ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
DOCKET NO. 50-220

Proposed Changes to Technical Specifications and Bases

Replace existing pages 165 and 167 with the attached revised pages. These pages have been retyped in their entirety with marginal markings to indicate changes to the text.

LIMITING CONDITION FOR OPERATION

3.4.1 LEAKAGE RATE

Applicability:

Applies to the leakage rate of the secondary containment.

Objective:

To specify the requirements necessary to limit exfiltration of fission products released to the secondary containment as a result of an accident.

Specification:

Whenever the reactor is in the refueling or power operating condition, the reactor building leakage rate as determined by Specification 4.4.1 shall not exceed 1600 cfm. If this cannot be met after a routine surveillance check, then the actions listed below shall be taken:

a. Suspend immediately irradiated fuel handling, fuel pool and reactor cavity activities, and irradiated fuel cask handling operations in the reactor building.

b. Restore the reactor building leakage rates to within specified limits within 4 hours or initiate normal orderly shutdown and be in a cold shutdown condition within 10 hours.

SURVEILLANCE REQUIREMENT

4.4.1 LEAKAGE RATE

Applicability:

Applies to the periodic testing requirements of the secondary containment leakage rate.

Objective:

To assure the capability of the secondary containment to maintain leakage within allowable limits.

Specification:

Once during each operating cycle - isolate the reactor building and start emergency ventilation system fan to demonstrate negative pressure in the building relative to external static pressure. The fan flow rate shall be varied so that the building internal differential pressure is at least as negative as that on Figure 3.4.1 for the wind speed at which the test is conducted. The fan flow rate represents the reactor building leakage referenced to zero mph with building internal pressure at least 0.25 inch of water less than atmospheric pressure. The test shall be done at wind speeds less than 20 miles per hour.

In the answers to Questions II-3 and IV-5 of the Second Supplement and also in the Fifth Supplement*, the relationships among wind speed, direction, pressure distribution outside the building, building internal pressure, and reactor building leakage are discussed. The curve of pressure in Figure 3.4.1 represents the wind direction which results in the least building leakage. It is assumed that when the test is performed, the wind direction is that which gives the least leakage.

If the wind direction was not from the direction which gave the least reactor building leakage, building internal pressure would not be as negative as Figure 3.4.1 indicates. Therefore, to reduce pressure, the fan flow rate would have to be increased. This erroneously indicates that reactor building leakage is greater than if wind direction were accounted for. If wind direction were accounted for, another pressure curve could be used which was less negative. This would mean that less fan flow (or measured leakage) would be required to establish building pressure. However, for simplicity it is assumed that the test is conducted during conditions leading to the least leakage while the accident is assumed to occur during conditions leading to the greatest reactor building leakage.

As discussed in the Second Supplement and Fifth Supplement, the pressure for Figure 3.4.1 is independent of the reactor building leakage rate referenced to zero mph wind speed at a negative differential pressure of 0.25 inch of water. Regardless of the leakage rate at these design conditions, the pressure versus wind speed relationship remains unchanged for any given wind direction.

By requiring the reactor building pressure to remain within the limits presented in Figure 3.4.1 and a reactor building leakage rate of less than 1600 cfm, exfiltration would be prevented. This would assure that the leakage from the primary containment is directed through the filter system and discharged from the 350-foot stack.

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ATTACHMENT B

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Supporting Information and No Significant Hazards Consideration Analysis

BACKGROUND

The Reactor Building is designed to contain, with controlled in-leakage, the fission products released from the design basis loss of coolant accident or a fuel bundle drop during refueling. The Reactor Building is designed for a maximum in-leakage rate of 100% of the building volume per day at 0.25 inch of water internal vacuum and neutral wind conditions. For either accident, the Reactor Building Emergency Ventilation System (RBEVS) is designed to filter particulates and iodines prior to release via the stack to the environment. The RBEVS consists of a common supply header taking suction from the normal reactor building ventilation discharge before the inlet isolation valve, an electric heater (10 Kw) located on the common supply duct, a dual bank of filters for removal of particulates and iodines, a 1000-watt heater in each filter bank, a motor-driven fan in each bank, isolation valves at the supply and exhaust of each bank, and separate discharge duct work from each fan provided with independent flow nozzles and flow control instrumentation.

On March 29, 1992 it was determined that Surveillance Test N1-ST-C5, "Secondary Containment and Reactor Building Emergency Ventilation System Operability Test," did not meet Technical Specification surveillance requirements for Reactor Building leakage rate (Section 4.4.1). LER 92-06 was written to address the inconsistency between Technical Specifications and other design documents. Procedure N1-ST-C5 was revised to require the use of the more conservative 1600 cfm leakage rate. The proposed license amendment changes the design basis reactor building in-leakage from 2000 cfm to 1600 cfm for the RBEVS to address the corrective action of the LER.

DESCRIPTION OF PROPOSED CHANGES

The proposed change to Specification 3.4.1 and Bases is to replace 2000 cfm with 1600 cfm in the first paragraph of the Specification on page 165 and the last paragraph of the Bases on page 167, respectively.

