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SUBJECT: Forwards revised response to Section 6, Suppl 1 to
 NUREG-0737, "Regulatory Guide 1.97 - Application to
 Emergency Response Facilities," per 870512 ltr.

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October 5, 1987
NMPIL 0190

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

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

Gentlemen:

In our letter of May 12, 1987, Niagara Mohawk committed to revise and resubmit our response to Section 6 of Supplement 1 to NUREG-0737 regarding "Regulatory Guide 1.97 - Application to Emergency Response Facilities." The attached document provides the revised information.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION



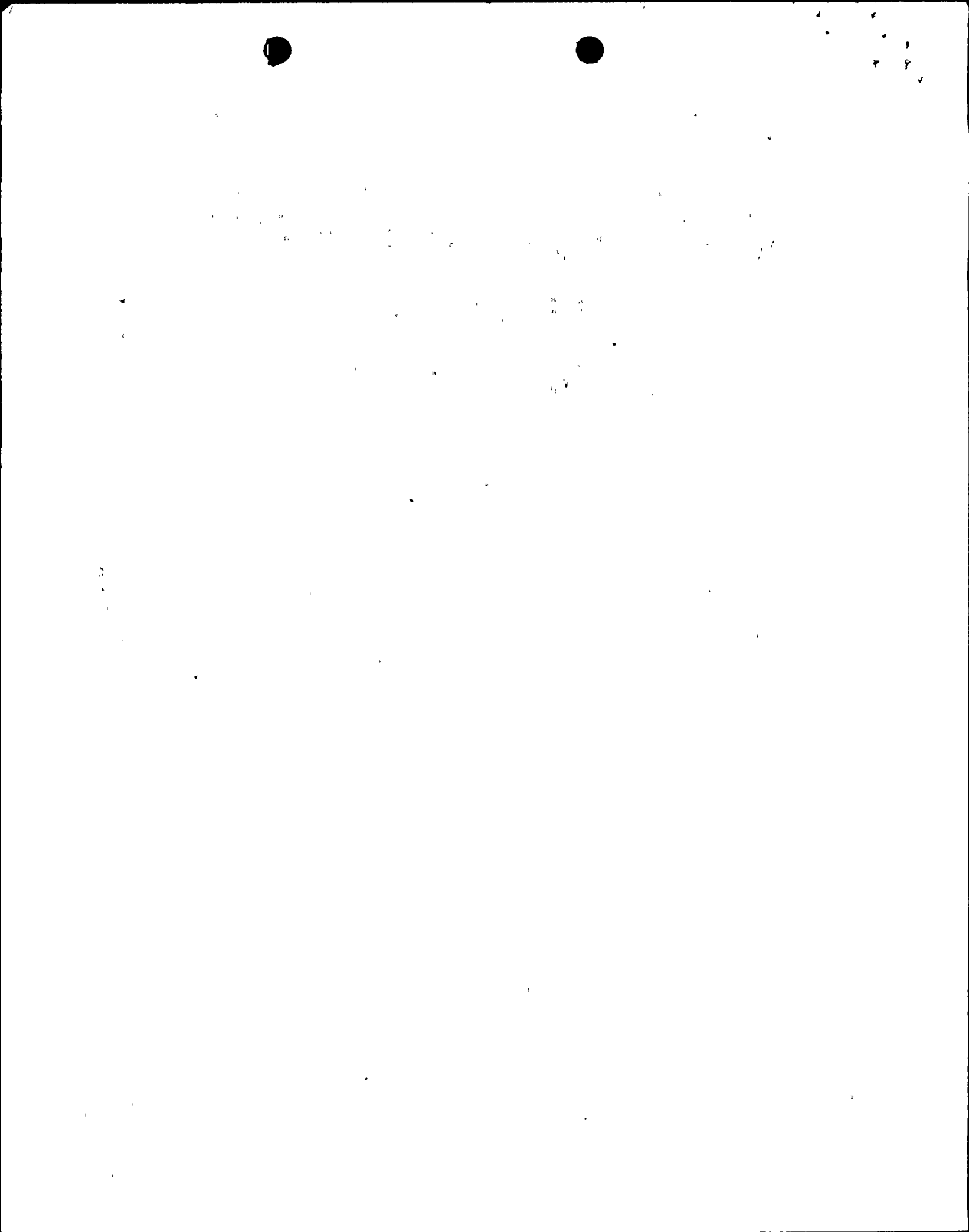
T. E. Lempges
Vice President - Nuclear Generation

KBT/pns
3534G
Attachment

xc: Regional Administrator, Region I
Mr. R. A. Capra, Director
Mr. R. A. Benedict, Project Manager
Mr. W. A. Cook, Resident Inspector

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PDR

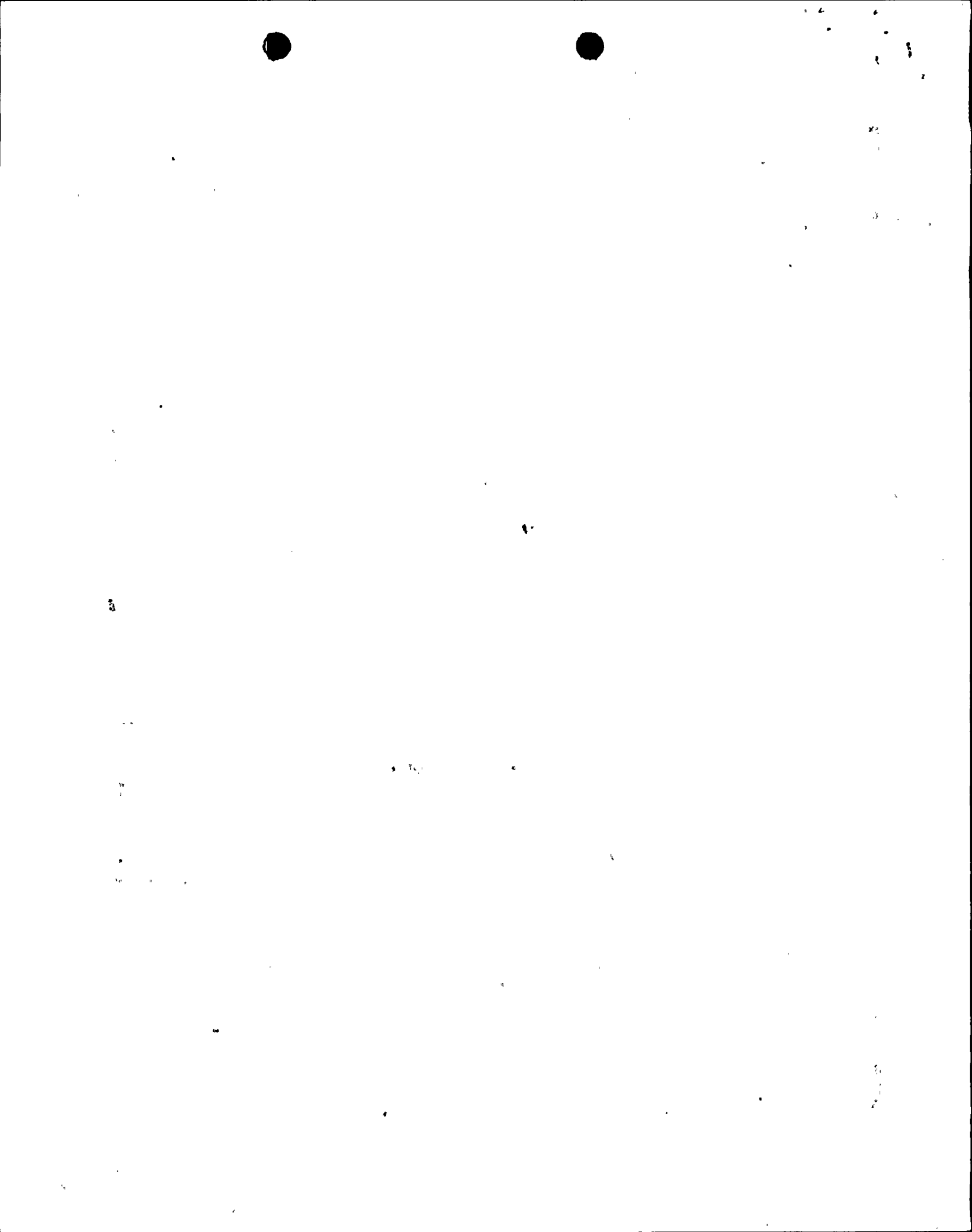
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Response to Section 6 of Supplement 1 to NUREG-0737
"Regulatory Guide 1.97 - Application to Emergency Response Facilities"

Niagara Mohawk Power Corporation

October 5, 1987



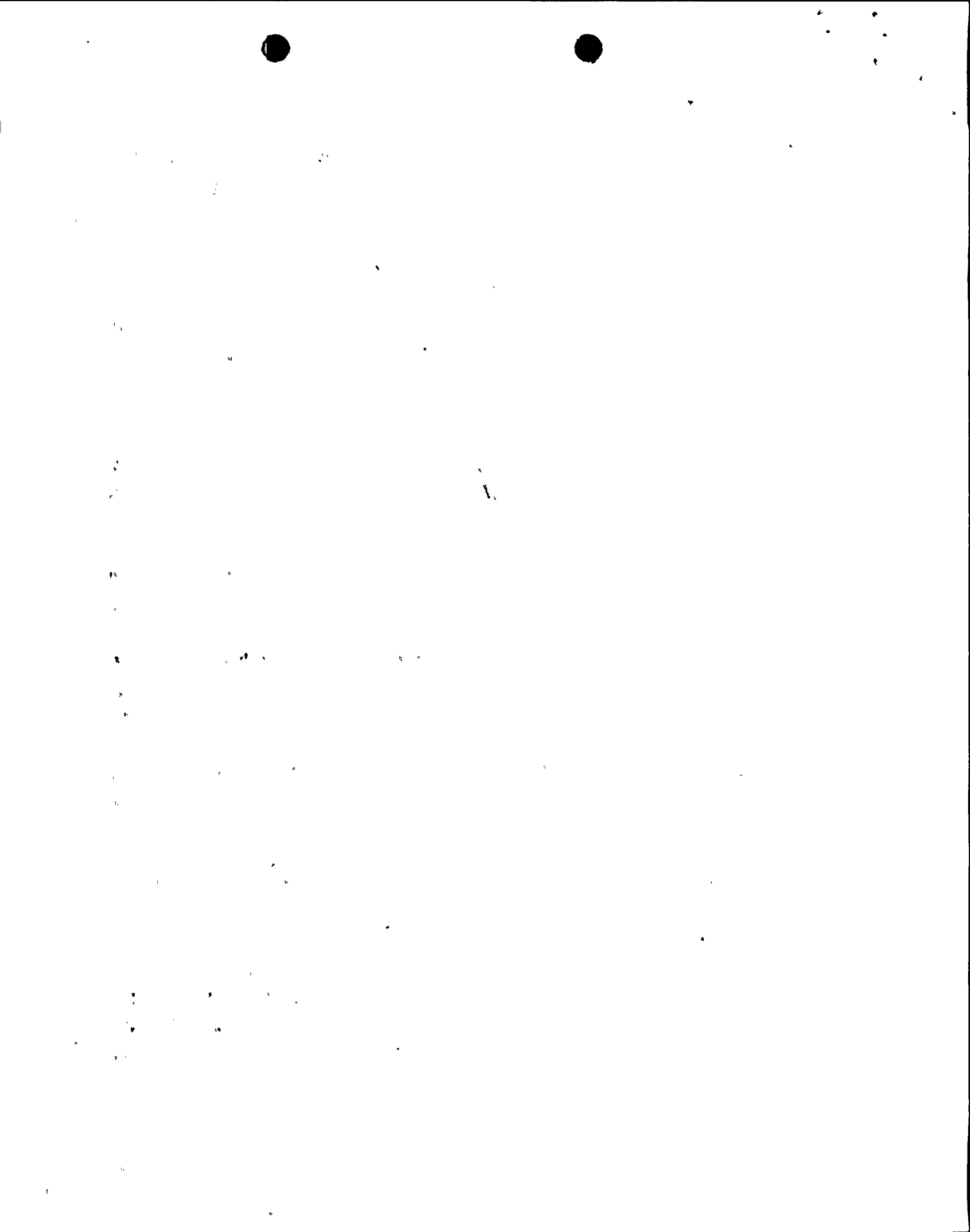
Introduction

Supplement 1 to NUREG-0737 contains guidance on the application of Regulatory Guide 1.97 to Emergency Response Facilities. The guidance contains recommendations on information that should be available in the Control Room, Technical Support Center, and Emergency Operations Facility. Niagara Mohawk reviewed the Nine Mile Point Unit 1 station for compliance with the guidance of Supplement 1 to NUREG-0737 in 1984. This revision updates the previous submittals dated April 2, 1984 and October 18, 1985 to address display devices in the control room and to designate plant specific type A variables. This revision is consistent with the conclusions of the NRC Safety Evaluation dated November 19, 1986.

