DR Central files

NIAGARA MOHAWK POWER CORPORATION

NIAGARA MOHAWK

300 ERIE BOULEVARD WEST
SYRACUSE, N.Y. 13202

JOHN G. HAEHL, JR.
PRESIDENT

July 5, 1973

Mr. F. E. Kruesi
Reactor Operations
Division of Reactor Licensing
United States Atomic Energy Commission
Washington, D. C. 20545

Dear Mr. Kruesi:

Re: Provisional Operating License: DPR-17
Docket No.: 50-220

This letter is a resubmittal in reply to your letter to Mr. R.R. Schneider, Vice President-Electric Operations, received May 23, 1973, regarding the inspection conducted by Mr. Cantrell of Region I, Regulatory Operations Office and other Regulatory Personnel on August 29 - September 1, 1972, at the Nine Mile Point Nuclear Station Unit #1.

This resubmittal was requested by Mr. James P. O'Reilly, Jr., Director Region I - Newark, at a meeting in his office on June 14, 1973, attended by Messrs. J. G. Haehl, President; J. Bartlett, Executive Vice President; J. H. Terry, Vice President and Associate General Counsel; P. A. Burt, General Superintendent Nuclear Generation; and R. R. Schneider, Vice President-Electric Operations; representing Niagara Mohawk Power Corporation.

Mr. O'Reilly informed us that in our letter dated June 11, 1973, answering the above, we had not responded to the statement, "As you were informed during the meeting, the number and nature of these violations indicate the need for improvement in the management control of the operational and administrative aspects of your licensed operations." Mr. O'Reilly informed us also, that our reply to the items in the enclosure, "Description of Violations," was not complete enough to be satisfactory.

In consequence of the finding that a need existed for the improvement of management control, a number of conferences were held in which Corporate Management of the Company and Plant Supervision thoroughly reviewed the results of the inspection and audit. It was firmly impressed upon Plant Supervisory Personnel that the Technical Specifications must be followed at all times, that limits requiring shutdown must be carefully observed, and required reports submitted on time.

The criticism of the handling of the review items by the SORC and of the minutes was immediately remedied after the January 10, 1973 meeting with your Staff people in Syracuse. The SORC minutes were expanded, then reviewed and attached to much more thorough SR & A Board minutes which in turn were forwarded to the required Management people, as provided for in Fig. 6.1.4 of the Revision of Technical Specifications, as approved by Mr. Skovholt by letter of June 21, 1973.

While your Management audit was going on (January, 1973), changes were being made in our Management. Considerable reorganization was in process. A letter dated March 12, 1973, from President James A. O'Neill, deceased, to Mr. L. Manning Muntzing, indicated the scope of these changes.

On June 7, 1973, a letter was submitted from P.D. Raymond to Mr. D. J. Skovholt requesting authorization from the Commission to make certain revisions in the administrative controls section of the Technical Specifications, which we feel will improve Management Control of Plant Operations. (As noted above, these were approved by letter of June 21, 1973).

As we stated in the meeting in Mr. O'Reilly's office, it is the intention of Niagara Mohawk's Management that this plant shall be operated in full compliance with all A.E.C. Regulations and the Technical Specifications. The items concerning failure to report are for the most part the result of differing interpretations of what constitutes a reportable occurrence, rather than an intent not to inform the Commission.

This necessity for proper and prompt reporting has also been thoroughly impressed upon the Plant Supervision.

In addition, an expansion of the Quality Assurance and Quality Control Groups has been undertaken since your inspection. This includes: (1) A corporate level - Quality Assurance group reporting directly to the Executive Vice President; (2) Assignment of a Quality Control position at Nine Mile Point Site with the individual now stationed at the site and reporting to the General Superintendent of Nuclear Generation; (3) An additional expansion of the Quality Control group at Nine Mile Point Site with selection of proper individuals now taking place; (4) Expansion of the Quality Control group located in Syracuse.

The following are responses to each individual item as delineated by your enclosure:

ITEM 1

On June 23, 1972, the Unit was held steady at 345 MW (e) and 1109 MW (t) investigating a problem which had developed with the turbine generators. At 1825 hours power was increased to 530 MW (e) to verify the difficulty with the turbine-generator unit. Once verified a load reduction was initiated, designed to bring the turbine generator off line but to maintain the reactor in the power operating condition. Because the condenser vacuum was to be removed (MSIV closure with no vacuum and reactor pressure above 550 psig) it was deemed necessary to hold reactor power low enough to maintain approximately 400° F and 270 psig within the reactor. It was not planned to remove the reactor from the power operating condition and the mode switch remained in the start-up condition throughout this holding period. Technical Specification 4.1.1.c (2) states:

> Following each reactor scram from rated pressure, the mean 90% insertion time shall be determined for eight selected rods. If the mean 90% insertion time of the selected control rod drives does not fall within the range of 2.4 to 3.1 seconds or the measured scram time of any one drive for 90% insertion does not fall within the range of 1.9 to 3.6 seconds, an evaluation shall be made to provide reasonable assurance that proper control rod drive performance is maintained.

