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EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards status of NUREG-0737 Action Plan Items II.B.1, II.B.2,II.B.3,II.D.1,II.E.4.2,II.F.1.1,II.F.1.2,II.F.1.3, II.F.1.4,II.F.1.5,II.F.2,II.K.3.30 & II.K.3.31 to be completed by 820101.

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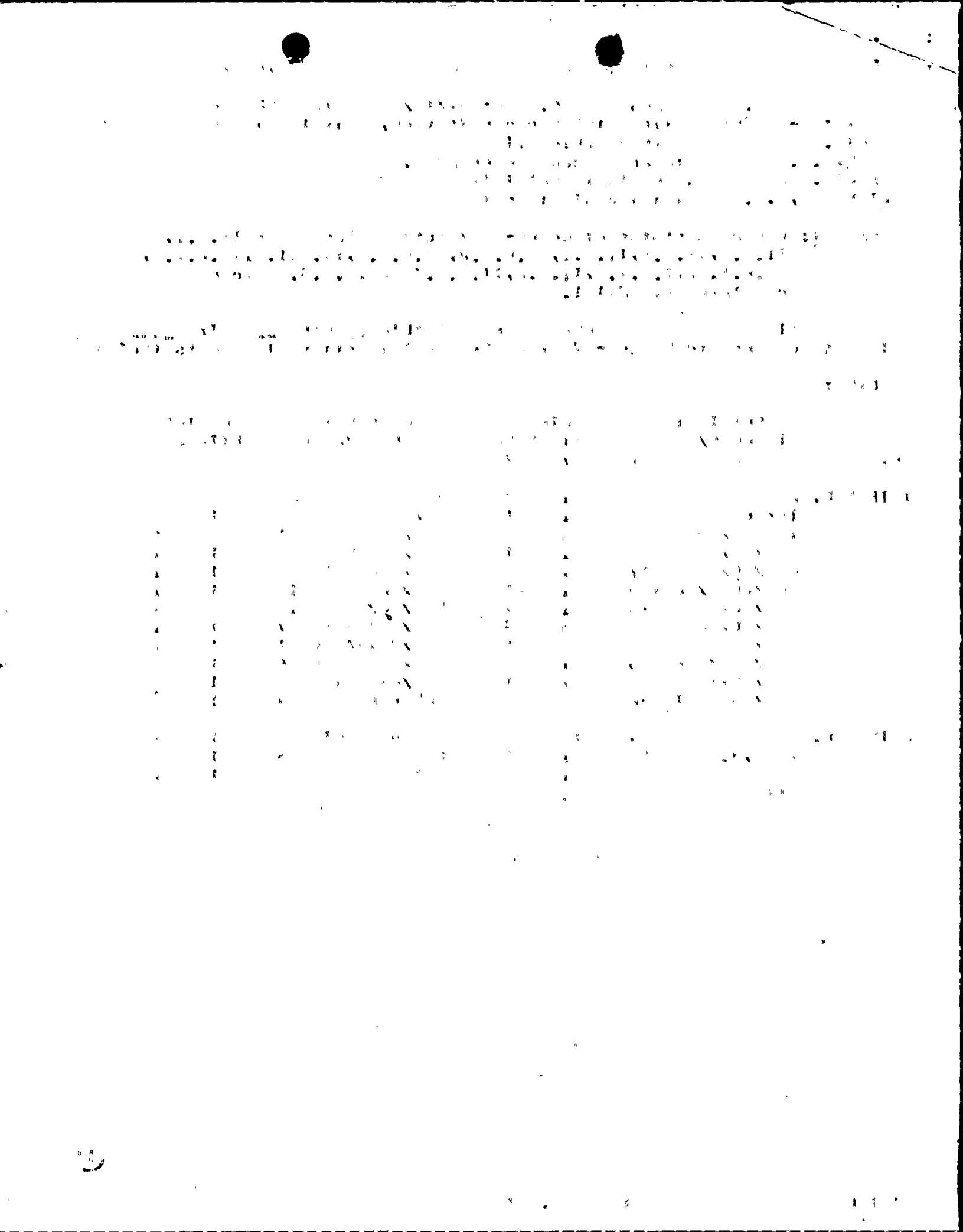
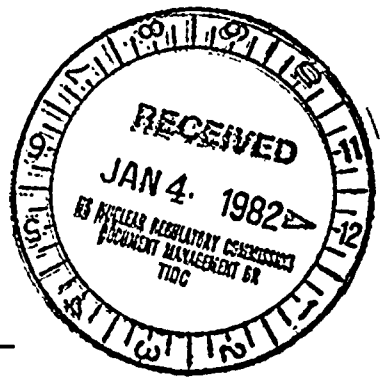