1. Supplement 1 to NUREG-0737 Criterion - Control Room

Provide measurements and indication of Type A, B, C, D and E variables listed in Regulatory Guide 1.97 (Rev. 2). Individual licensees may take exceptions based on plant specific design features. BWR incore thermocouples and continuous off-site dose monitors are not required pending their further development and consideration as requirements. It is acceptable to rely on currently installed equipment if it will measure over the range indicated in Regulatory Guide 1.97 (Rev. 2), even if the equipment is presently not environmentally qualified. Eventually, all the equipment required to monitor the course of an accident would be environmentally qualified in accordance with the pending Commission rule on Environmental Qualification.

Provide reliable indication of the meteorological variables (wind direction, wind speed and atmospheric stability) specified in Regulatory Guide 1.97 (Rev. 2) for site meteorology. No changes in existing meteorological monitoring systems are necessary if they have historically provided reliable indication of these variables that are representative of meteorological conditions in the vicinity (up to about ten miles) of the plant site. Information on meteorological conditions for the region in which the site is located shall be available via communications with the National Weather Service. These requirements supersede the clarification of NUREG-0737 Item III.A.2.2.



Response

The attached summary tables provide information regarding the variables listed in Regulatory Guide 1.97 and the criteria listed in Section 6.2 of Supplement 1 to NUREG-0737.

Type A Variable

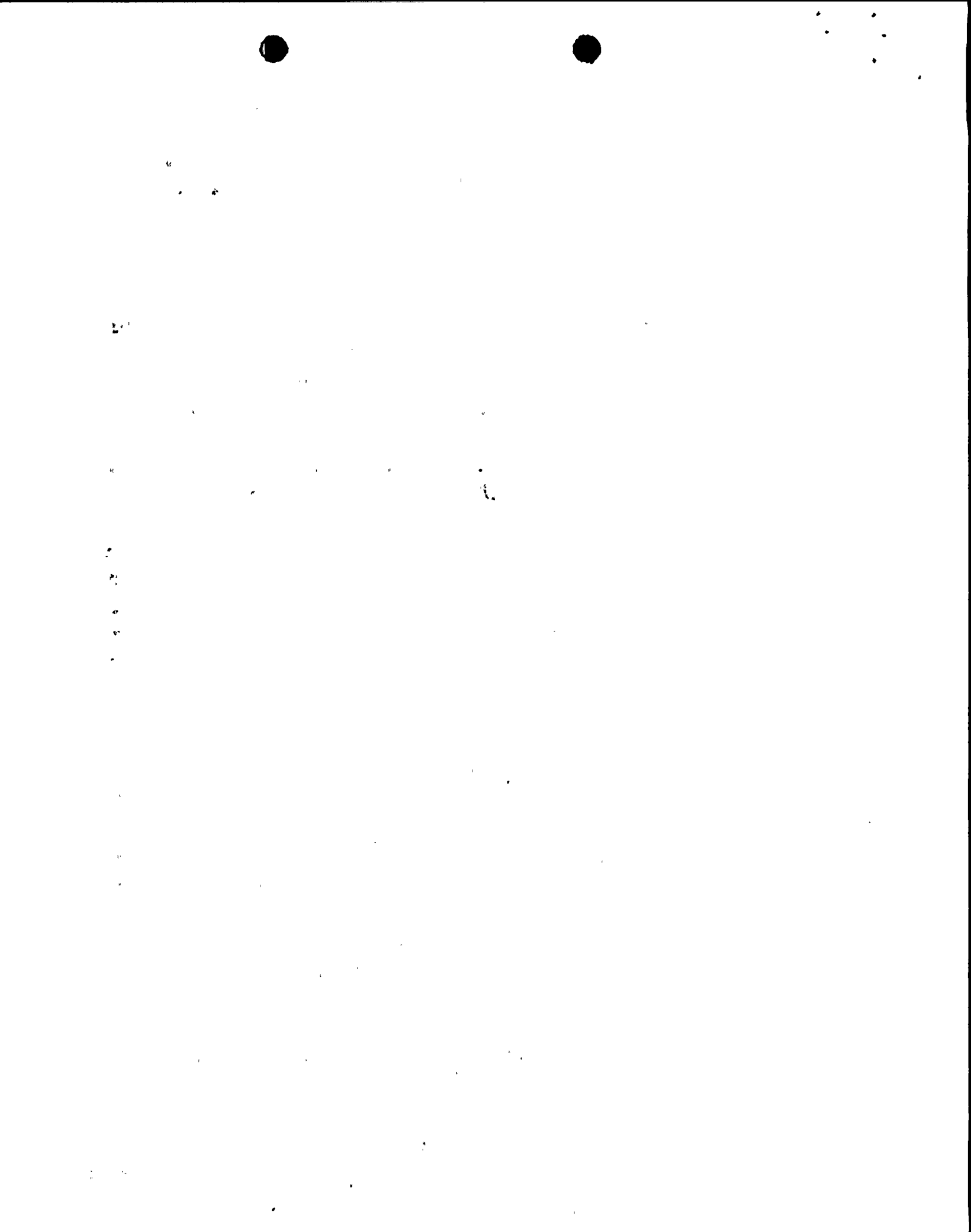
Plant specific Type A variables have been developed from the critical parameters identified in the plant specific Emergency Operating Procedures (EOPs). These variables are provided in the Control Room and meet the Category 1 criteria. The Type A variables are: reactor coolant level, reactor pressure, drywell pressure, drywell temperature, suppression pool water level, suppression pool water temperature, containment hydrogen concentration, and containment oxygen concentration.

Four other potential Type A variables were evaluated by NMPC. The results of this evaluation are summarized below.

Two of these four variables (Condensate Storage Tank Level & Emergency Diesel Generator Load) do not apply because the consideration/action involved does not exist for NMP-1.

The third potential Type A variable, suppression pool pressure, is incorporated for use in the EOP's by using primary containment pressure and a conservative relationship between the drywell and the wetwell during Design Basis Accidents. Primary containment pressure was also previously listed and shown to meet Category 1 criteria as a Type C variable.

The fourth potential Type A variable is the sump level in the four reactor building corner rooms where the core and containment spray pumps are located. A high energy line break outside the containment could result in water accumulating in these rooms.

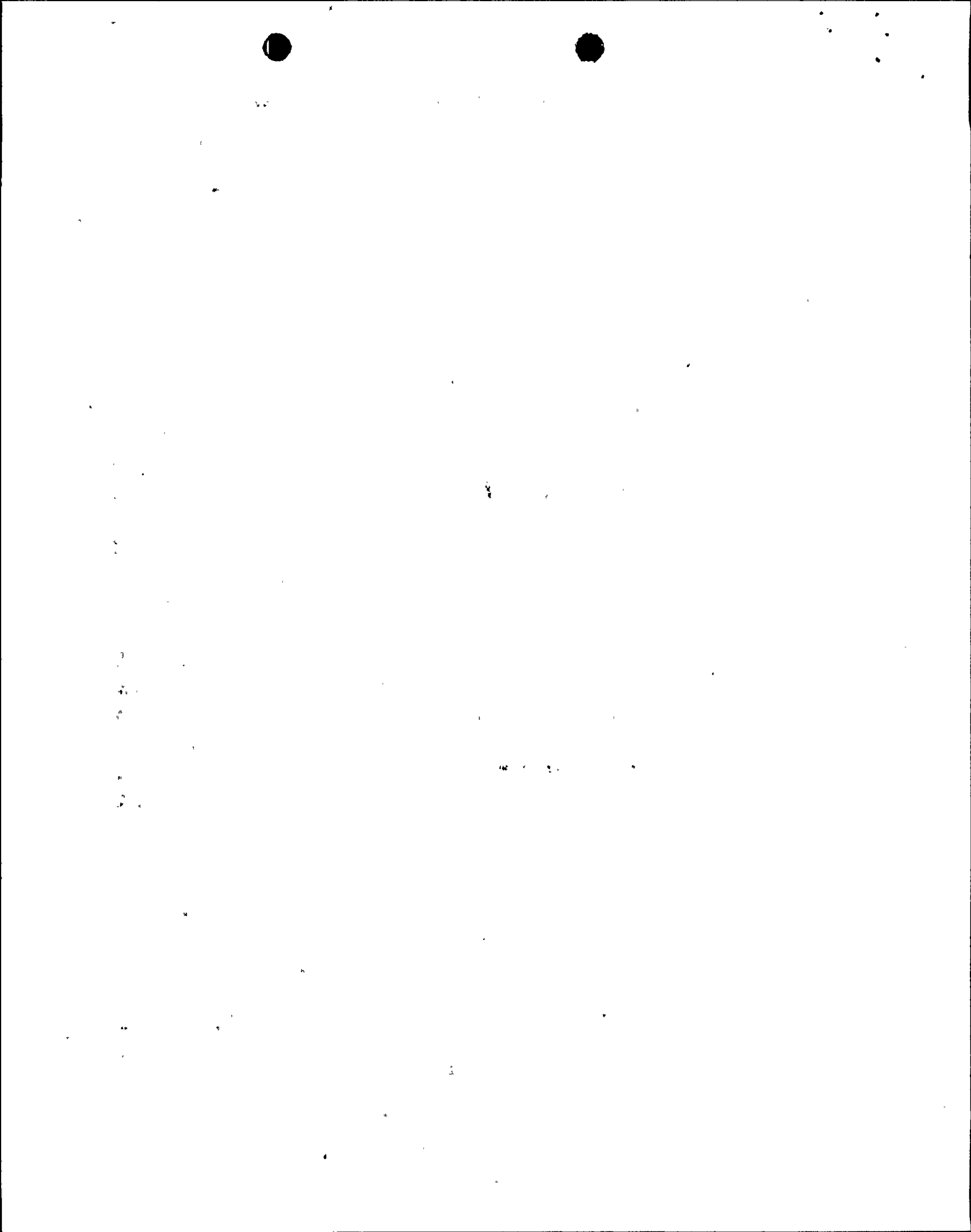


However, the Design Basis Accident that would cause flooding in these locations is a break in one of three different sets of lines; the Main Steam Lines, Primary Coolant Cleanup System lines, and the Emergency Condenser Lines. All other lines penetrating the containment are either not connected to high energy sources or return to and are considered a part of the containment structural boundary. Since the Main Steam Lines traverse the reactor building through a steam tunnel, a main steamline break would not affect these sumps. Thus, the high energy line breaks that might affect the sumps would occur in the Primary Coolant Cleanup System and Emergency Condenser Lines. Leak detection instruments are provided for these systems which automatically generate signals to close isolation valves in these lines within 40 seconds. This instrumentation is part of the Reactor Protection System. The automatic actuation of these isolation valves would indicate and annunciate in the Control Room.