Technical Specification 4.1.1.c (3) states:

> Following any outage not initiated by a reactor scram, eight rods shall be scram tested with reactor pressure above 800 psig. The same criteria of 4.1.1.c (2) shall apply.

The controlled load decrease to remove the turbine-generator from the line while maintaining the reactor in the power operating condition did not to us constitute an outage. During the holding period (hot standby) a reactor scram occurred from 271 psig reactor pressure with a resultant degradation in reactor pressure to 207 psig before criticality was achieved and pressure brought back to approximately 300 psig. With the reactor scram occurring at less than rated temperature and pressure, again rod scramming was not considered essential as it was thought that the spirit of the rod scramming commitment had been lived up to. It should also be mentioned that control rods (129) were scrammed following the spring outage and also on June 14, 1973. A comparison with rod scrams taken in July on the 8 selected rods (Enclosure 1) showed an improvement. However, in the future, whenever a controlled decrease in reactor power or a reactor scram reduces reactor pressure to less than 800 psig, eight selected rods will be scram tested.

ITEM 2

In response to ITEM 2 of the enclosure to your letter, the monthly liquid poison system function test procedure (Enclosure 2) has been revised as of January 1973, to satisfy Technical Specification 4.1.2.a (2) which states:

> At least once per month-
>
> Demineralized water shall be recycled to the test tank. Pump discharge pressure and minimum flow rate shall be verified.

The test had been run according to the existing procedures on the interval as established in the Technical Specifications. The pumps are positive displacement pumps and therefore the 30 gpm minimum pumpage could easily be established. However, no pressure gauge was present to establish the pumping pressure. Valves and pressure gauges have been added to the discharge test lines leading to the 55 gallon test drum. During the testing operation these valves are throttled to maintain a discharge pressure greater than 1100 psig and a minimum flow rate of 30 gpm. A review of the monthly test procedure sheets shows full compliance with the above Technical Specification since January 1973.

ITEM 3

Technical Specification 4.2.5 states:

> Specification
>
> A check of reactor coolant system leakage shall be made at least once per day.

The primary means of determining the reactor coolant system leakage rate is by monitoring the levels in the drywell Floor drain and Equipment drain tanks. When an alarm occurs from the leakage detection system an operator is dispatched to determine the time required to fill the tank between two preset levels and through means of a curve the leakage rate can be determined. During the period March 2nd through March 3rd no alarms were received. The proper means of completing the various shift check off sheets has been discussed with the plant operators, and the daily check sheet is reviewed each day by a staff member. In addition, full compliance in this matter has been a fact since the fall of 1972.

Due to an operator's error, the March 2nd (1100 p.m.) drywell Equipment drain tank reading was taken 10 hours late and was recorded along with the reading taken on March 3rd. Due to the ten hour delayed reading, no 24 hour difference calculation was recorded. (Enclosure 3).

The March 2nd drywell Floor drain tank reading was recorded with a slash indicating that the reading had not changed since March 1st. The Reactor Operators have been advised of the importance of maintaining these records properly and each daily check sheet is reviewed daily before filing.

ITEM 4

In reference to ITEM 4 of the enclosure to your letter - Fig. 6.1.4. of the Technical Specifications states that the Safety Review and Audit Board Review will evaluate Technical Specification violations making pertinent recommendations and submitting safety analyses to the Vice President-Engineering and Vice President-Electric Operations.

The Safety Review & Audit Board has reviewed and evaluated Technical Specification violations.

These have been discussed at Board meetings and documented in the minutes of such meetings. These minutes contain Board recommendations and have been sent to Management for review.

Board procedures have since been changed so that safety analyses and recommendations are treated in specific separate written memorandums to Management.