NIAGARA MOHAWK

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

December 31, 1981



Mr. Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Regulatory Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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

Dear Mr. Eisenhut:

The attached information provides the status of those NUREG 0737 Action Plan Items scheduled to be completed by January 1, 1982.

Very truly yours,

Donald P. Dise

Donald P. Dise
Vice President Engineering

RJP:bd
Attachment

A046
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NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNIT 1

DOCKET NO. 50-220

DPR-63

STATUS OF NUREG 0737 ACTION PLAN ITEMS

Requiring a January 1, 1982 Implementation Date

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ACTION PLAN ITEM II.B.1

REACTOR COOLANT SYSTEM VENTS

Our letter of March 31, 1981 provided a description of the modifications required to meet NUREG 0737, Item II.B.1, Reactor Coolant System Vents. These modifications include providing emergency power to the valves in the Reactor Head Vent System and a vent path from the emergency condensers to the torus by July 1, 1982. The modification to supply the valves in the Reactor Head Vent System with emergency power has been completed. The emergency condenser vent to torus modification will be completed by July 1, 1982, as required.

Your letter of September 17, 1981 indicated that the installation of the emergency condenser vents and procedures for operator use are required by July 1, 1982. However, as indicated in our letter of March 31, 1981 procedures for operator use cannot be developed until the procedure guidelines and supporting analysis for operator use of the vents are reviewed and approved by the NRC. This information was previously submitted to the NRC in accordance with NUREG 0737, Item I.C.1.

Therefore, in accordance with the implementation requirements for Item II.B.1, the required modifications will be completed by July 1, 1982. However, until staff approval is obtained, the procedures will not be implemented and the emergency condenser vent system will be placed in a condition so as to minimize the potential for inadvertent actuation.

ACTION PLAN ITEM II.B.2

DESIGN REVIEW OF PLANT SHIELDING AND ENVIRONMENTAL QUALIFICATION OF EQUIPMENT FOR SPACES/SYSTEMS WHICH MAY BE USED IN POST ACCIDENT OPERATIONS

Our letters of June 20, 1980 and September 17, 1980, transmitted the final results of the Nine Mile Point Unit 1 shielding design review required by NUREG 0737, Item II.B.2. Our previous letters indicated that the solenoids for air operated valves 201.2-03 and 201.2-32 in the N_2 purge system would be relocated due to the impracticality of shielding. This modification has been completed.

Our previous responses also indicated that emergency condenser level controllers 60-17 and 60-18 and the emergency condenser level transmitters IG-06A and IG-06B would be shielded to provide protection against excessive radiation damage. The level controllers are located in the control room and therefore do not require radiation shielding. Due to the impracticality of shielding, the level transmitters have been relocated.

Based on the aforementioned, Niagara Mohawk has met its requirements regarding NUREG 0737, Item II.B.2.

ACTION PLAN ITEM II.B.3

POST ACCIDENT SAMPLING CAPABILITY

As indicated by our letter of December 31, 1979, Nine Mile Point Unit 1 will utilize a newly installed Post Accident Sampling System for Reactor Coolant Sampling and the existing H_2-O_2 Containment Monitoring System for Containment Atmosphere Analysis and Sampling.

Currently the post accident sampling system is undergoing pre-operational testing. In addition, procedure reviews are underway to revise existing procedures with respect to sample collection, sample transfer and sample analysis. It is expected that the pre-operational testing and supporting procedures for reactor coolant sampling should be completed and in place by January 31, 1982. Sampling procedures are in effect for obtaining and transporting a containment atmosphere sample. As outlined below, upgraded containment atmosphere analysis capabilities will be available by June 30, 1982.