These high energy lines are in locations different, vertically and laterally, from the corner rooms being considered. However, since these rooms are open to the Reactor Building, it is possible that water would run down and traverse through connecting floors and spaces and collect in the sumps. Studies carried out as part of NMPC's Environmental Qualification (EQ) Program for NMP-1 show that even if all the water released within the maximum allowable closing time for these isolation valves accumulated in one room, the water would not rise to the level of the ECCS equipment in these corner rooms.

Besides the automatic actuation of the isolation valves, there are numerous other redundant indications to alert an operator to the accident condition. These include:

- High level alarm from any of the four sumps which actuate an annunciator in Control Room,
- Local indicating lights for operation of each of the sump pumps,



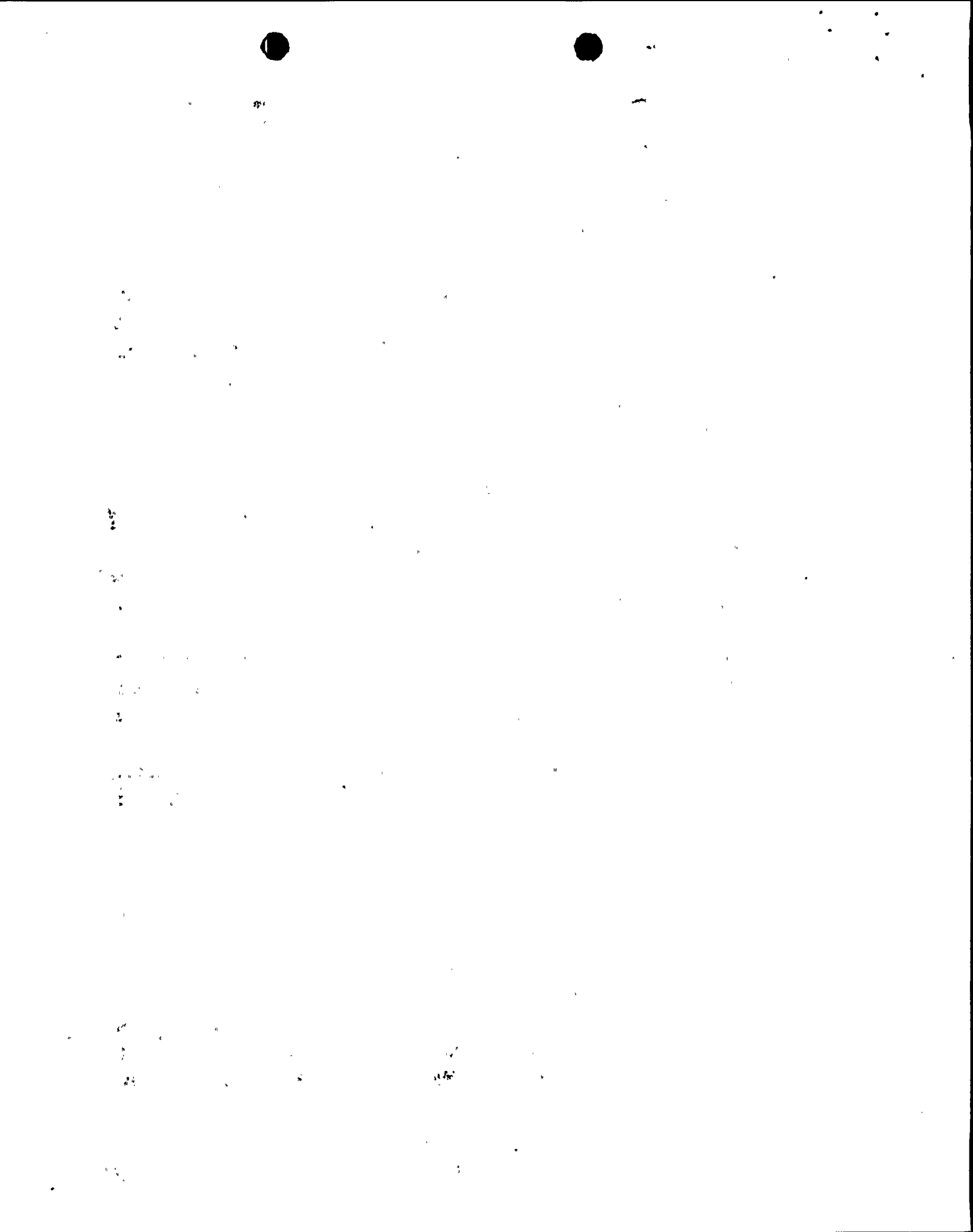
- Area Radiation Monitors which actuate an annunciator in the Control Room,
- Continuous Air Monitors, which alarm in the Control Room,
- Area Temperature Detectors, which alarm in the Control Room, and
- Indication in the Control Room of automatic initiation of the Emergency Ventilation System.

All of these indications would likely result from the high radiation in the primary cooling system water being released, or from the steam/water accumulating in the reactor building. These would be verified by operators in various parts of the Reactor Building since the corner rooms are not isolated from the rest of the building. Although these indicators would not meet Category 1 criteria in all cases, there is ample redundancy for various postulated situations.

Supplemental Information

The attached tables pertain to the information available to the operator from the control panels. The tables only address the variables defined in Regulatory Guide 1.97. However, additional sources of information are available. These sources include the plant process computer, locally mounted displays (if accessible), the annunciator/alarm system and other displays of information not contained within the scope of Regulatory Guide 1.97.

The plant process computer provides the operator with a sequence of event log, a post-trip log and an alarm history. These reports are generated automatically when an event is triggered. A more detailed description of these computer capabilities is contained in our November 8, 1983 submittal regarding Generic Letter 83-28. The computer also provides information via a graphics display system, which includes three cathode ray tubes located behind the main operator's console. The graphics display system incorporates the



Safety Parameter Display System, an Alarm Display, and a Large Value Display. These displays are described in our January 3, 1984 and June 13, 1986 letters regarding the Safety Parameter Display System.

Meteorological Data

As noted in our letter, meteorological variables specified in Regulatory Guide 1.97 are currently displayed in the Control Room. Chart recorders provide information pertaining to wind speed, wind direction, and atmospheric stability. National Weather Service data is currently obtained from Weather Services International (WSI). This data is available in the Control Room via communication with the Technical Support Center, Emergency Operations Facility or directly with WSI.

2. Supplement 1 to NUREG-0737 Criterion - Technical Support Center (TSC)

The Type A, B, C, D and E variables that are essential for performance of TSC functions shall be available in the TSC.

- i) BWR incore thermocouples and continuous off-site dose monitors are not required pending their further development and consideration as requirements.
- ii) The indicators and associated circuitry shall be of reliable design but need not meet Class 1E, single failure or seismic qualification requirements.

Response

As stated in our April 15, 1983, January 3, 1984 and June 13, 1986 submittals, information essential for performance of Technical Support Center functions is currently available. A printout of selected variables is available from the process computer. The graphics display capabilities described for the Control Room are also available in the Technical Support Center. Meteorological variables are currently available in the Technical



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Support Center via cathode ray tube displays and/or chart recorders. Radiological release information is available from a combination of cathode ray tube display and voice communication with the Control Room. The adequacy of the information provided to the Technical Support Center has been verified through emergency drills and exercises. Additional information regarding Technical Support Center capabilities is provided in our Site Emergency Plan.

3. Supplement 1 to NUREG-0737 Criterion - Emergency Operations Facility (EOF)

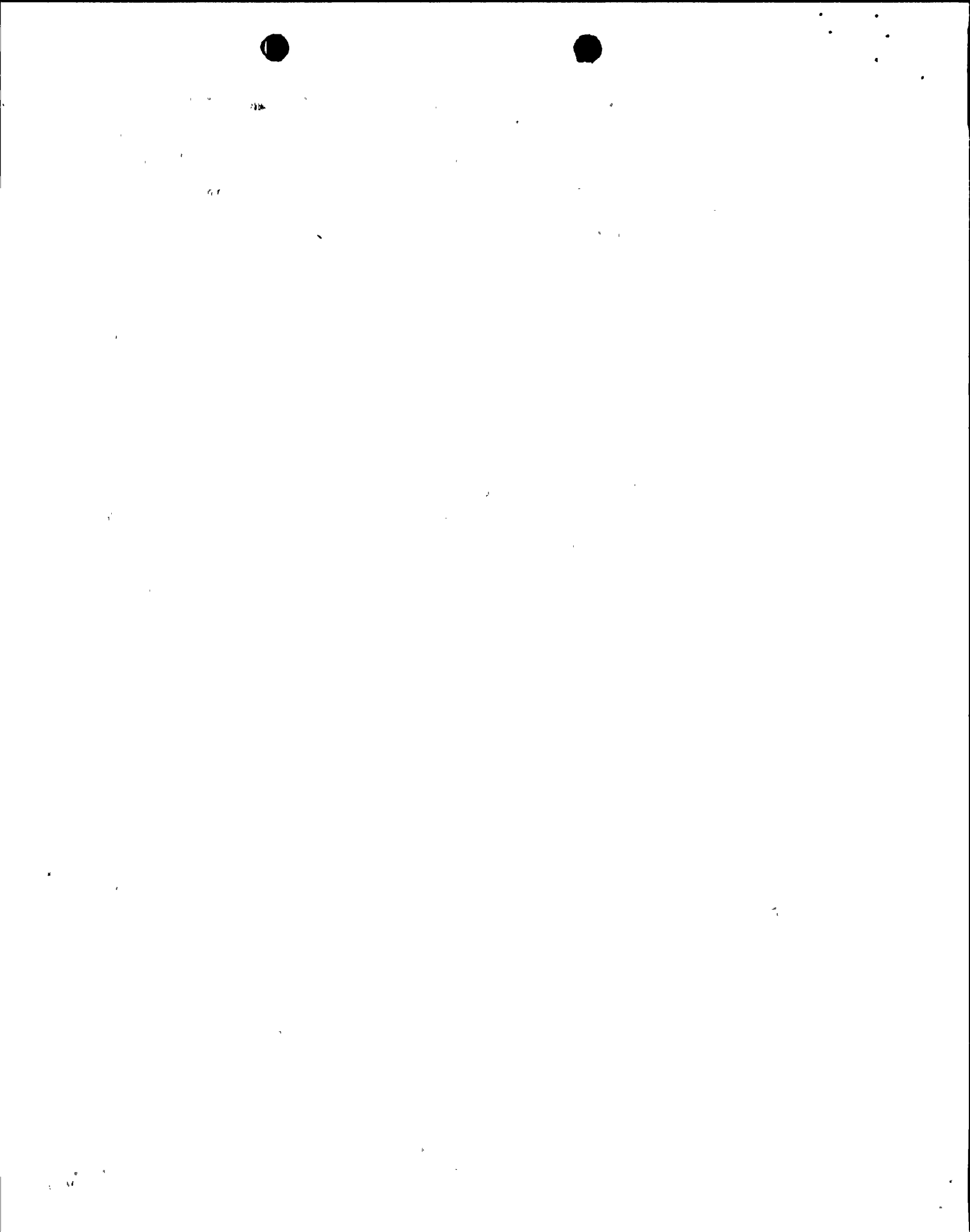
- i) Those primary indicators needed to monitor containment conditions and releases of radioactivity from the plant shall be available in the EOF.
- ii) The EOF data indications and associated circuitry shall be of reliable design but need not meet Class 1E, single failure or seismic qualification requirements.