ITEM 5

In regard to ITEM 5 of the enclosure to your letter, respiratory equipment had been routinely washed, surveyed for contamination, inspected and sealed in plastic and the results entered in the Radiation Survey Log Book prior to September 1972, as required by the Station Radiation Protection Procedure. However, the tagging of the respiratory equipment was not done. Therefore, to insure proper tagging of each item of respiratory equipment, a meeting was held with all Radiation Protection Technicians, and a departmental instruction issued, assigning responsibility for completing the Washed, Survey and Equipment Check portions of the Respiratory Equipment Clearance tag for each item of respiratory equipment. In addition, Radiation Protection and Chemistry Supervisory personnel have commenced periodic inspection of all stored respiratory equipment to remove and resurvey any items found without a tag. They have found good adherence to the tagging requirement, with the result that properly tagged items have been available at all times since October 10, 1972.

ITEM 6

ITEM 6 of the enclosure to your letter addresses the development, review, approval and implementation of procedures.

Concerning ITEM 6a, all operating records required by Facility procedures will be reviewed for completeness and signature by a competent individual prior to filing. This has been implemented since January 1973.

Concerning ITEMS 6b, 6c, 6d, and 6e, procedures for the gagging of safety valves have been written and will be submitted to the Site Operation Review Committee (SORC) at its next meeting. At the present time, Maintenance and Safety Valve Test procedures are being written and will be submitted to the SORC for approval this year. Although the 1972 general refueling procedure had not been formally approved by SORC, it had been reviewed by the Department heads and the General Superintendent. The general refueling procedure for 1973 has been approved by SORC and in the future all changes to this procedure will be reviewed and approved by SORC prior to implementation. The surveillance calibration procedures which have been written will be reviewed and approved by SORC at its next meeting.

ITEM 7

In reference to ITEM 7 Fig. 6.1.4 of the Technical Specifications requires that the Safety Review and Audit Board review and approve design changes. The Board has the responsibility to document reasons for change and determine whether it involves an unreviewed safety question. In your letter you describe three (3) changes for which this written safety evaluation were not prepared. All three of these changes were reviewed and approved by both onsite and offsite review committees.

These were approved and documented in meeting minutes of each committee. A separate safety evaluation will be made of each item in the upcoming July 25, 1973 Safety Review and Audit Board Meeting. In the future, all design changes will have separate safety evaluations prepared, which provide the basis for determining that the change does not involve unreviewed safety questions.

Full compliance has been achieved on all items excepting those specified in ITEM 6 which will achieve compliance this year. Staff members are at present reviewing and writing those procedures necessary for compliance. As these procedures are completed they will be reviewed by SORC.

Very truly yours,

Original signed by
John G. Haehl, Jr.

John G. Haehl, Jr.

Enclosures

ENCLOSURE 1

90% INSERTION TIME

ROD	JUNE 7	JUNE 14	JULY 22
10-27	2.96	3.28	2.95
26-27	3.26	3.12	3.00
38-07	2.76	2.90	2.73
34-51	2.68	2.76	2.60
26-43	2.87	2.68	2.54
34-35	3.69	2.68	2.62
46-15	2.98	2.92	2.87
26-11	2.69	2.76	2.71
AVE.	2.98	2.88	2.752

ENCLOSURE 2

NINE MILE POINT NUCLEAR STATION

OPERATING PROCEDURES

Procedure Number 12

Liquid Poison System

Approvals By Name	Dates and Initial			
	Revision 0	Revision 1	Revision 2	Revision 3
Reactor Analyst C. J. Pietrangelo	4/7/69 RJP	6/3/70 RJP	12/22/72 RJP	
Radiation Protection Supv. R R Bowen	4/3/69 RRB	6/3/70 RRB	8/1/72 RHB	
Assnt. to Super. J E Lampoon	4/18/69	6/3/70 JEL	12/27/72 GBS	
Station Superintendent G A Beck	4/19/69	6/3/70 [illegible]	1/2/73 GAB	
SORC Chairman D Ballard Beck			1/3/73 DBB	

OPERATING PROCEDURE #12

LIQUID POISON SYSTEM

A. Technical Specification Requirements

1. LIQUID POISON SYSTEM (3.1.2)

Applicability:

Applies to the operating status of the Liquid Poison System

Objective:

To assure the capability of the Liquid Poison System to function as an independent reactivity control mechanism.

Specification:

a. During periods when fuel is in the reactor and the reactor is not shutdown by the control rods, the Liquid Poison System shall be operable except as specified in "b" below.

b. If a redundant component becomes inoperable, Specification "a" above, shall be considered fulfilled, provided that the component is returned to an operable condition within 7 days and the additional surveillance required is performed.

c. The liquid poison tank shall contain a boron-bearing solution that satisfies the volume concentration requirements of Figure 3.1.2a Revised (In the Tech Specs) (page 28) at all times when the Liquid Poison System is required to be operable.

d. The Liquid Poison solution temperature shall not be less than the temperature presented in Figure 3.1.2b (page 29, Tech Specs).

e. If Specifications "a" thru "d" are not met, initiate normal orderly shutdown within one hour.