The information contained herein addresses the NRC clarifications outlined in NUREG 0737, Item II.B.3.

Clarification (1)

The licensee shall have the capability to promptly obtain reactor coolant samples and containment atmosphere samples. The combined time allotted for sampling and analysis should be 3 hours or less from the time a decision is made to take a sample.

Response:

A review has been performed with regard to the capability to sample reactor coolant and containment atmosphere. The results of this review were provided to NRC by letter dated October 20, 1981 to Mr. Ronald C. Haynes, Director USNRC Region I. In summary, the review indicates that both the Reactor Coolant and Containment Atmosphere Samples may be obtained in the prescribed time of three hours.

Clarification (2)

The licensee shall establish an onsite radiological and chemical analysis capability to provide, within the 3-hour time frame established above, quantification of the following:

(a) certain radionuclides in the reactor coolant and containment atmosphere that may be indicators of the degree of core damage (e.g., noble gases; iodines and cesiums, and nonvolatile isotopes);

(b) hydrogen levels in the containment atmosphere;

(c) dissolved gases (e.g., H_2), chloride (time allotted for analysis subject to discussion below), and boron concentration of liquids.

(d) Alternatively, have inline monitoring capabilities to perform all or part of the above analyses.

Response 2:

(a) As outlined and specifically limited in our October 20, 1981 letter, on site radiological analysis can be performed on reactor coolant samples utilizing existing equipment for sample collection. The specific limitations will no longer apply when the Post Accident Sampling system, including reactor coolant sample isolation valves, are operational. Upon dilution, the sample can be analyzed using a Geli detector. Using the source terms identifed in NUREG 0737, containment atmosphere analysis requires gaseous dilution on the order of 300 times with the current Geli detector and known detector/source geometries. Measures are currently under consideration to enhance the capabilities for isotopic analysis of the containment atmosphere. Implementation of an enhanced analysis capability to permit on site analysis of the containment atmosphere at activity levels consistent with NUREG 0737 source terms is expected by June 30, 1982.

(b) The existing H_2-O_2 Monitoring System has the capability to monitor hydrogen level in the containment atmosphere with remote readout available in the control room.

(c) Currently the capability to analyze for dissolved gases does not exist at the site. However, a gas chromatograph has been ordered for the purpose of analyzing dissolved gases. With respect to chloride analysis, the capability currently exists to analyze for chloride concentrations as low as 20 ppb. Under accident conditions, sample dilution would likely be required to minimize personnel exposure. Therefore, assuming dilution, analysis of chloride concentrations as low as 2 ppm would be possible. This sensitivity is considered adequate to provide the operator with sufficient information regarding chloride concentrations.

As stated in our December 31, 1979 response, there is no need to have the capability to analyze for boron in a boiling water reactor.

(d) The H_2-O_2 Monitoring System discussed above is an inline monitoring system.

Clarification (3)

Reactor coolant and containment atmosphere sampling during post-accident conditions shall not require an isolated auxiliary system [e.g., the letdown system, reactor water cleanup system (RWCUS)] to be placed in operation in order to use the sampling system.

Response:

The design of the reactor coolant and containment atmosphere sampling systems does not require the use of an auxiliary system to obtain a sample. Reactor coolant samples are obtained directly from the reactor primary system by a sample line connected to the reactor recirculation system. Containment atmosphere samples are obtained directly from containment by a sample line supplying the H_2-O_2 Monitoring System.

Clarification (4)

Pressurized reactor coolant samples are not required if the licensee can quanitfy the amount of dissolved gases with unpressurized reactor coolant samples. The measurement of either total dissolved gases or H_2 gas in reactor coolant samples is considered adequate. Measuring the O_2 concentration is recommended, but is not mandatory.

Response:

A gas chromatograph has been placed on order for the purpose of analyzing dissolved gases including H_2 and O_2.