Response

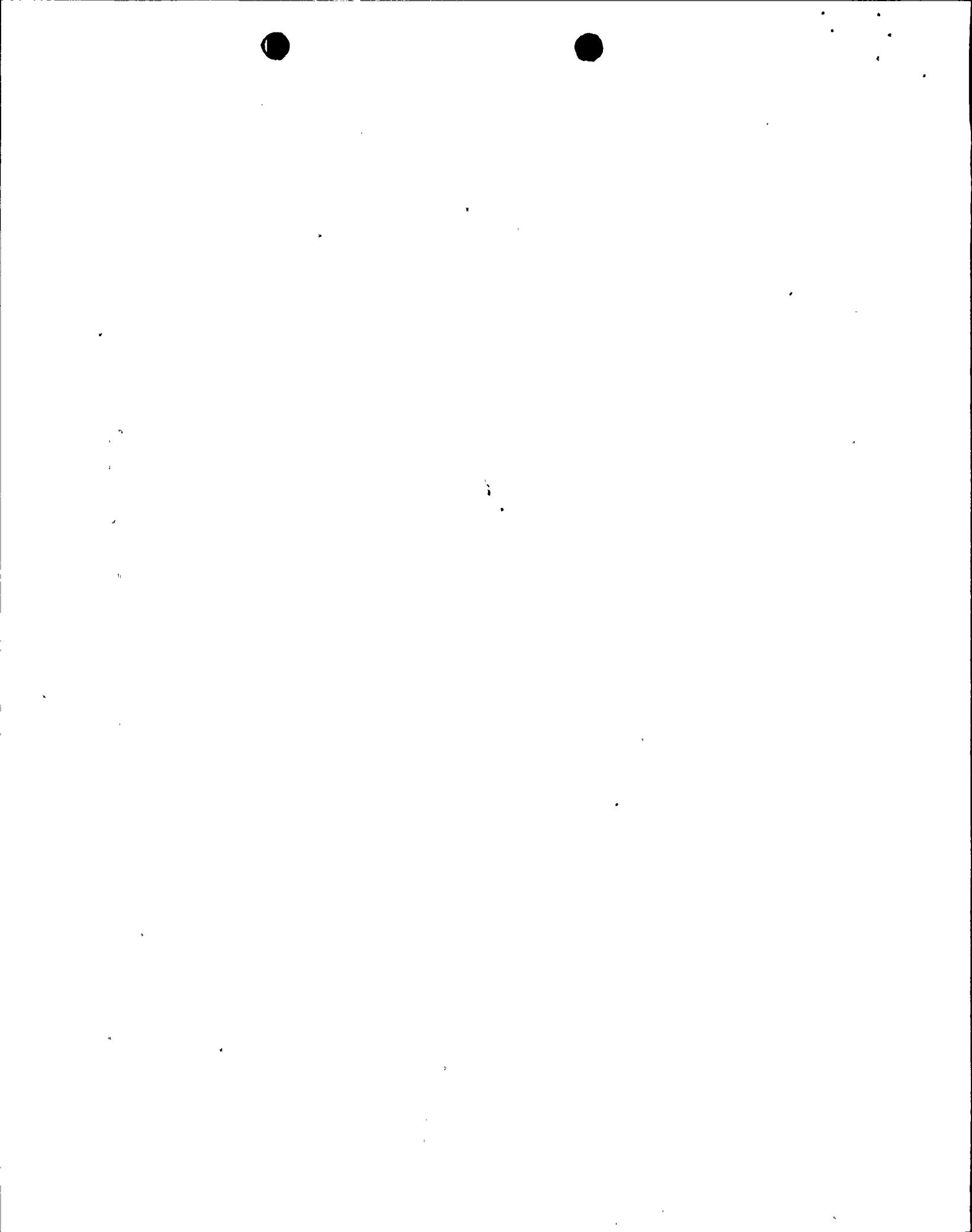
As stated in our April 15, 1983 submittal, information needed to monitor containment conditions and radioactive plant releases are currently provided in the Emergency Operations Facility. Meteorological data can be obtained from cathode ray tube displays in the Emergency Operations Facility. Radiological release information is available from a cathode ray tube and voice communication with the Technical Support Center or Control Room. Additional information regarding Emergency Operations Facility capability is provided in our Site Emergency Plan.

Conclusion

The Nine Mile Point Unit 1 Control Room currently provides the information needed by the operator to assess the status of the plant during normal and accident conditions. Relative to the specific recommendations of Regulatory Guide 1.97, our review indicates that those variables

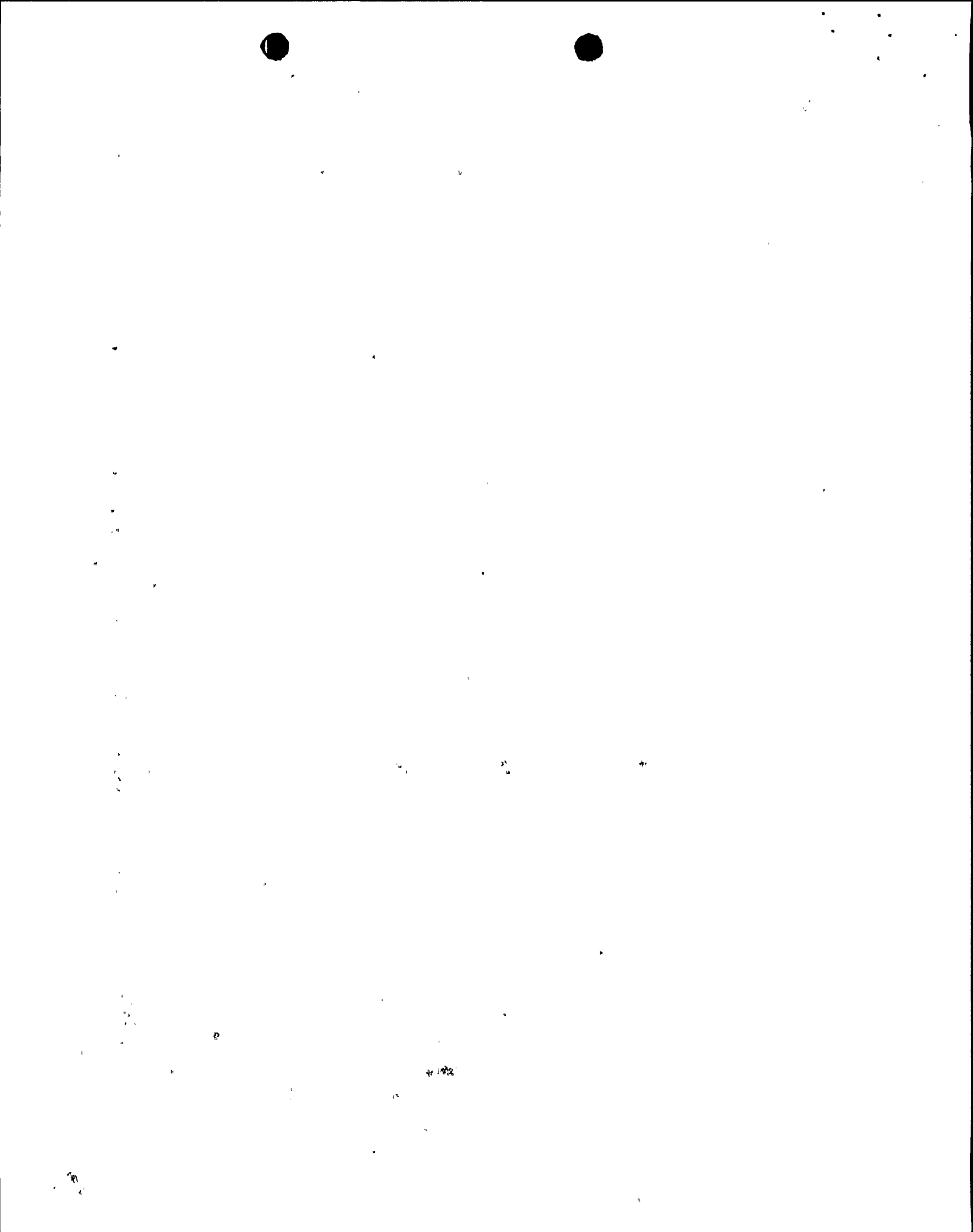


applicable to Nine Mile Point Unit 1 are monitored and displayed in the control room. In addition, information essential for the performance of the Technical Support Center and Emergency Operations Facility functions are currently provided. The adequacy of this information has been verified through emergency drills and exercises.



NINE MILE POINT UNIT 1

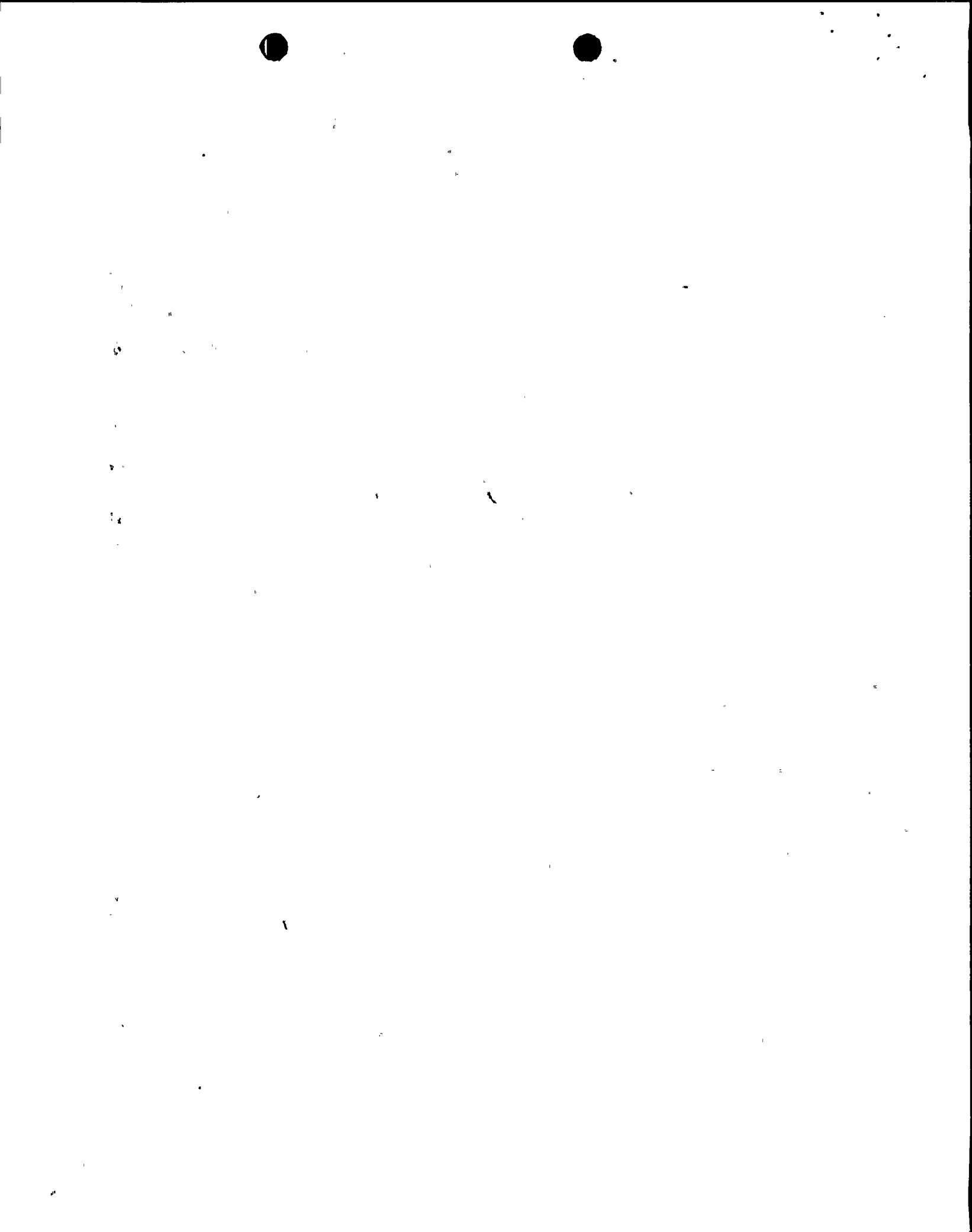
Summary Tables for Regulatory Guide 1.97



Clarification

Clarifying information for the tables which follow is provided below.