B. Plant Operating Requirements

1. Same as Technical Specifications.

2. Test frequency:

(a) At least once during each operating cycle.

1) Manually initiate system from the control room. Demineralized water shall be pumped to the reactor vessel to verify minimum flow rates and demonstrate that valve and nozzles are not clogged.
Remove the squibs from the valves and verify that no deterioration has occurred by actual firing of the removable squibs. In addition, field fire one squib from the batch of replacements.
Disassemble and inspect the squib-operated valves to verify that valve deterioration has not occurred.

2) At least once per month demineralized water shall be recycled to the test tank. Pump discharge pressure and minimum flow rate shall be verified.

(b) 1) At least once per month; Boron concentration shall be determined.

2) At least once per day; solution volume shall be checked. In addition, the boron concentration shall be determined any time water or Boron are added or if the solution temperature drops below the limits specified by Figure - 3.1.2.b.

3) At least once per day; the solution temperature shall be checked.

C. Start-Up Procedure

The following valves are positioned as follows:

L.P. #18, 19, 20, 21, 22, 23, 701, 702, 705, 706, 707, 708, 709, 710, 711 D.W. -9, D.W. -11, D.W. -13, and IA-34 are closed and locked closed. Check closed valves L.P. 703 and L.P.704 at L.P. pumps #11 and #12, and D.W. -12.
Open valves - L.P. #1, 2, 3, 4, 5, 6, 7, 10, 11, 14 and lock open. The liquid poison tank shall contain a proper relationship between concentration of sodium pentaborate and capacity, as described by the area on the curve of the tech. specifications. Both pump motor breakers are racked in. All fuses are in place and power on to the explosive valves which will be monitored in the Control Room. The Liquid Poison System is ready for operation.

D. Normal Operation

1. The Liquid Poison System is a manual operated system, controlled from a single selector switch in the Control Room on panel 1 K. . Placing the selector switch in position labled System #1 will start #11 L.P. pump, fire all explosive valves, isolate Clean-up System and pump poison into reactor vessel. Placing the selector swtich in position labled System #2 will start #12 L.P. pump, fire all explosive valves, isolate Clean-up System, and pump poison into reactor vessel. When the system is initiated, a recirculating pump or a shutdown pump should be running to insure uniform dispersion of the boron. Clean-up System must be manually shut down if interlock fails to operate.

2. The Liquid Poison System should not be used to pump the sodium pentaborate to the reactor vessel unless directed by the Station Superintendent or his authorized delegate.

E. To Shut Down System

In the event the Poison System is initiated, the reactor will be shut down. Run Liquid Poison System until flow alarm can be reset indicating less than 15 gpm flow, check liquid poison tank level which should be zero, then shut down system by placing Liquid Poison System selector sw. in off position.
After injection of the liquid poison, the reactor control that malfunctioned is repaired, the reactor shall not be operated again until the boron is cleaned up to less than 10 p.p.m. in the reactor water, the poison storage tank recharged with fresh boron solution, explosive valves serviced, system flushed and laid up with demineralized water.

F. Special Procedures

Whenever the poison pumps are operated to pump poison solution, either for test or to poison the vessel, valve DW-10 or DW-11 should be opened to flush poison in suction line of pump back to the poison tank thru L.P. valve #1. In the event a liquid poison pump was run with poison solution circulating back to liquid poison tank, a complete flush will be necessary by running pump with demineralized water to test tank and flushing all lines, pump, drains and test tank. The poison solution should then be analyzed for boron concentration because of slight dilution due to adding demineralized water.

The poison tank level will be maintained by adding demineralized water. This will be accomplished by using valves DW-9, DW-11 or DW-12 thru pump suction. Whenever water is added to poison tank, boron concentration must be determined by test.

If tank heater is inoperable, monitor tank temperature and add space heaters is required, to maintain temperature within technical specification limits.

NOTE: If the liquid poison tank is drained, the heater must be deenergized manually.

F. SPECIAL PROCEDURE:

Each month a liquid poison system functional test is performed to determine the discharge pressure and flow capacity of the L.P. pumps. Opening D.W. 13 will fill a test tank with demineralized water and this tank will supply the L.P. pumps. Line up pump #11 to discharge to a properly placed 55 gallon drum by opening valves L.P. #19, L.P. #705, , L.P. #711 and closing L.P. #3. Start L.P. pump #11 and throttle with L.P. #711 to obtain a 1000 psi reading on the local pressure gage. Stop pump and measure test tank level with a dip stick and record reading. Start pump and run only for 30 seconds. Record new tank level reading and with this reading, initial level reading, and the 30 second time of pump operation, determine pump flow capacity (~30 GPM). Repeat the above procedure for L.P. pump #12 with the exception of using L.P. #18, L.P. #2, L.P. #112, and L.P. #706 instead of L.P. #19, L.P. #3 and L.P. #111 and L.P. #705 respectively.

