

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G. 05000244
 AUTH. NAME: AUTHOR AFFILIATION
 KOBER, R.W. Rochester Gas & Electric Corp.
 RECIP. NAME: RECIPIENT AFFILIATION
 ZWOLINSKI, J.A. Operating Reactors Branch 5

SUBJECT: Forwards Reg Guide 1.97, Rev 3 instrumentation comparison,
 tabulating info provided in 840131 submittal & 841130 Suppl
 1 to NUREG-0737 SPDS safety analysis.

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NOTES: NRR/DL/SEP 1cy.
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	NRR ORB5 BC	7 7		
INTERNAL:	ADM/LFMB	1 0	IE/DEPER/EPB	3 3
	NRR PAULSON, W	1 1	NRR/DHFS/HFEB	5 5
	NRR/DHFS/PSRB	1 1	NRR/DL/ORAB	1 1
	NRR/DL/ORB5	5 5	NRR/DSI/CPB	1 1
	NRR/DSI/ICSB	1 1	NRR/DSI/METB	1 1
	NRR/DSI/RAB	1 1	NRR/DSI/RSB	1 1
	<u>REG FILES</u>	1 1	RGN1	1 1
	RGN2/DRSS/EPRPB	1 1		
EXTERNAL:	LPDR	1 1	NRC PDR	1 1
	NSIC	1 1		
NOTES:		1 1		

1. The purpose of this document is to provide a summary of the information received from the source regarding the activities of the group. The information was obtained from a confidential source who has provided reliable information in the past.

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ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001



ROGER W. KOBER
VICE PRESIDENT
ELECTRIC & STEAM PRODUCTION

TELEPHONE
AREA CODE 716 546-2700

February 28, 1985

Director of Nuclear Reactor Regulation
Attention: Mr. John A. Zwolinski, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: USNRC Regulatory Guide 1.97
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Zwolinski:

RG&E's letter dated January 31, 1984, provided a comparison of Regulatory Guide 1.97 requirements and existing instrumentation at the R.E. Ginna Nuclear Power Plant. RG&E committed to submit a schedule for meeting Regulatory Guide 1.97 recommendations or provide justification of differences in February 1985. Attachment 1, "USNRC Regulatory Guide 1.97, Revision 3, Instrumentation Comparison", tabulates information provided in the January 31, 1984 submittal and the NUREG-0737 Supplement 1 SPDS Safety Analysis dated November 30, 1984, and provides required schedules or justification.