- Variables subject to Category 1 criteria are addressed first, followed by those subject to Category 2 and Category 3 criteria.
- Drywell pressure suppression pool temperature and suppression pool level are subject to Category 1 and Category 2 criteria. They are included in the Category 1 table only.
- Containment Effluent Radioactivity-Noble Gases is subject to Category 2 and Category 3 criteria. It is included in the Category 2 table only.
- The following variables listed in Regulatory Guide 1.97 are not applicable to Nine Mile Point Unit 1:
 1. Main steam line isolation valves leakage control system pressure - Nine Mile Point Unit 1 is not equipped with a leakage control system.
 2. RCIC flow - Nine Mile Point Unit 1 is not equipped with a RCIC system. This function is performed by the Shutdown Cooling System.
 3. LPCI system flow - Nine Mile Point Unit 1 is not equipped with LPCI system. This function is performed by the Core Spray System.
 4. Noble Gases and Vent Flow Rate: Drywell purge, standby gas treatment system purge, secondary containment purge, secondary containment, auxiliary building - These variables are not required by Regulatory Guide 1.97 if discharge is through a common plant vent, as is the case for Nine Mile Point Unit 1.
- Only the ranges and display location for Category 3 variables are presented, since the remaining criteria listed in Supplement 1 to NUREG-0737 do not apply.
- Instrument Range - The range given in the table is the range of the indicator in the Control Room. Generally, transmitters are calibrated according to the range of the control room indicator.
- Environmental Qualification - The table specifies whether the instrument monitoring the particular variable was included in the Environmental Qualification Program conducted to address 10CFR50.49. Specifying IEEE 323 as a requirement on the purchase document is also considered sufficient to satisfy environmental qualification concerns.
- Seismic Qualification - A "yes" indicates that the equipment was specified to either IEEE 344 or original plant seismic design criteria, depending on the time of purchase. The information pertains to the transmitter/sensor. The adequacy of the seismic design of the remaining components in the instrument loop is discussed in our "Amendment 1 to Application to Convert Provisional Operating License to Full Term Operating License," dated November 1973. Indicators in the Control Room are not normally specified to seismic criteria, but are mounted in accordance with plant seismic design criteria as a minimum.



A "no" is accompanied by an explanatory note.

- Quality Assurance - A "yes" means the equipment is listed on the current Nine Mile Point Unit 1 Q-List.

A "no" is accompanied by an explanatory note.

- Sensor Location - Self-explanatory.
- Power Supply - Self-explanatory.
- Display Device - Niagara Mohawk historically did not consider display devices on safety-related systems to be safety-related components. Display devices are maintained in good working order by the Instrument & Control Department and are included in the Instrument Calibration Program. Considering the importance of certain devices in providing critical information to the operator, Niagara Mohawk has reclassified the displays of Category 1 variables as safety-related. However, Category 1 display devices that receive their signal from a computer or microprocessor, or are electronically isolated from the safety-related portion of the circuit may be classified as non-safety related.

The location and type of each display device is specified. Safety-related display devices are identified by an asterisk.



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Neutron Flux, Category 1, Type B, Variable</u>										
SRM (4)	RG0 7A thru 7D	CORE	10 ⁻⁶ to 10 ⁶ cps	Yes	N/A	No	24VDC Batteries	Console E	Recorder/RG05	1
IRM (8)	RHO 1A thru 1H	CORE	0 to 12.5% pwr	Yes	Note 2	Yes	24 VDC Batteries	Console E	Recorder*/RIO5A-D	
APRM (8)	RIO 1A thru 1H	CORE	0 to 125% pwr	Yes	Note 2	Yes	RPS 11/12	Console E	Recorder*/RIO5A-D	
<u>Reactor Coolant Level, Category 1, Type A & Type B, Variable</u>										
Hi/Lo-Lo/Lo	36-03A&D	Inst. Rm.	0 to 100 inches	Yes	Yes	Yes	RPS 11/12	Pnl F	Meter/36-09,10	
Wide Range	36-33	Inst. Rm.	-1 to 27.5 feet	Yes	Yes	Yes	RPS 11	Pnl F	Meter/1A13	3,4
Fuel Zone Level	36-24A,B	Inst. Rm.	-240 to 110 inches	Yes	Yes	Yes	RPS 11/12	Pnl F	LED/1F51,52	3,4,5,20
(Pressure Compensation 36-23A,B)										
<u>RCS Pressure, Category 1, Type A & Type B, Variable</u>										
Pressure Transmitter	36-31,32	Inst. Rm.	0 to 1600 psig	Yes	Yes	Yes	RPS 11/12	Panel F	Meter*/36-31A,32A	



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION SEISMIC</u>	<u>ENVIRON</u>	<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Drywell Pressure, Category 1, Type A,B&C, Variable</u>										
Narrow Range	201.2-105, 106	Inst. Rm.	0-75 psig	Yes	Note 6	Yes	RPS 12	Pnl's L & K	Meters/ 201.2-105A,106A	7
Wide Range	201.2-483, 484	Inst. Rm.	-5-250 psig	Yes	Yes	Yes	RPS 11/12	Pnl L	Meters*/ 201.2-483A,484A Recorder/ 201.2-307,308	3,4
<u>Drywell Atmosphere Temperature, Category 1 Type A & Category 2 Type D, Variable</u>										
Thermocouple (3)	201-36A,50A,51A	Drywell	50° to 300°F	Yes	Yes	Yes	RPS 12	Pnl L	Meter*/201- 27B,36B,33B	3,4,20,21
<u>Drywell Sump Level, Category 1, Type B, Variable</u>										
Equip. Drain Leakage	IM 178	Corner Rm.	0-50,000 #/hr	NA	NA	NA	Bus 152 Non-IE	Pnl H	Recorder/1M131	8,9
Floor Drain Leakage	IM 72	Corner Rm.	0-10 gpm	NA	NA	NA	Bus 152 Non-IE	Pnl H	Recorder/1M67	8,9



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Primary Containment Pressure, Category 1, Type B, Variable</u>										
Torus Pressure	201.2-07	Corner Rm.	0 to 4 psig	Yes	Note 6	Yes	RPS 12	Pnl's L & K	Meter*/ 201.2-07C,07B	7,10
<u>Primary Containment Isolation Valve Position Indication, Category 1, Type B, Variable</u>										
Mimic	NA	Various	Normal/Off Normal	Yes	Yes	No	RPS 11/12 125 VDC Batteries	Pnl F	Mimic/red green lights	11,12,13
<u>Radioactivity Concentration in Circulating Primary Coolant, Category 1, Type C, Variable</u>										
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
<u>Suppression Pool Water Level, Category 1, Type A & Type C, Variable</u>										
Downcomer Submergence	58-04	NE&SE Corner Rm.	1-7 (8-14' level)	Yes	Yes	Yes	RPS 11/12	Pnl K	Meter/58-04B	
Wide Range	58-05/06	NE&SE Corner Rm.	1.25-14.75'	Yes	Yes	Yes	RPS 11/12	Pnl K	Meter*/201.2- 381 Recorder/201.2- 308,307	3,4



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
				<u>SEISMIC</u>	<u>ENVIRON</u>					
<u>Primary Containment Pressure, Category 1, Type C, Variable</u>										
See Drywell Pressure, Pg. 2										
<u>Containment Hydrogen Concentration, Category 1, Type A & Type C, Variable</u>										
H ₂ Monitor	201.2-217, 330	Turb. Bldg.	Note 15	Yes	Yes	Yes	RPS 11/12	Pnl L	Recorder*/ 201.2-450,451	4
<u>Containment Oxygen Concentration, Category 1, Type A & Type C, Variable</u>										
O ₂ Monitor	201.2-218, 331	TB Elev. 291	Note 16	Yes	Yes	Yes	RPS 11/12	Pnl L	Recorder*/ 201.2-451,450	4
<u>Containment Area Radiation-High Range, Category 1, Type E, Variable</u>										
High Range	201.7-36A/37A	Containment Penetrations	1 R/hr-10 ⁸ R/hr	Yes	Yes	Yes	RPS 11/12	Pnl J	Recorder*/ 201.7-36C	4,17
<u>Suppression Pool Water Temperature, Category 1, Type A & D, Variable</u>										
Accurex	201.2-517,518	Torus Area	30° to 230°F	Yes	Yes	Yes	RPS 11/12	Pnl K	Meter/ 201.2-519,520	3,4,20



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC</u> <u>ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Radiation Exposure Rate, Category 2, Type C, Variable</u>										
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA/NA	18
<u>Effluent Radioactivity-Noble Gases, Category 2, Type C, Variable</u>										
See Nobel Gas and Vent Flow Rate, Pg. 10										
<u>Suppression Chamber Spray Flow, Category 2, Type D, Variable</u>										
Containment Spray Flow (4)	FT-80-131, 132, 133, 134	Rx Bldg.	0 to 2x10 ⁶ lb/hr	Yes	Yes	Yes	RPS 11/12	Pnl K	Meter/80-56B, 49B,71B,76B	19
<u>Drywell Spray Flow, Category 2, Type D, Variable</u>										
See Suppression Chamber Spray Flow, above										
<u>Primary System Relief Valve Position, Category 2, Type D, Variable</u>										
Acoustic Monitor	66-19 thru 24	Drywell	Indication of flow	Yes	Yes	No	RPS 11	Pnl H	Annunciator/ H3-4-5	23,38
Thermocouple	01-13 thru 17, 24	Drywell	Indication of flow	Yes	Yes	No	N/A	Computer Alarm	NA/NA	23,38



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Isolation Condenser Shell Side Water Level, Category 2, Type D, Variable</u>										
Level Transmitter	60-28,29	Rx Bldg.	0 - 8 ft.	Yes	Yes	Yes	RPS 11/12	Pnl K	Meter*/60-28A, 29A	
<u>Isolation Condenser System Valve Position, Category 2, Type D, Variable</u>										
See Primary Containment Isolation Valve Position Indication, Pg. 3										
<u>HPCI Flow, Category 2, Type D, Variable</u>										
Flow Transmitters	29-53,54	Turb. Bldg.	0 to 2.0x10 ⁶ lb/hr	Yes	Yes	Q	RPS 11 & MG Set 167	Pnl F	Meter/1D36A,B	24
<u>Core Spray System Flow, Category 2, Type D, Variable</u>										
Flow Transmitter	81.1-01,02	Rx Bldg.	0 to 250x10 ⁴ lb/hr	Yes	Yes	No	RPS 11/12	Pnl K	Meter/RV-27A,B	38
<u>SLCS Flow, Category 2, Type D, Variable</u>										
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA/NA	25
<u>SLCS Storage Tank Level, Category 2, Type D, Variable</u>										
Level Transmitter	IL-02	Rx Bldg.	350-4150 gallons	No	No	No	RPS 11	Pnl K	Meter/IL-03	26,38



NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>RHR System Flow, Category 2, Type D, Variable</u>										
SDC Flow	NA	NA	NA	NA	NA	NA	NA	NA	NA/NA	27,28
<u>RHR Heat Exchanger Outlet Temperature, Category 2, Type D, Variable</u>										
Heat Exchanger Outlet	RV07A,B,C		40°-400°F	No	No	No	RPS 12	Pnl K	Meter/RV-37A,B,C	27,28,38
Common Header Inlet	RV-07D		0°-400°F	No	No	No	RPS 12	Pnl K	Recorder/RV-08	27,28,38
Common Header Outlet	RV-07E		0°-400°F	No	No	No	RPS 12	Pnl K	Recorder/RV-08	27,28,38
<u>Cooling Water Temperature to ESF System Components, Category 2, Type D, Variable</u>										
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA/NA	29
<u>Cooling Water Flow to ESF System Components, Category 2, Type D, Variable</u>										
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA/NA	30
<u>Emergency Ventilation Damper Position, Category 2, Type D, Variable</u>										
Position Indication										
Standby Gas Treatment Isolation Valve			open-closed	No	No	No	RPS 11/12	Pnl L	Lights/Red/Green	31
Reactor Building Normal Ventilation			open-closed	No	No	No	RPS 11/12	Pnl L	Lights/Red/Green	31
System Flow	202-102,103	Turb. Bldg.	0-2000 CFM	Yes	Yes	Yes	RPS 11/12	Pnl L	Meter/202-49B,92B	