EVALUATION

The leakage specifications for the Reactor Building are a maximum of 100% per day building volume in-leakage with the building at a negative differential pressure of 0.25 inch of water with respect to the outside, under zero or low wind velocity conditions. In performing this test, the building is completely isolated except for the outlet through the emergency ventilation system. The system is then placed in operation and the RBEVS flow adjusted to 1600 cfm. The building

differential pressure must be greater than -0.25 inches w.g. referenced to 0 mph wind speed. The rate at which air is exhausted through the system is a measure of building in-leakage and is being directly measured by a system flow indicator.

The reason for maintaining negative pressures inside the Reactor Building with the ventilation system in operation is to prevent the process of exfiltration from occurring. Exfiltration rates are affected by the differential pressure between the outside and the inside of the buildings, the wind speed, and the wind direction in relation to the building. It had been determined that for the worst case stack release, no building exfiltration can occur if a negative pressure of at least -0.0048 inches is maintained in the Reactor Building by the emergency ventilation fans. Exfiltration is a concern as it would result in an unfiltered, unmonitored ground level release to the environment. If the negative building pressure maintains low leakage rates, then this will result in low exfiltration rates even under high wind conditions.

Reactor Building Volume

Calculation S0.0-RX-VOL01, "Reactor Building Volume Calculation," Rev. 0, January 16, 1990 determined that the Reactor Building volume was 2,137,000 cubic feet of air space. The calculation accounted for floors, columns, rooms, major structures, etc., and it also allowed for a 10% volume reduction due to equipment, piping, and other miscellaneous items, not specifically addressed in the calculation. Based on this volume, an emergency ventilation fan flow rate of 1484 cfm would be necessary for one volume change in one day (24-hour period). Therefore, a leakage rate of 1600 cfm upon which the radiological analysis is based, now appropriate reflects the actual building volume.

Emergency Ventilation Filter Capacity

The filter banks for the Emergency Ventilation System have a rated flow of 1600 cfm to ensure proper efficiency. The flow rate limit is needed to allow for proper contact with the filter material. The control time or retention time of the air in the filter relate to a penetration which correlates to filter efficiency. The charcoal filters are designed for a dwell time or contact time of 0.3 sec. with 1600 cfm flow and with a filter bed depth of a minimum 2-1/8". The efficiency of both the HEPA and charcoal filters is addressed by Technical Specification 3.4.4/4.4.4, "Emergency Ventilation System."

All other components in the RBEVS are capable of handling 2000 cfm.

CONCLUSION

Niagara Mohawk proposes to revise the Reactor Building in-leakage from 2000 cfm to 1600 cfm based on Reactor Building and RBEVS design. The 2000 cfm Reactor Building in-leakage was a preliminary flow rate used to size the RBEVS. The equipment is rated/designed for that limit with the exception of the filters which have a design flow of 1600 cfm. The exhaust dampers limit the flow to approximately 1600 cfm based upon the controller settings. A building volume calculation establishes the free air space of the Reactor Building equivalent to a flow rate of less than 1500 cfm. Past tests have demonstrated building tightness at a pressure of 0.25 inches water gauge vacuum at flow rates less than 1600 cfm. Each train of the RBEVS is designed for

a minimum flow equal to one building volume air change per day at 0.25 inches water gauge vacuum: Surveillance Test Procedure N1-ST-C5, "Secondary Containment and Reactor Building Emergency Ventilation System Operability Test," limits flow to less than or equal to 1600 cfm.

Therefore, there is reasonable assurance that the operation of Nine Mile Point Unit 1 in the proposed manner will not endanger the public health and safety, and that issuance of the proposed amendment will not be inimical to the common defense and security.

NO SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

10CFR50.91 requires that at the time a licensee requests an amendment, it must provide to the Commission its analysis, using the standards in 10CFR50.92 concerning the issue of no significant hazards consideration. Therefore, in accordance with 10CFR50.91, the following analysis has been performed.

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Secondary containment and RBEVS are not initiators or precursors to an accident. Secondary containment provides a pressure boundary, with limited in-leakage, for the purpose of preventing a ground level unfiltered release of radioactivity. RBEVS responds to accidents involving release of radioactivity to the secondary containment by maintaining a negative pressure inside secondary containment and by providing an elevated release. Therefore, a change to the Reactor Building leakage rate cannot affect the probability of an accident previously evaluated.

Although the proposed change reduces the Reactor Building leakage rate from 2000 cfm to 1600 cfm consistent with system design, there is no effect on the radiological consequences of any previously analyzed accident since the radiological analysis does not assume exfiltration. Therefore, the Technical Specification change does not significantly increase the consequences of a previously evaluated accident.

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change to the Reactor Building leakage rate from 2000 cfm to 1600 cfm does not involve any accident precursors or initiators. During an accident involving a release of radioactivity to the secondary containment, the RBEVS would be operable and provide filtration of containment atmosphere prior to release to the environment. This change does not involve any physical modifications to the system, thus the system will operate as designed. Therefore, the proposed Technical Specification change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of Nine Mile Point Unit 1, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The proposed change in Reactor Building in-leakage from 2000 cfm to 1600 cfm in Specification 3.4.1 and the associated basis is to be consistent with system design and reflect the leakage rate associated with approximately one building air volume change per day. The resulting accident analysis remains unchanged since the radiological analysis does not assume any exfiltration. Therefore, the proposed change will not involve a significant reduction in the margin of safety as defined in the basis for any Technical Specification.

Therefore, as determined by the above analysis, this proposed amendment involves no significant hazards consideration.