LIQUID POISON SYSTEM FUNCTIONAL TEST

1.0 Fill L.P. Test Tank

1.1 Open D.W.-13 and fill tank, then shut D.W. #13 _____

1.2 Measure tank level using calibrated DIP stick
_____gal. _____

2.0 L.P. Pump #11

2.1 Line up pump #11 to discharge to 55 gal. drum
Open L.P.-19 & LP-705, shut L.P.-3 _____

2.2 Insure 55 gal. drum is in place to receive pump discharge _____

2.3 Start L.P.-11 and run for 60 sec.
Record discharge pressure_____psig
Stop pump - shut L.P.-19. Open L.P.-3
shut L.P.-705 _____

2.4 Measure test tank and determine pump capacity (30 gpm)
_____gpm _____

2.5 Refill L.P. test tank per step 1.1 and 1.2 _____
_____gal.

3.0 L.P. Pump #12

3.1 Line up pump #12 to discharge to a 55 gal. drum

LP-18	open	_____	_____
LP-2	shut	_____	_____
LP-706	open	_____	_____

3.2 Repeat step 2.2-2.5 for L.P.-12

LP-12 discharge pressure_____psig			_____
Capacity _____gpm			_____
LP-18	shut	_____	_____
LP-2	open	_____	_____
LP-706	open	_____	_____

_____
Station Shift Supervisor

_____
Date

NINE MILE POINT NUCLEAR STATION
UNIT NO. 1

ENCLOSURE 3
* Early plant startup
Sheet 1 of 3

DAILY CHECK REQUIREMENTS
313-130 N CO-71

DAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE	2-27-72	2-28-72	2-29-72	3/1/72	3/2/72	3/3/72	3/4/72
SHIFT	11-12	11-12	11-12	7-12	7-12	7-12	7-12
TIME	2330	2300	2300	2235*	2235	2300	2300
MODE Sw. POSITION	RUN	Shut	Refuel	Refuel	RUN	RUN	Start-up
1. FLUX PEAKING FACTOR CALCULATED	1.8	2.28	NA	NA	5.12 (Est)	2.29	2.04
2. LIQUID POISON TANK							
(a) Volume Feet							
Volume Gallons							
Agrees with Fig. 3.1.2 (a) of Tech. Specs.							
(b) Temperature	77°						
Agrees with Fig. 3.1.2 (b) of Tech. Specs.	Yes			Yes			
3. EMERGENCY COOLING SYSTEM							
(a) Shell side water level #111 & 112	6.4		6.4	6.4	6.4	6.4	6.8
#121 & 122	7.1		7.2	7.1	7.1		7.0
(b) Make-Up Tank Level #11	8.3	8.3	9.7	9.4	9.4	9.0	9.6
#12	8.3	8.6	10	9.7		9.4	9.2
4. REACTOR COOLANT LEAKAGE							
(a) Excess Flow Alarms (Yes or No)	NO	NO	NO	NO		NO	NO
(b) D. W. Equipment Tanks 687100						694517	
Integrater reading	705686	707610	709108	710549			705088
24 Hr. Difference	1855	1924	1498	1441			1331
(c) Floor Drain Tank 70,000							
Integrater reading	706511	707132	707220	707220	—	707557	707534
24 Hr. Difference	312	632	88	0	—	337	337
5. TORUS							
(a) Downcomer Submergence	4.7	4.8	4.9	3.5	3.5	3.5	3.5
(b) Water Temperature	84	86	86	95°	95°	95°	95°
(c) Agree with Fig. 3.3.2 a,b, or c of Tech. Specs.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6. REACTOR PROTECTION SYSTEM							
Check each sensor for absence of alarms & for comparison with sensor monitoring same parameter.							
(a) Reactor Water Level Checks Low-Low Alarms (Yes or No)	NO	NO	NO	NO	NO	NO	NO
(Reason for "Yes" in notes)							
Col. 11 feet	0	3.1	N/A	+3.5	+1	+1	+1.5
Col. 12 feet	.7	1.3		.2	+.6	+6	+1.0
Yarway 11 feet	.1	.1		5.0	70	70	70
Yarway 12 feet	.7	.8		5.2	95	95	95