Clarification (5)

The time for a chloride analysis to be performed is dependent upon two factors: (a) if the plant's coolant water is seawater or brackish water and (b) if there is only a single barrier between primary containment systems and the cooling water. Under both of the above conditions the licensee shall provide for a chloride analysis within 24 hours of the sample being taken. For all other cases, the licensee shall provide for the analysis to be completed within 4 days. The chloride analysis does not have to be done onsite.

Response:

Since Nine Mile Point Unit 1 does not utilize seawater or brackish water for plant coolant, four days are allowed by this clarification for chloride analysis. As indicated above, onsite capability exists for measuring chloride concentration with a sensitivity of 2 ppm during accident conditions within four days.

Clarification (6)

The design basis for plant equipment for reactor coolant and containment atmosphere sampling and analysis must assume that it is possible to obtain and analyze a sample without radiation exposures to any individual exceeding the criteria of GDC 19 (Appendix A, 10 CFR Part 50) (i.e., 5 rem whole body, 75 rem extremities). (Note that the design and operational review criterion was changed from the operational limits of 10 CFR Part 20 (NUREG-0578) to the GDC 19 criterion (October 30, 1979 letter from H.R. Denton to all licensees).)

Response:

As outlined in our letter of October 20, 1981, containment atmosphere samples could be obtained within the radiation exposure limits stated above. Additionally, the exposure that would be received using the existing reactor coolant sample sink would not exceed the limits referenced above provided a flow path can be established prior to postulated fuel damage. Utilization of the newly installed Post-Accident Sampling System will minimize personnel exposure for sample procurement.

As indicated in our response to Clarification 2(a) above, analysis of the reactor coolant samples can be performed using the Geli detector. However, modifications will be required to perform analysis of the containment atmosphere assuming activity levels consistent with NUREG 0737 source terms.

Clarification (7)

The analysis of primary coolant samples for boron is required for PWRs (Note that Revision 2 of Regulatory Guide 1.97, when issued, will likely specify the need for primary coolant boron analysis capability at BWR plants.)

Response:

As indicated in our response to Clarification 2(c) above, there is no need to have the capability to analyze for Boron in a boiling water reactor.

Clarification (8)

If inline monitoring is used for any sampling and analytical capability specified herein, the licensee shall provide backup sampling through grab samples, and shall demonstrate the capability of analyzing the samples. Established planning for analysis at offsite facilities is acceptable. Equipment provided for backup sampling shall be capable of providing at least one sample per day for 7 days following onset of the accident and at least one sample per week until the accident condition no longer exists.

Response:

Except for H_2 monitoring, inline monitoring will not be utilized at Nine Mile Point Unit 1 for post accident sampling. The H_2-O_2 monitoring system has backup capability to obtain a grab sample. The gas chromatograph referenced above will be used for analysis of H_2 in containment samples.

Clarification (9)

The licensee's radiological and chemical sample analysis capability shall include provisions to:

(a) Identify and quantify the isotopes of the nuclide categories discussed above to levels corresponding to the source terms given in Regulatory Guide 1.3 or 1.4 and 1.7. Where necessary and practicable, the ability to dilute samples to provide capability for measurement and reduction of personnel exposure should be provided. Sensitivity of onsite liquid sample analysis capability should be such as to permit measurement of nuclide concentration in the range from approximately 1 uCi/g to 10 Ci/g.

(b) Restrict background levels of radiation in the radiological and chemical analysis facility from sources such that the sample analysis will provide results with an acceptably small error (approximately a factor of 2). This can be accomplished through the use of sufficient shielding around samples and outside sources, and by the use of ventilation system design which will control the presence of airborne radioactivity.

Response 9:

(a) See response to clarification 2(a) above.

(b) The background levels of radiation in the radiological and chemical analysis facility (laboratory area) will be restricted by the use of the laboratory area ventilation system. This system will control the presence of airborne radioactivity by the following design features:

1. The laboratory area ventilation system has been modified to provide a dedicated source of outside air in the event of a loss of outside air.