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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Status of Standby Power Sources, Category 2, Type D, Variable</u>										
Diesel Generators #102 & #103										
Current	NA	Diesel Rm.	0-600 amps	No	No	No	Off Gen. Leads	Pnl A	Meter/NA	26,38
Voltage	NA	Diesel Rm.	0-5000 volts	No	No	No	Off Gen. Leads	Pnl A	Meter/NA	26,38
125 Vdc Batteries										
Current	NA	Turb. Bldg.	0-1200 amps	No	No	No	Batt Inst Pwr	Pnl A	Meter/NA	26,38
Voltage	NA	Turb. Bldg.	0-150 volts	No	No	No	Batt Inst Pwr	Pnl A	Meter/NA	26,38
<u>Reactor Building Area Radiation, Category 2, Type E, Variable</u>										
ARM #2	RO10A-2	New Fuel Storage	10 ⁻⁵ -10 ⁻¹ R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R003A-2	32
ARM #16	RO14B-7	TIP Room	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-7	32
ARM 17 (Low)	RO14C-9	Refuel Bridge	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-9	32
ARM 17 (High)	RO15C-10	Refuel Bridge	10 ⁻² -10 ³ R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R016C-10	32
ARM 18	RO14B-8	Equip. Hatch	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-8	32
ARM 19	RO14B-9	Rx Bldg Drain Tank	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-9	32
ARM 20	RO14B-10	RBCLC Htx	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-10	32
ARM 21	RO14C-1	Clean-Up Rm.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-1	32
ARM 22	RO14C-2	Fuel Pool Filters	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-2	32



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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION SEISMIC</u>	<u>ENVIRON</u>	<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Reactor Building Area Radiation, Category 2, Type E, Variable (Continued)</u>										
ARM 23	R014C-3	CRD Modules	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-3	32
ARM 26	R014C-5	Fuel Pool Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-5	32
ARM 28	R014C-7	Cont. Spray Htx	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-7	32
ARM 29	R014C-8	N. Inst. Rm.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-8	32
<u>Radiation Exposure Rate, Category 2, Type E, Variable</u>										
Rod Monitor 1	R010A-1	Admin Bldg-Turb Bldg	10 ⁻⁵ -10 ⁻¹ R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R003A-1	33
Rod Monitor 3	R010A-3	Reactor Control Rm.	10 ⁻⁵ -1.0 ⁻¹ R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R003A-3	33
Rod Monitor 4	R014A-5	Turb Floor-Gen End	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-5	33
Rod Monitor 5	R014A-6	Turb Floor-Fd Pump End	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-6	33
Rod Monitor 6	R014A-7	Condensate Pump Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-7	33
Rod Monitor 7	R014A-8	Feed Pump Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-8.	33
Rod Monitor 8	R014A-9	Switchgear Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-9	33
Rod Monitor 9	R014A-10	Cond. Demineralizer Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004A-10	33
Rod Monitor 10	R014B-1	Regeneration Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-1	33
Rod Monitor 11	R014B-2	Makeup Demineral. Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-2	33
Rod Monitor 12	R014B-3	Waste Disp. Loading Sta	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-3	33



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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION SEISMIC</u>	<u>ENVIRON</u>	<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Radiation Exposure Rate, Category 2, Type E, Variable (continued)</u>										
Rod Monitor 13	R014B-4	Waste Disp. Pump Rm.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-4	33
Rod Monitor 14	R014B-5	Waste Disp. Control Rm.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-5	33
Rod Monitor 15	R014B-6	Waste Disp. Storage Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004B-6	33
Rod Monitor 24	R014A-4	Results Shop	10 ⁻⁵ -10 ⁻¹ R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R003A-4	33
Rod Monitor 25	R014C-4	Decon Area	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-4	33
Rod Monitor 27	R014C-6	High Level Lab.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004C-6	33
Rod Monitor 31	R014D-3	W. Bldg. Decon Tank	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004D-3	33
Rod Monitor 32	R014D-1	W. Bldg. 247' E1.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004D-1	33
Rod Monitor 33	R014D-2	W. Bldg. 229' E1.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004D-2	33
Rod Monitor 34	R014D-4	Off Gas Compressor Rm.	10 ⁻⁴ -1.0 R/Hr	NA	NA	NA	Non-IE	Pnl J	Meter/R004D-4	33
<u>Noble Gas and Vent Flow Rate, Category 2, Type E, Variable</u>										
RAGEMS (includes particulates & iodines)	112-25,26,27	Turb. Bldg.	10 ⁻⁶ uCi/cc to 10 ³ uCi/cc	NA	NA	NA	PB 1671	Chem Lab	CRT/NA	26,34
Flow Meter	3FT3	Turb. Bldg.	0-250,000 cfm (0 to 110% flow)	NA	NA	NA	PB 1671	Chem Lab	CRT/NA	26,34



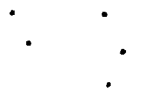
NINE MILE POINT UNIT 1
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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION SEISMIC</u>	<u>ENVIRON</u>	<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Control Rod Position, Category 3, Type B, Variable</u>										
RPIS	RD75	Drive Mechanism	00 to 48 (full in to full out)	NA	NA	NA	RPS 11	Pnl F	Display/NA	
<u>RCS Soluble Boron Concentration, Category 3, Type B, Variable</u> - See "Accident Sampling Capability" below.										
<u>Analysis of Primary Coolant, Category 3, Type C, Variable</u> - See "Accident Sampling Capability" below.										
<u>Primary Containment Area Radiation, Category 3, Type C, Variable</u> - Category 1 instrumentation provides this function.										
<u>Containment Effluent Noble Gases, Category 3, Type C, Variable</u> - Category 2 instrumentation provides this function.										
<u>Main Feedwater Flow, Category 3, Type D, Variable</u>										
Master Flow Control	29-53,54 & ID10C	Turb. Bldg.	0-8x10 ⁶ lb/hr	NA	NA	NA	RPS 11 & MG Set 167	Pnl E	Meter/ID 80	
Total FW Flow	29-53,54 & ID10C	Turb. Bldg.	0-8x10 ⁶ lb/hr	NA	NA	NA	RPS 11 & MG Set 167	Pnl F	Recorder/ID 14	



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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
				<u>SEISMIC</u>	<u>ENVIRON</u>					
<u>Condensate Storage Tank Level, Category 3, Type D, Variable</u>										
Level Transmitter	57-18	Turb. Bldg.	0-50 feet	NA	NA	NA	Non-IE	Pnl H	Meter/57-18A	
<u>High Radioactivity Liquid Tank Level, Category 3, Type D, Variable</u>										
Concentrated Waste Tank #12	45.2-22	Rad Waste Bldg.	0-100%	NA	NA	NA	Non-IE	RadWaste Pnl	Recorder/45.2-21	36
<u>Particulates and Halogens, Category 3, Type E, Variable</u>										
See Noble Gas Vent Flow Rate, Page 10										
<u>Airborne Radiohalogens & Particulates, Category 3, Type E, Variable</u>										
Sample Analysis	NA	Chem. Lab	10 ⁻⁹ -10 ⁻³ uCi/cc	NA	NA	NA	NA	Chem Lab	NA/NA	



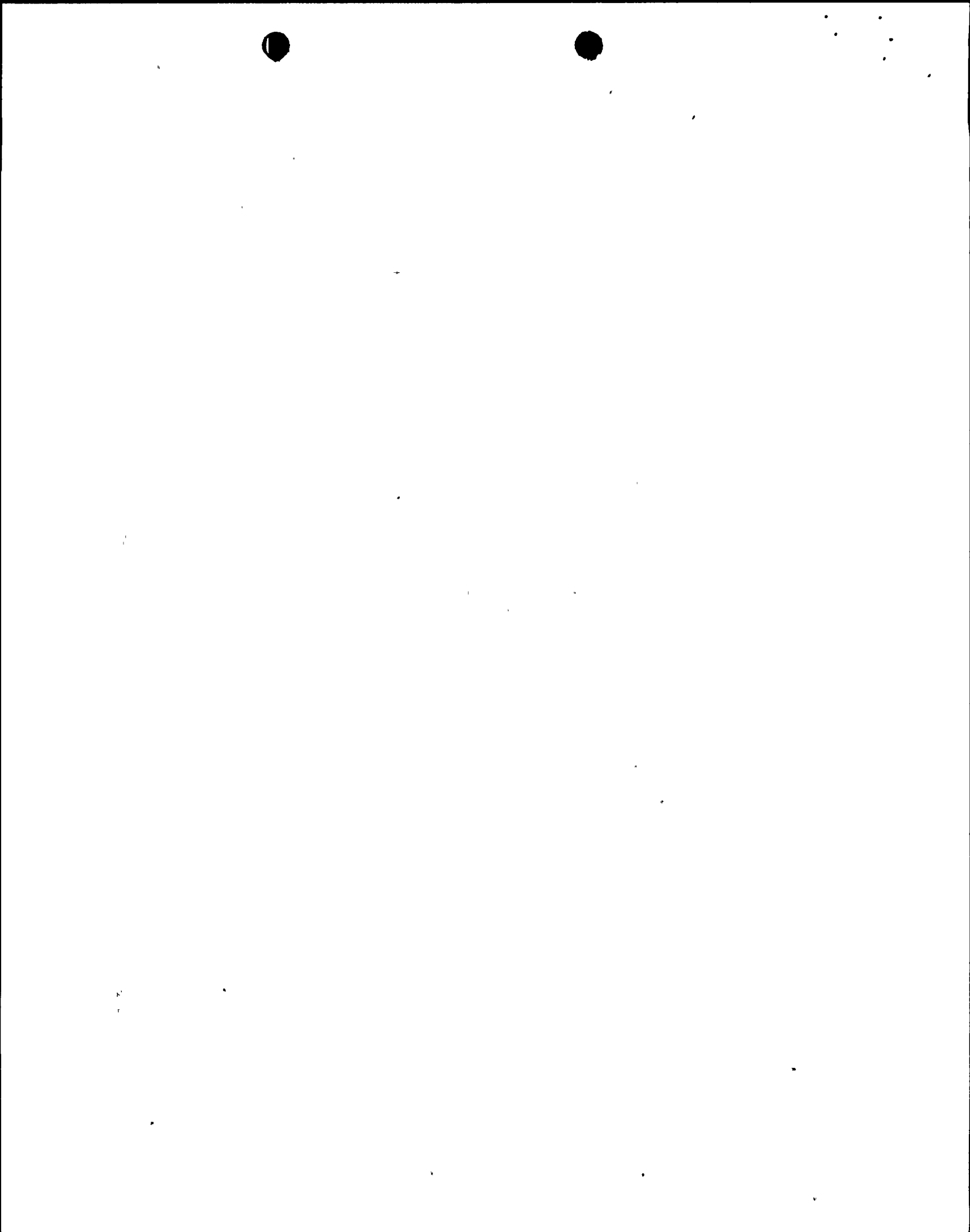
NINE MILE POINT UNIT 1
REGULATORY GUIDE 1.97 INSTRUMENTATION

