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June 12, 1979

Mr. Harold R. Denton, Director
Division of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. A. Schwencer, Chief
Operating Reactors Branch #1

Gentlemen:

POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-266 AND 50-301
NOBLE GAS EFFLUENT MONITORING SYSTEM

This is in response to the questionnaire telecopied to us by your office on June 7, 1979. The questionnaire is included herewith as Attachment 1.

Our responses are provided in Attachment 2. Further information is available in Section 11 and Appendix I of the Point Beach Nuclear Plant Final Facility Description and Safety Analysis Report.

Very truly yours,

Sol Burstein

Executive Vice President

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Attachment 1

QUESTIONNAIRE TELECOPIED BY NRC ON JUNE 7, 1979

Because of the experience during the TMI-2 accident, where certain gaseous effluent (noble gas) monitors pegged high and did not follow the concentration levels of effluents released during the course of the accident, NRC has committed to provide Congress with data on these monitors now being used at operating nuclear power plants. Given below are questions with respect to your currently employed systems for monitoring noble gas gaseous effluents. Your responses to these questions should describe the capability of all plant noble gas gaseous effluent monitoring systems to quantify the release of radioactive material from principal release points during normal and accident conditions, as well as their function for automatic isolation and/or alarm.

This data may be published in an NRC NUREG document.

QUESTIONS FOR EACH NOBLE GAS GASEOUS

EFFLUENT MONITORING SYSTEM

1) Location of the effluent monitor, monitoring system (i.e., principal release point, building ventilation exhaust point)

2) What detector is being used (e.g., G.M., plastic scintillator, NaI)

3) Readout range of detector (minimum/maximum cpm)

4) Maximum release rate that can be detected on-scale by the detector (Ci/sec)

5) Calibration Factor for system (cpm per $\mu Ci/cm^3$)

6) Reference radionuclide used to calibrate system (e.g., ^{85}Kr, ^{133}Xe)

7) Alarm setpoint for system (cpm or $\mu Ci/cc$)

8) Alarm function of system (e.g., isolation of purge, alarm in control room, etc.)

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Attachment 2

POINT BEACH NUCLEAR PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-266 AND 50-301
NOBLE GAS EFFLUENT MONITORING SYSTEM

MONITOR & LOCATION	DETECTOR TYPE	READOUT RANGE (CPM)	MAX REL RATE ON SCALE (Ci/sec)	CALIB CONST[h] (CPM per μCi/cc)	ALARM SET (CPM & μCi/cc)	ALARM FUNCTION[c]
R-14 (Aux. Bldg)	GM in-line[a]	10^1 - 10^6	2.9E-2	1.5E9 to 3.2E9[b]	3K 1.3E-6	Secures gas decay tank discharge; routes aux. bldg. effluent through charcoal filter.
R-21 (Drum. Area)	GM in-line[a]	10^1 - 10^6	1.3E-2	3.7E9 to 1.6E10[b]	4K 5.7E-7	none[c]
GW-112 (Gas Stripper)	GM in-line[a]	10^1 - 10^6	6.1E-2	9.1E7	10K 1.0E-4	none[c]
CR-9[d] (CAE duct)	Beta scintillator in-line	10^1 - 10^6	8.9E-3 to 3.1E-2[e]	1.1E-6	8K 7.8E-3	none[c]
1R15[d] (U1 SAE)	GM in-line	10^1 - 10^6	4.7E-4 to 1.7E-3[f]	8.7E7 to 3.3E8[b]	50K 1.6E-2	none[c]
2R15[d] (U2 SAE)	GM in-line	10^1 - 10^6	4.7E-3 to 1.7E-2[f]	5.9E6	0.4K 7.0E-5	none[c]
1R12 (U1 Containment)	GM shielded, off-line	10^1 - 10^6	1.1[g]	1.2E7 to 1.0E8[b]	3K 1.0E-4	Closes purge valves[c]
2R12 (U2 Containment)	GM shielded, off-line	10^1 - 10^6	1.2[g]	1.0E7	1K 1.0E-4	Closes purge valves[c]

[a] Shielded, background compensated, off-line monitors are being added at these points. Installation is expected to be completed by the fall of 1979.

[b] The response of these monitors is non-linear. The calibration factors at each end of the range are given.

[c] All monitors listed give a visual and an audible alarm in the control room. Only additional functions are listed in the table.

[d] CR9 (combined air ejector duct) is upsteam of 1R15 and 2R15, which are the monitors for the individual unit air ejectors.

[e] Depending on flow rate which ranges from 20-70 cfm.

[f] Depending on flow rate which ranges from 10-35 cfm.

[g] Flow rate is 25,000 cfm.

[h] Calibration is done with mixed coolant gases obtained from the letdown gas stripper.

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