-111)

Test Objectives

1. To verify the structural integrity of the reactor pressure vessel and all associated welds within the pressure boundary.

2. To identify any source of leakage from within the pressure boundary.

Safety Precaution

Follow all NMPC safety rules and proper procedures during testing.

Prerequisites

1. All applicable preliminary tests are completed and approved. 8

2. Applicable water quality standards are met for cleaning and testing.

3. Reactor vessel must be above NDTT to minimize the possibility of brittle fracture.

Test Procedure

1. The test procedure will verify the structural integrity of the reactor pressure vessel and all associated welds within the pressure boundary.

2. The reactor vessel will be filled with demineralized water and pressurized to 125 percent of design pressure.

3. The reactor will be held at this pressure for a minimum of 10 minutes.

4. The examination of pumps and valves will be performed with the vessel at test pressure.

5. The reactor vessel pressure will then be reduced to 75 percent of the test pressure, and the welds and vessel will be checked for leakage.

TABLE 14.2-130 (Cont)

Acceptance Criteria

1. Reactor vessel integrity is verified by the demonstrated capacity to maintain system test pressure as defined by ASME Boiler and Pressure Vessel Code, Section III.
2. Any leakage identified during the hydro test is within design specifications.
3. Post hydrostatic inspections of all RPV nozzle and safe end welds are acceptable per the applicable ASME Section III code.

TABLE 14.2-225

MAXIMUM FEEDWATER RUNOUT CAPABILITY

Startup Test (SUT-23D)

Test Objective

To determine that the maximum feedwater runout capability is compatible with licensing assumptions and to calibrate the feedwater flow.

Prerequisites

The appropriate pre-operational tests have been completed; the SORC has reviewed and approved the test procedures and initiation of testing. Instrumentation has been checked or calibrated as appropriate.

Test Procedure

The test is divided into two parts, first, the initial calibration of the valve controllers and second, verification of calibration by measured data which includes a verification that the maximum feedwater flows do not exceed the flows (different flows at different vessel pressures) in the FSAR Sec. 10.4.7.

1. The valve controller calibration is due by first obtaining vendor pump and valve performance curves. The pump and valve performance curves are then used to determine the valve position corresponding to the maximum allowable flow at rated vessel pressure specfied by the FSAR and the maximum valve position which corresponds to 0% flow at 865 psia. Additionally, for good level control system performance, it is desirable to be able to reach 115.5% NDR flow at 1071 psia and 68% NDR flow at 1021 psia in the one pump tripped condition. Adjustable equipment (i.e., valve control loops, mechanical limiters, feedwater control system function generators, etc.) are set to prevent the feedwater pumps from exceeding their maximum allowed output, and yet allow the desirable performance.

2. During the data collection and verification of calibration portion of the test, pressure, flow and controller data will be collected between 60-100% power. Measured data will be compared against expected values to ensure proper calibration. The measured maximum flow will be adjusted to the FSAR pressures using the measured data. The maximum flows stated in the FSAR are used as licensing assumptions, therefore, the FSAR maximum flows should not be exceeded. If, however, the FSAR maximum flows are exceeded, there exist two options. The system can be adjusted so that the licensing assumption is not exceeded or an additional penalty can be applied to the ΔCTR. This penalty will be calculated by the appropriate engineering component and operating limits modified where necessary.

Action	Test Conditions
1. Record master controller output, feedwater pump suction, discharge and reactor pressures, feedwater flow rate, flow control valve positions and actual locations of valve position limiting stops.	A. Four equally spaced feedwater flow points. This can be done at TC-3 or any high power point achieved prior to commercial operation. B. All systems in NORM mode. C. Maximum number of condensate and feedwater pumps normally operated at 100% power shall be running.
2. Determine sensitivity of feedwater flow to reactor pressure over a 30 psi range in 5 psi increments.	A. Reactor power between 80 and 90% rated. B. All systems in NORM mode. C. Maximum number of condensate and feedwater pumps normally operated at 100% power shall be running.

Acceptance Criteria

Level 1

Maximum valve position attained shall not exceed the valve position which would result in the following flows with the normal complement of pumps operating.

a) 155% of NBR at 1025 psia
b) 155% - .2% (P-1025); where P = vessel pressure in psia

Maximum feedwater flow rates are based on the feedwater controller failure transient analyzed in FSAR Section 15.1.3. If any questions remain, contact NSSS Transient Analysis Engineering.

Level 2

The maximum valve position must be greater than the calculated position required to supply:

a) With rated complement of pumps - 115.5% NBR at 1071 psia
b) One feedwater pump tripped condition - 68% NBR at 1021 psia

NOTE

Level 1 test criteria are originated from NSSS Transient Performance Engineering Unit. Level 2 test criteria are originated from Control System Design Unit.