2. The laboratory ventilation system has its own fans consisting of a supply fan and supply booster fan in series.

3. There is a HEPA filter in the supply duct to the counting room.

4. The fans are powered from an emergency power source.

5. The current installation has the laboratory area ventilation system discharging to the turbine building ventilation system prior to discharge to the stack. Currently, the turbine building ventilation is not powered from an emergency power source. This design feature will be evaluated and the results of that evaluation and any proposed modification required, will be furnished to the NRC by April 1, 1982.

Clarification (10)

Accuracy, range, and sensitivity shall be adequate to provide pertinent data to the operator in order to describe radiological and chemical status of the reactor coolant systems.

Response:

The radiological and chemical sampling and analysis provisions will be sufficient to provide the required data to the operator regarding the radiological and chemical status of the reactor coolant system.

Clarification (11)

In the design of the post accident sampling and analysis capability, consideration should be given to the following items:

(a) Provisions for purging sample lines, for reducing plateout in sample lines, for minimizing sample loss or distortion, for preventing blockage of sample lines by loose material in the RCS or containment, for appropriate disposal of the samples, and for flow restrictions to limit reactor coolant loss from a rupture of the sample line. The post accident reactor coolant and containment atmosphere samples should be representative of the reactor coolant in the core area and the containment atmosphere following a transient or accident. The sample lines should be as short as possible to minimize the volume of fluid to be taken from containment. The residues of sample collection should be returned to containment or to a closed system.

(b) The ventilation exhaust from the sampling station should be filtered with charcoal adsorbers and high-efficiency particulate air (HEPA) filters.

Response 11:

(a) Provisions for purging sample lines has been incorporated in the design of the post accident sample system.

(b) The ventilation exhaust from the sampling station is filtered with charcoal adsorbers and HEPA filters.

The current installation has the Post-Accident Sampling System ventilation exhaust discharging to the turbine building ventilation system prior to discharge via the stack. Currently, turbine building ventilation is not powered from an emergency power source. This design feature will be evaluated and the results of that evaluation and any proposed modification required, will be furnished to the NRC by April 1, 1982.

ACTION PLAN ITEM II.D.1

PERFORMANCE TESTING OF BOILING WATER REACTOR AND PRESSURIZED WATER REACTOR RELIEF AND SAFETY VALVES

Our letter of September 30, 1981 indicated that we were reviewing the design of the High Pressure Coolant Injection system (Feedwater System Control) at Nine Mile Point Unit 1 to assure that a single failure would not result in overfilling the reactor vessel with water. This review was to be completed and the results provided to you by December 31, 1981.

Our review and evaluation has not been completed. We are currently evaluating a number of options including modifying the existing control system or installing a new upgraded control system. Our evaluation should be completed and the results provided to you by April 1, 1982.

ACTION PLAN II.E.4.2

CONTAINMENT ISOLATION DEPENDABILITY

Our letters of January 30, 1981 indicated that automatic isolation valves would be installed on two lines by March 1, 1982. These lines include the sample line to the reactor recirculation line and the suppression chamber pump down line. These valves were being installed in response to a commitment regarding Inspection and Enforcement Bulletin 79-08. Installation and preoperational testing of these valves will be completed by March 1, 1982.

In our letter of December 31, 1980 we committed to providing automatic isolation of the containment purge and vent valves on high radiation by January 1, 1982. However, as outlined in our letter of June 30, 1981, an assessment performed by the BWR Owners Group indicated that automatic isolation was not necessary. Therefore, Niagara Mohawk revised its previous commitment to provide automatic isolation.

Therefore, until otherwise informed by the NRC, Niagara Mohawk does not intend to provide automatic isolation of the containment purge and vent valves on high radiation.

ACTION PLANT ITEMS II.F.1.1 and II.F.1.2

NOBLE GAS EFFLUENT MONITOR AND SAMPLING AND ANALYSIS OF PLANT EFFLUENTS

As indicated in our letter of September 22, 1981, Niagara Mohawk will install the radioactive gaseous effluent monitoring system designed and supplied by Science Applications, Inc. This system will perform an on-line isotopic analysis of radioactive effluents including particulate, iodine and noble gas. This modification will be completed by January 1, 1983.