<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u> <u>SEISMIC ENVIRON</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
<u>Plant & Environs Radiation, Category 3, Type E, Variable</u>										
Various portable instruments										
Photons	NA	NA	10 ⁻³ -10 ⁴ R/Hr	NA	NA	NA	NA	NA	Meters/NA	
Beta	NA	NA	10 ⁻³ -10 ⁴ R/Hr	NA	NA	NA	NA	NA	Meters/NA	
Gamma spectrometer	NA	NA	10 ⁻³ -10 ⁴ R/Hr	NA	NA	NA	NA	NA	Meters/NA	
<u>Wind Direction, Category 3, Type E, Variable</u>										
30 ft. and 200 ft. Elev.	SN 319,306	Met Tower	0-360°	NA	NA	NA	Off-site Non-IE	Pnl G	Recorder/NA	
<u>Wind Speed, Category 3, Type E, Variable</u>										
30 ft. and 200 ft. Elev.	SN 1162,1165	Met Tower	0-100 mph	NA	NA	NA	Off-site Non-IE	Pnl G	Recorder/NA	
<u>Atmospheric Stability, Category 3, Type E, Variable</u>										
Delta Temperature	SN 3231,3237	Met Tower	-8°F to 20°F T	NA	NA	NA	Off-site Non-IE	Pnl G	Recorder/NA	
Sigma Theata	Computer	Met Tower	0° to 30°	NA	NA	NA	Off-site Non I-E	Pnl G	Recorder/NA	



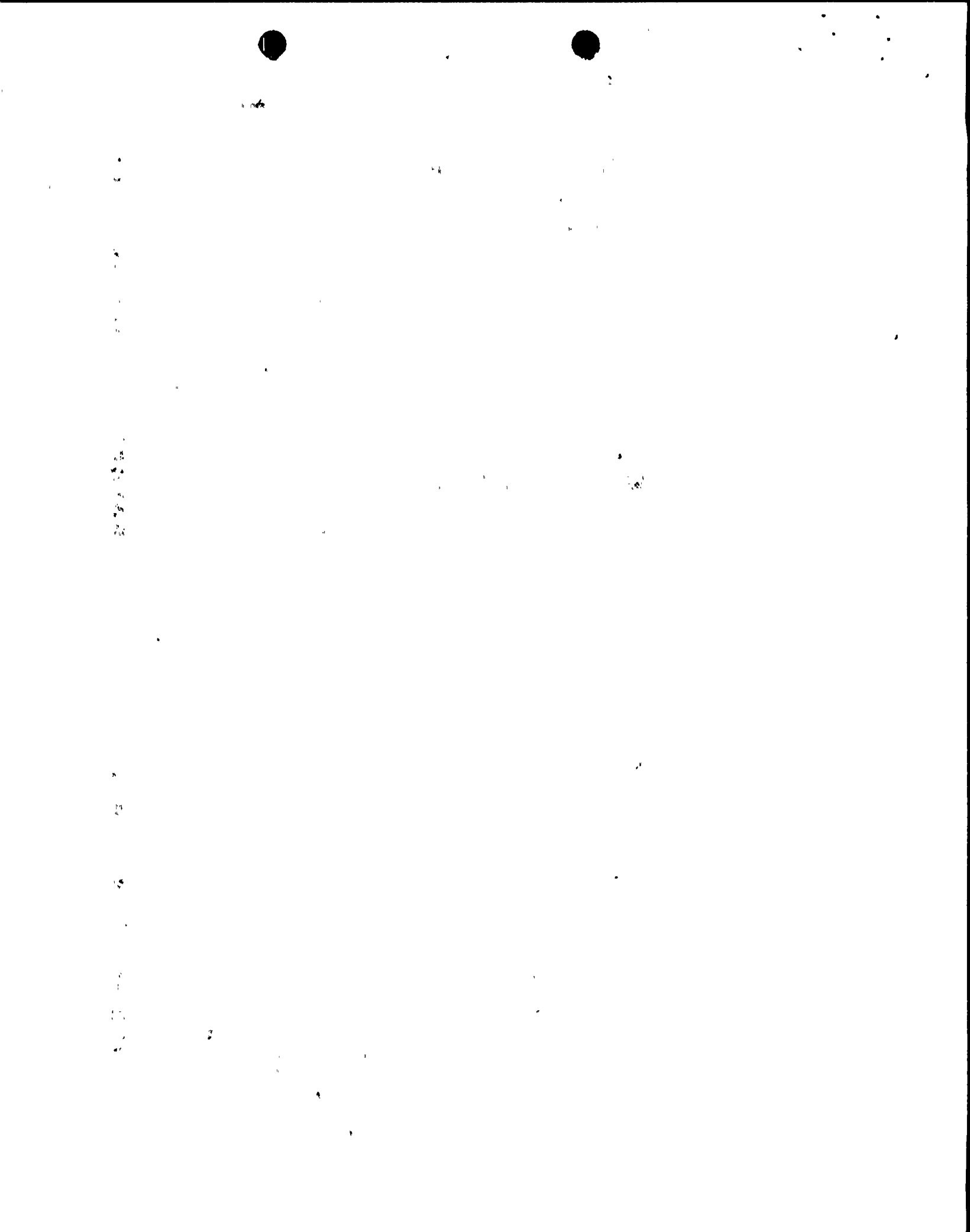
NINE MILE POINT UNIT 1
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<u>INSTRUMENT NAME</u>	<u>SENSOR NUMBER</u>	<u>SENSOR LOCATION</u>	<u>INSTRUMENT RANGE</u>	<u>QUALIFICATION</u>		<u>QA</u>	<u>POWER SUPPLY</u>	<u>DISPLAY LOCATION</u>	<u>DEVICE TYPE/NUMBER</u>	<u>NOTES</u>
				<u>SEISMIC</u>	<u>ENVIRON</u>					
<u>Accident Sampling Capability, Category 3, Type E, Variable</u>										
Primary Coolant and Sump Grab Sample										
- Gross Activity	NA	NA	10 uCi/ml to 10 Ci/ml	NA	NA	NA	NA	Chem Lab	NA/NA	36
Gamma Spectrum	NA	NA	Isotopic Analysis	NA	NA	NA	NA	Chem Lab	NA/NA	--
Boron Content	NA	NA	50 to 2000 ppm	NA	NA	NA	NA	Chem Lab	NA/NA	--
Chloride Content	NA	NA	0.1 to 10 ppm	NA	NA	NA	NA	Chem Lab	NA/NA	--
Dissolved Hydrogen	NA	NA	Note 37	NA	NA	NA	NA	Chem Lab	NA/NA	
Dissolved Oxygen	NA	NA	Note 37	NA	NA	NA	NA	Chem Lab	NA/NA	
pH	NA	NA	2 to 12	NA	NA	NA	NA	Chem Lab	NA/NA	--
<u>Accident Sampling Capability: Containment Air, Category 3, Type E Variable</u>										
Hydrogen Content	NA	NA	0.1 to 100%	NA	NA	NA	NA	Chem Lab	NA/NA	
Oxygen Content	NA	NA	0.5 to 100%	NA	NA	NA	NA	Chem Lab	NA/NA	
Gamma Spectrum	NA	NA	Isotopic Analysis	NA	NA	NA	NA	Chem Lab	NA/NA	



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NOTES

1. SRMs provide the capability to monitor Neutron Source Flux, which is below 10^{-5} % power.
2. Niagara Mohawk has committed to follow the development of environmentally qualified Neutron Flux instrumentation.
3. Equipment specified to IEEE 323 (1974).
4. Equipment specified to IEEE 344 (1975).
5. The Lo Lo Lo level indicator transfers to the fuel zone display system on a trip of the recirculation pumps. Conventional level instrumentation provides indication prior to trip, as described in our submittals dated December 31, 1979, and February 9, 1981.
6. The 0 to 75 psig drywell pressure transmitter and the 0 to 4 psig torus pressure transmitter have not been included in the 'EQ' program; however, the -5 to 250 psig transmitters, capable of serving the same function, have been included.
7. The common power supply is considered acceptable since this instrumentation does not automatically initiate any protective action.
8. The primary benefit of the equipment installed on the Drywell Floor and Equipment Drain Tanks is to monitor leakage rate, not tank level. The information provided pertains to the equipment used to monitor leakage rates.
9. Niagara Mohawk concurs with the Boiling Water Reactor Owner's Group Category 3 classification of this variable. As noted in the Boiling Water Reactor Owner's Group submittal dated April 6, 1983, other more appropriate instrumentation is available to detect a breach of the reactor coolant system. This includes Drywell Pressure and Temperature. Additionally, sump level equipment does not initiate automatic protective action nor would it be available if the containment were isolated.
10. The Torus Pressure transmitter has a calibrated range of 0-4 psig. Torus design pressure is 35 psig. However, a higher range instrument is not considered necessary. The pressure in the torus will not vary more than 3 psi from the pressure in the drywell. Three psi is the maximum pressure differential that would exist if only one of the four drywell-suppression chamber vacuum relief valves were operable.
11. Environmental Qualification of passive Isolation Valve position switches was excluded. This exclusion pertains to those valves which are normally in their accident mitigation position and are not required to change state during an accident to perform their safety function.



12. Approximately 130 reactor and containment isolation valves with position indication were evaluated for inclusion in the EQ program. Over 100 of the position indication switches have been replaced or analyzed to meet EQ requirements as set forth in 10 CFR 50.49. The remaining 28 valves were deleted from the EQ program. Program details, including these evaluations, were reported in NMPC's submittals of May 20, 1983 and May 31, 1984. These submittals were accepted by the NRC in their SER dated January 10, 1985.

However, balanced judgments about systems and equipment operation during seismic events can only be made by considering all of the equipment operating together in such events. Thus, it is clear that consideration of the seismic capabilities of position switches should be folded in with the more comprehensive program covering affected equipment now being developed by the NRC and the Seismic Qualification Utility Group to resolve USI A-46. Further consideration of this subject should be deferred to the SQUG implementation program.

13. Niagara Mohawk does not consider the position indication switches themselves to be safety related if they do not perform or initiate any safety function, or if they do not affect the isolation function. However, the importance of valve position indication to the operator is recognized. Inclusion of the position switches in the Environmental Qualification program provides assurance that valve position indication will be available to the operator following design basis accidents. Operability of the position switches is demonstrated during Isolation Valve testing. Therefore, sufficient assurance exists that the position switches will function as intended.
14. Niagara Mohawk concurs with the Boiling Water Reactor Owner's Group position, as stated in their April 6, 1983 submittal, that monitoring this variable need not be implemented. Briefly, the Owner's Group position is that monitoring containment radiation and using the Post-Accident Sampling System are sufficient to accomplish the function of concern; namely, detecting a breach of fuel cladding.
15. The range of the Hydrogen analyzer is actually from 0-20%. A reading of 100% on the panel recorder corresponds to an actual concentration of 5% or 20% in the containment, depending on the selector switch position. For an inerted containment the primary concern is oxygen concentration, since combustion could not occur if sufficient oxygen is not present. Therefore, a maximum range of 20% is acceptable.
16. The Oxygen analyzer range is 0-25%. A reading of 100% on the panel recorder corresponds to an actual concentration of either 5% or 25%, depending on the range selector switch position.
17. The detectors are located in mechanical penetrations, not internal to the primary containment.
18. Niagara Mohawk concurs with the Boiling Water Reactor Owner's Group position as stated in their April 6, 1983 submittal that monitoring this variable for the purpose of detecting containment breach is not necessary. Containment breach can be detected by the noble gas effluent monitors. (See "Radiation Exposure Rate," Type E variable.)



