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SUBJECT: Forwards addl response to Generic Ltr 83-28 re generic implications of Salem ATWS events.Reactor protection sys on-line surveillance program requirements assure reliability of sys to function properly.

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

July 31, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Our April 30, 1984 letter, as supplemented by our July 2, 1984 letter, provided information and schedules related to the generic implications of the Salem Anticipated Transient Without Scram Events (Generic Letter 83-28). Attached is additional information in response to Generic Letter 83-28.

Sincerely,

NIAGARA MOHAWK POWER CORPORATION

C. V. Mangan
Vice President
Nuclear Engineering and Licensing

RJP/djm
Attachment

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ADDITIONAL INFORMATION REGARDING GENERIC LETTER 83-28

I. Reactor Trip System Equipment List (Section 2.1)

Niagara Mohawk does not currently plan to develop a specific list of components that would comprise a reactor trip system. The reactor trip function is accomplished at Nine Mile Point Unit 1 by utilizing redundant plant process instrumentation that input to a one-out-of-two twice logic system. These signals initiate a reactor trip (rapid control rod insertion i.e. scram) by deenergizing solenoid operated scram pilot valves that vent air from the reactor scram valves. Additional information is available in our current FSAR Section VIII, "Instrumentation and Control."

The components that contribute to the reactor trip function are contained in several systems rather than one reactor trip system. Those systems whose components contribute to the reactor trip function include reactor protection system, reactor vessel instrumentation system, neutron monitoring system and control rod drive system. Therefore, a new system identified as the reactor trip system would cause unnecessary inconsistencies with existing Nine Mile Point Unit 1 system nomenclature. This would require extensive revision to existing documentation and training program with no resultant enhancement of safety.

In addition, as indicated in our February 29, 1984 correspondence, a task is currently underway to upgrade the details of our equipment classification list (Q-list). This will provide additional assurance that those components which contribute to the reactor trip function are appropriately classified as safety related.

II. On-Line Functional Testing of Scram Pilot Valves and Backup Scram Valves (Section 4.5)

Generic Letter 83-28, Section 4.5 recommends on-line functional testing of scram pilot valves and scram backup valves. At Nine Mile Point Unit 1, the scram pilot air system controls and supplies air to operate the scram valves and the scram discharge volume vent and drain valves. The control air is supplied through two backup scram solenoid operated air valves to the scram pilot valves at the individual control rod drive hydraulic control units and the scram discharge volume vent and drain valves. The backup scram valves receive signals from the reactor protection system, as do the pilot solenoids, to each scram, vent and drain valve providing redundancy and increasing system reliability. The backup scram valves are design similar to the scram pilot valves in that they are AC powered and deenergize to operate. Should any of the scram pilot valves fail to function, the action of the backup scram valves assure that the control rods insert, thus, enhancing the reliability of the reactor trip function. No credit is taken for the backup scram valves in our FSAR, Section XV, "Safety Analysis" nor are they necessary to satisfy regulatory requirements.

Current testing of the backup scram valves is accomplished through the existing technical specification surveillance program. As explained in our letter of November 8, 1983, the surveillance tests, taken together, functionally test the trip system from the sensing instrument, through the trip logic circuitry, to the scram pilot valves including the backup scram valves. The surveillance procedures are written to test the one-out-of-two taken twice logic in such a manner that the channels are tested independently. This allows one-half of the necessary logic to "makeup," actuating the entire trip channel up to and including one out of the two scram pilot valves on every control rod's scram inlet and discharge valves and one of the two backup scram valves.

Scram testing is performed during each operating cycle. This scram time testing demonstrates the action of the pilot scram valves and scram inlet and discharge valves.

Based on the above, additional on-line functional testing of the backup scram valves is unwarranted. We are, however, evaluating the feasibility of additional testing of the backup scram valves during refueling outages. Our schedule calls for completing this evaluation by December 1984.

III. Reactor Trip System Reliability (System Functional Testing) - (Section 4.5)

Nine Mile Point Unit 1 on-line functional testing and testing intervals are performed consistent with our Technical Specifications. The following reactor trips are functionally tested on-line.

- Manual Scram
- High Reactor Pressure
- High Drywell Pressure
- Low Reactor Water Level
- High Water Level Scram Discharge Volume
- Main Steam Line Valve Position
- High Radiation Main Steam Line
- Neutron Flux
    - Intermediate Range Monitor (IRM) (when required)
    - Average Power Range Monitors
- Turbine Valve Closure
- Generator Load Rejection

In addition, the shutdown position of the reactor mode switch scram function is tested during refueling outages. During the testing discussed above, the scram pilot solenoid valves and backup scram valves are tested, in that one of the two scram pilot valves on every control rod scram inlet and outlet valves and one of the two backup scram valves are activated. Also, overvoltage, undervoltage and underfrequency protection is provided for the motor generator sets and maintenance bus that supply power to the reactor protection bus and reactor trip bus including power to the scram pilot valves and backup scram valves.

Section XV, "Safety Analysis" of our current FSAR discusses single failure caused transients which are unlikely, but have a distinct probability of occurrence during the life of the plant. For the major transients evaluated, the number of independent scram features which are available to terminate a particular transient are listed in our FSAR (Table XV-I). Therefore, it can be demonstrated that adequate redundancy exists in the Nine Mile Point Unit 1 design to provide protection against multiple independent sensor failures.

In summary, the current reactor protection system on-line surveillance program requirements, in terms of scope and testing intervals, in conjunction with multiple and diverse scram sensors assures the probability and reliability of the reactor trip system to function to effect control rod insertion and resulting reactor shutdown.