Based on the above, Niagara Mohawk will not be implementing the final design modifications for the noble gas monitor and iodine particulate sampling described in our submittals of March 31, 1981 and December 31, 1980 respectively. The following interim measures will continue to be implemented until the final modifications are completed.

NOBLE GAS MONITOR

A portable gamma survey instrument has been installed such that it will monitor a portion of the sample line to the existing stack monitors. Background radiation is shielded by means of a lead cave built around the detector. Readings on this interim monitor will be taken locally and the results verbally communicated to the main control room. Communication will be by means of a headset and will be taken approximately every fifteen minutes when required. This method would be used only in a case where the existing monitors were off-scale (high).

SAMPLING AND ANALYSIS OF PLANT EFFLUENTS

Niagara Mohawk's previous submittals of December 31, 1979 and December 31, 1980 indicated that the sample holder for the charcoal canister and particulate filter would be modified and if necessary remote handling tools and lead pigs would be used so that highly radioactive samples could be removed. Since these modifications did not prove to be practical, we are installing the Science Application, Inc. system to provide the capability for continuous on-line iodine and particulate analysis as described above. Therefore, there are no interim measures for the sampling and analysis of iodine and particulate during accident conditions. However, the results of our evaluation of our ability to accurately detect and measure iodine and particulates indicate that there should be no exposure problem for stack sampling and monitoring during a loss of coolant accident if no drywell purge is required. If a drywell purge is required at 30 minutes, our evaluation indicates that no samples can be drawn during this period.

ACTION PLAN ITEM II.F.1.3

CONTAINMENT HIGH-RANGE RADIATION MONITOR

Our letter of December 31, 1980 provided a description of the modification to be performed to meet the requirements of NUREG 0737, Item II.F.1.3. These modifications have been completed with the exception of the installation of the detectors and associated electronics which are undergoing calibration. The calibration should be completed by January 31, 1982.

Upon completion of the calibration, Niagara Mohawk will have met its requirements regarding NUREG 0737, Item II.F.1.3.

ACTION PLAN ITEM II.F.1.4

CONTAINMENT PRESSURE MONITOR

As indicated in our September 23, 1981 letter, the Containment Pressure Monitor Design Modification described in our December 31, 1980 submittal has been completed.

Based on the aforementioned, Niagara Mohawk has met its requirements regarding NUREG 0737, Item II.F.1.4.

ACTION PLAN ITEM II.F.I.5

CONTAINMENT WATER LEVEL MONITOR

Our letter of December 31, 1980 provided a description of the modifications to be performed to meet the requirements of NUREG 0737, Item II.F.1.5. These modifications have been completed.

Based on the aforementioned, Niagara Mohawk has met its requirements regarding NUREG 0737 Item II.F.1.5.

ACTION PLAN ITEM II.F.2

INSTRUMENTATION FOR DETECTION OF INADEQUATE CORE COOLING

Our letter of February 9, 1981 provided a description of the modifications to be performed to meet the requirements of NUREG 0737, Item II.F.2. These modifications have been completed, however, the pre-operational testing has not been completed. Pre-operational testing should be complete by January 31, 1982.

Upon completion of the pre-operational testing, Niagara Mohawk will have met its requirements regarding NUREG 0737, Item II.F.2.

ACTION PLAN ITEMS II.K.3.30 and II.K.3.31

REVISED SMALL-BREAK LOSS-OF-COOLANT-ACCIDENT METHODS TO SHOW COMPLIANCE WITH 10 CFR PART 50, APPENDIX K AND PLANT-SPECIFIC CALCULATIONS TO SHOW COMPLIANCE WITH 10 CFR PART 50.46.

General Electric's letter of June 26, 1981 transmitted the final program results related to NUREG 0737, Item II.K.3.30. In summary, that letter indicated that the existing General Electric small break Loss-of-Coolant-Accident model satisfies the concerns of NUREG 0626 and is in compliance with 10 CFR 50 Appendix K. Therefore, no model changes are required. Loss-of-Coolant-Accident Analyses for Nine Mile Point Unit 1 are performed with the General Electric model.

Based on the aforementioned, Niagara Mohawk has met its requirements regarding NUREG 0737, Items II.K.3.30 and II.K.3.31.