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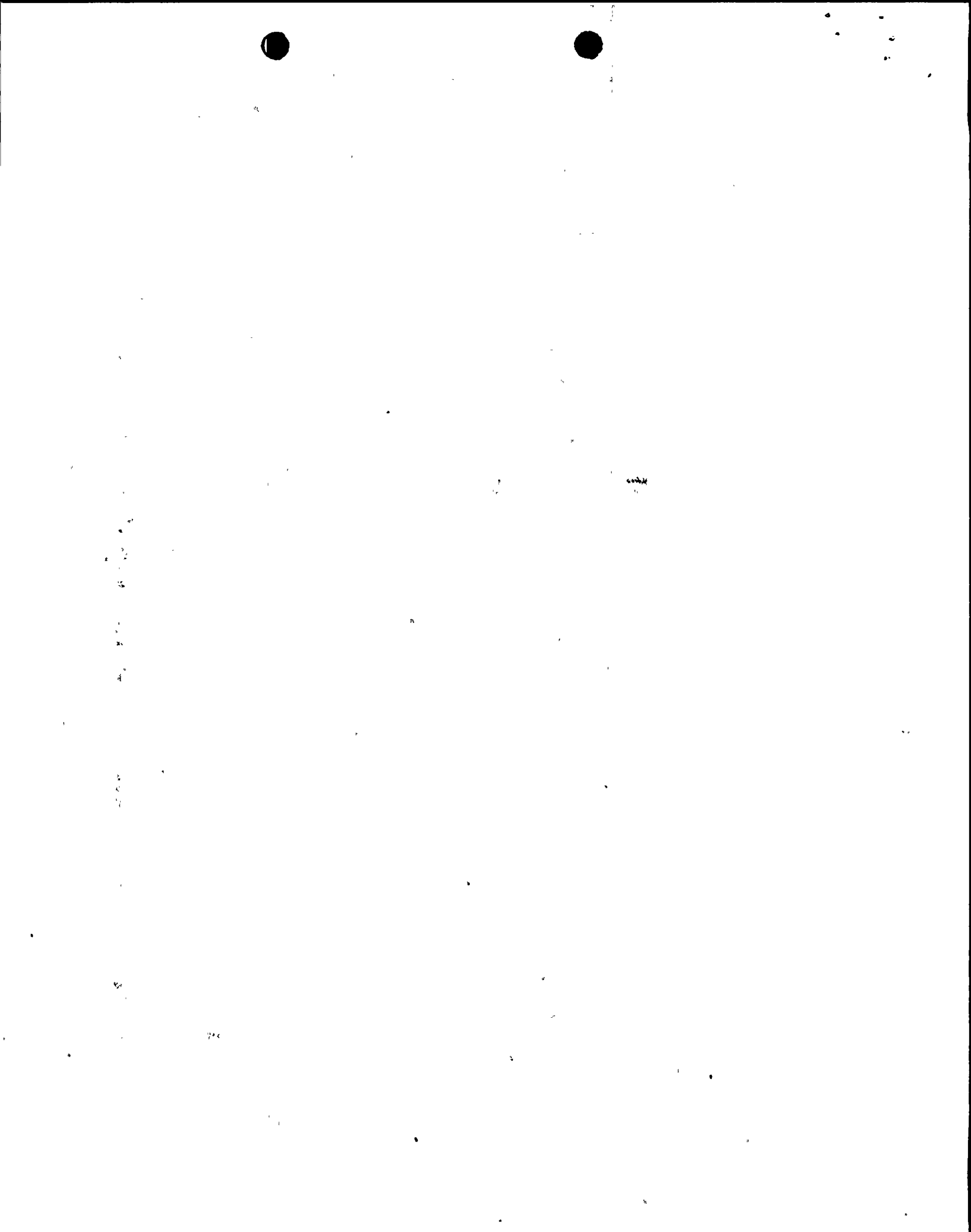
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19. The flow instrumentation installed in the Containment Spray System at Nine Mile Point Unit 1 does not provide specific indication of flow to the Suppression Chamber. Total system flow is measured. The total flow consists of combined flow to the Drywell and Torus. The system is designed such that a predetermined portion of the total flow is automatically distributed to the drywell and/or torus upon system initiation. Indication of total flow and valve position is sufficient for the operator to determine that flow to the torus exists.
20. Quality Assurance requirements are applied to the sensors and cables, not to the microprocessor or display device.
21. The Drywell Temperature monitor provides the operator with information regarding:
 - i) the potential for flashing in the level sensing lines.
 - ii) margin to the Drywell design temperature limit.
 - iii) margin to the ADS Valve qualification temperature.

The range of 50°-300°F is sufficient to provide this information.

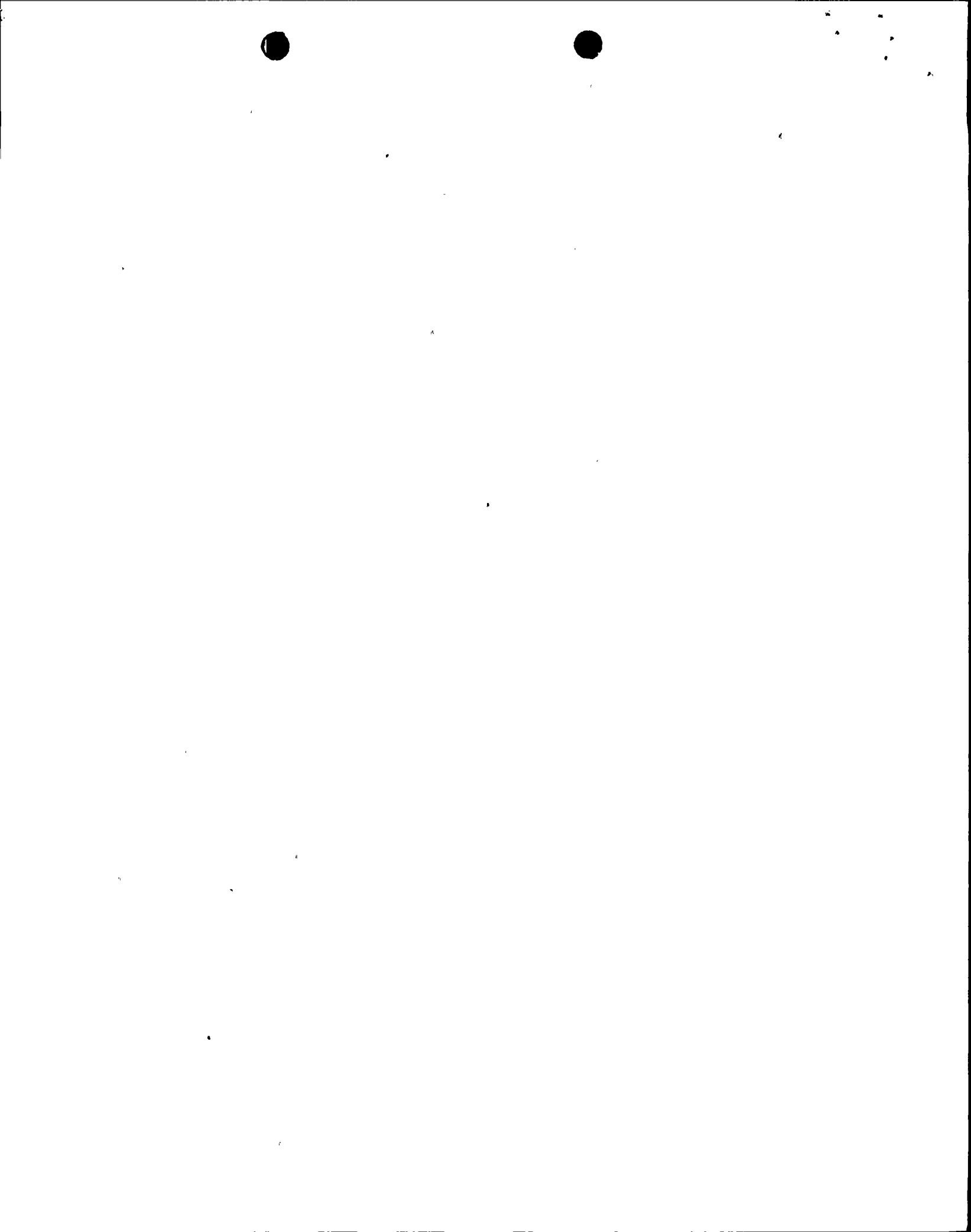
22. An exception to Category 1 criteria for drywell temperature relates to the power supply. All three thermocouple indications in the Control Room are powered off of Reactor Protection System (RPS) Bus 12. However, two redundant thermocouple indications are available on the Remote Shutdown Panels (dual element thermocouples). One of these indicators is powered from RPS Bus 11. Given Supplement 1 of NUREG-0737 allowances for design plant differences, this arrangement is considered adequate for meeting the intent of Category 1 criteria.
23. The annunciator on Panel H refers the operator to a computer printout to determine individual valve opening. If the computer fails, the "Acoustic Monitoring System" in the Auxiliary Control Room is used to identify the open relief valve.
24. The designation 'Q' applies to components of non-safety related systems maintained as safety related. The HPCI and CRD systems are designated 'Q' because they are required by plant Technical Specifications for operation, but no credit is assumed for their operation in any accident analysis.
25. Flow measuring devices were not provided for the liquid poison system. Proper functioning of the system can be verified by monitoring pump discharge header pressure, tank level, neutron flux level and squib valve position. Therefore, a flow measuring device is not considered necessary.
26. This instrument was not included in the environmental qualification program since the system is not required to operate under harsh environmental conditions resulting from a design basis event.
27. Nine Mile Point Unit 1 does not have an RHR system. The Shutdown Cooling system is used to remove decay heat. The Shutdown Cooling system flow rate is adjusted to control the cooldown rate below 100°F/hr. There is no direct indication of flow.



28. The final Environmental Qualification rule excluded the requirement of achieving and maintaining a cold shutdown condition. Consequently, the Shutdown Cooling system is outside the scope of the Environmental Qualification program.
29. The Core Spray and Containment Spray pumps are cooled by recirculating discharge flow. The pumps take suction from the torus. The cooling water temperature would be approximately the same as torus water temperature. No further monitoring is necessary. See data for "Suppression Pool Temperature."
30. Cooling water flow to the Core Spray and Containment Spray pumps is not monitored. The cooling water is recirculated pump discharge flow. A loss of cooling water might cause the pump motor to overheat and trip. The tripped condition would be indicated in the control room. No further indication is necessary.
31. The stated purpose of this variable is monitoring system operation. This function is more appropriately performed by monitoring system flow. The flow transmitters have been replaced in accordance with the provisions of the Environmental Qualification program. The new transmitters meet appropriate quality assurance and seismic criteria. The flow transmitters are not redundant, are powered from RPS bus 11/12, and system flow is indicated by a meter on Panel L.
32. Niagara Mohawk concurs with the Boiling Water Reactor Owner's Group position that this is not an appropriate parameter for assessing primary containment leakage or detecting significant releases. Therefore, implementation is not necessary. However, Nine Mile Point Unit 1 does have area radiation monitors installed in the Reactor Building with ranges chosen on a plant unique basis. These monitors are more appropriately classified as Category 3 variables, in accordance with the Owner's Group categorization for "Radiation Exposure Rate."

The Reactor Building ventilation system is automatically isolated and the Emergency Ventilation system initiated at an exposure rate of 20 mR/hr.

33. Niagara Mohawk concurs with the Boiling Water Reactor Owner's Group position as stated in their April 6, 1983 submittal that this should be classified as a Category 3 variable and the instrument range should be chosen on a plant specific basis. The stated purpose of monitoring this variable, as contained in Regulatory Guide 1.97, is to monitor areas where access to safety-related equipment might be necessary. As noted in the Owner's Group submittal, this function would be more aptly performed with portable radiation instruments and secondary containment sample analysis.
34. The data given is for the Radiological Assessment and Gaseous Effluent Monitoring System (RAGEMS). Several other monitors are available to monitor stack releases with ranges from 10^{-1} to 10^6 cps and 10^{-1} to 10^6 cpm. Station procedures are available for converting these units (cps or cpm) to the units of uCi/cc. These other monitors are displayed in the control room on Panel J.



35. 100% tank level equals 166 inches. Total tank height is 180 inches.
36. A grab sample from the primary containment sump or torus cannot be obtained from the Post-Accident Sampling Station installed in the Turbine Building. More detailed information regarding the Post-Accident Sampling System is contained in our December 30, 1982 and March 8, 1984 submittals. Nuclear Regulatory Commission review of the Post-Accident Sampling System is documented in a January 12, 1984 letter to Niagara Mohawk.
37. Instrument range for this parameter is discussed in our March 8, 1984 submittal.
38. Classified non-safety related in accordance with Engineering Procedures.