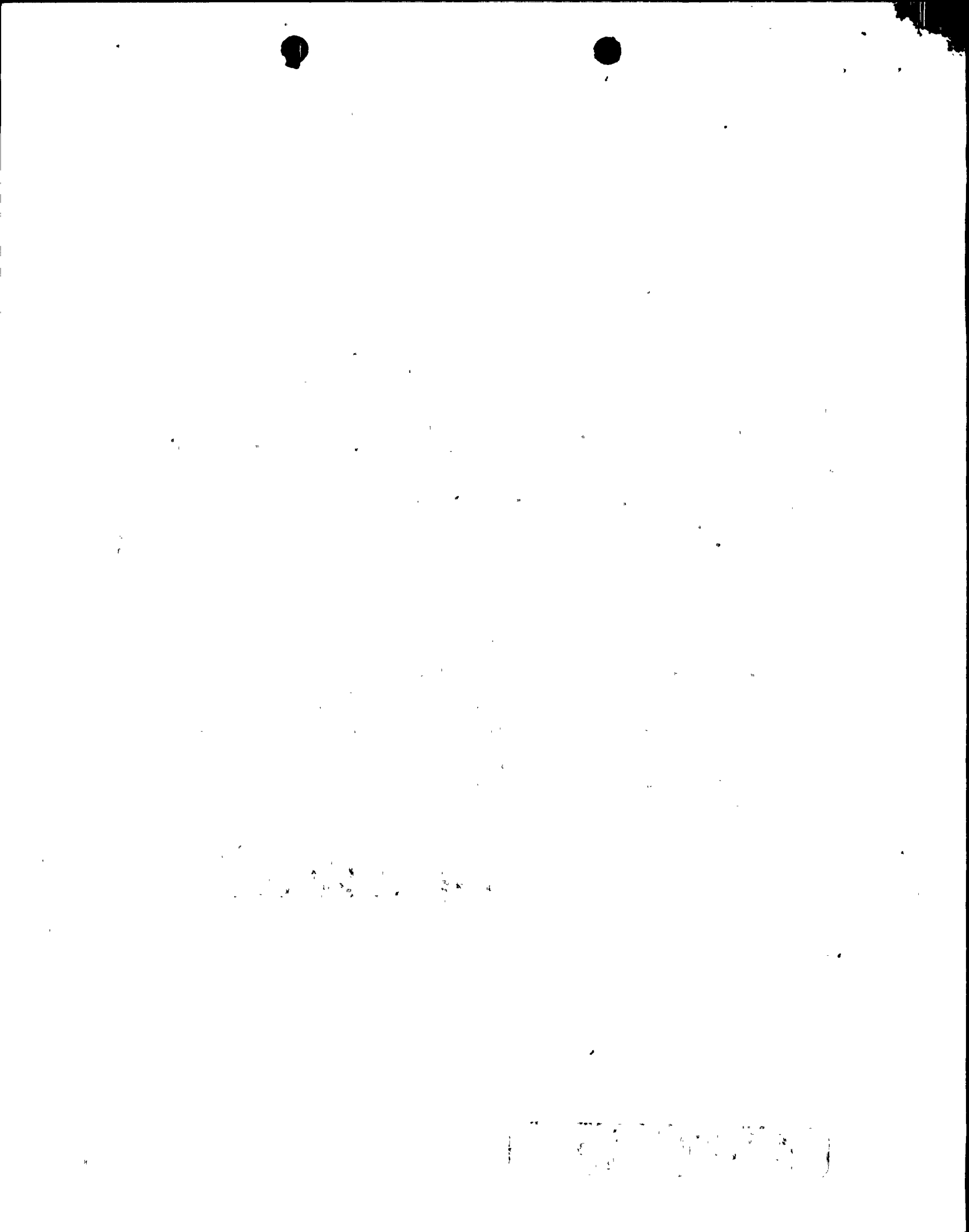
Very truly yours,

Roger W. Kober

Attachment

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ATTACHMENT 1

USNRC Regulatory Guide 1.97, Revision 3
Instrumentation Comparison Table

Rochester Gas and Electric Corporation
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

February 1985



REGULATORY GUIDE 1.97 INSTRUMENTATION COMPARISON

Letters dated January 31, 1984 and November 30, 1984 provided, respectively, a USNRC Regulatory Guide 1.97, Revision 2 comparison report and a plant safety analysis and implementation plan describing the basis on which parameters have been selected for display on the Ginna Safety Parameter Display System (SPDS). This selection process utilized the emergency response guidelines developed by the Westinghouse Owners Group for writing emergency operating procedures (EOPs) at Ginna Station. In the attached table, the required plant variables from Regulatory Guide 1.97, Revision 3, are listed. An identification as to whether or not the particular variable is required to perform a safety function, as specified in the EOPs, is noted in the fifth column. The evaluation provided in the November 30 letter, as well as a review of the present Ginna-specific emergency operating procedures, were used to generate this column. It should be noted that since the EOPs are still under active review and are subject to revision, changes to the Regulatory Guide 1.97 comparison may occur in the future. This table will be supplemented as appropriate when this occurs. Variables not considered to be presently required at Ginna Station to perform safety functions required by the EOPs are considered acceptable as existing and are designated with an N/A in the last column. Generally, RG&E plans to meet the recommendations of Regulatory Guide 1.97 for those items identified in the table on a schedule consistent with the implementation of the Safety Assessment System. Where RG&E finds that acceptable implementation of the Regulatory Guide 1.97 guidance can be attained without meeting the explicit wording of Regulatory Guide 1.97, the rationale is provided in the table.

It should be noted that differences from the recommended ranges specified in Regulatory Guide 1.97 are denoted in the fourth column. These differences have been reviewed on an individual basis and found acceptable for plant-specific application.

Regulatory Guide 1.97 specifies provisions for redundancy, qualification, QA, surveillance testing, and human factors, among others. For environmental qualification purposes, RG&E's submittal of October 31, 1980, and subsequent NRC letters and RG&E responses form the basis for selection of equipment to be environmentally qualified (harsh environment) to meet 10 CFR 50.49. For QA requirements, RG&E's Appendix A to the QA manual uses a "graded QA" approach. The Regulatory Guide 1.97 instrumentation will be reviewed and placed in the proper "grade" by the implementation date. In terms of identification and human factors, RG&E is now pursuing a Control Room Design Review for NUREG-0737. Any enhancements in these areas will be addressed as part of that review.



THE
FEDERAL BUREAU OF INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

TO : DIRECTOR, FBI (100-441100)

FROM : SAC, NEW YORK (100-100000)

SUBJECT: [Illegible]

RE: [Illegible]

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ROCHESTER GAS & ELECTRIC

USNRC REG. GUIDE 1.97 REVISION 3 COMPARISON TABLE

Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Neutron Flux	10 ⁻⁶ to 100% power	1	Existing intermediate and source range not qualified to Category 1	No	See Attachment 2, item 1,
Control Rod Position	Full in or not full in	3	Existing	No	N/A
RCS Soluble Boron Concent.	0-6000 ppm	3	Available on PASS, System Range: 50-6000 ppm	No	See Attachment 2, Item 1
RCS Cold Leg Temperature	50-700°F	1	TW-450 and 451 are not qualified to Category I; indication on Main Control Board is by recorder TR-410 (range 0-700°F).	Yes	Category 1 TE-409B-1 and TE-410B-1 to be installed in 1985 (range 0-700°F).
RCS Hot Leg Temperature	50-700°F	1	No direct control room readout existing. Have qualified hot leg temperature to subcooling meter.	Yes	Category 1 TE-409A-1 and TE-410A-1 to be installed in 1985 (range 0-700°F).
RCS Pressure	0-3000 psig	1	PT-420A feeds PR-429 (0-3000 psig) and is Category 1; PT-420 feeds PR-420 (0-3000 psig) but is not powered from Category I source.	Yes	PT-420 power sources scheduled for upgrade following installation of SAS/PPCS in 1986
Core Exit Temperature	200-2300°F	1	Existing 39 chromel-alumel thermocouples positioned over outlet nozzles at selected core locations. Range: 40-700°F at control room display, up to 1200°F at computer for all TCs, and up to 2200°F on computer for 5 TCs.	Yes	Category 1 thermocouple system to be installed in 1985 (range 0-2300°F).

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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Coolant Level in Reactor	Bottom of hot leg 1 to top of vessel		Not existing	No	A reactor vessel level monitoring system will be installed as described in RG&E's letter on that subject of August 7, 1984.
Degrees of Sub-cooling	200°F sub-cooling to 35°F superheat	2	Existing, (range: 0-100°F subcooling)	Yes	See Attachment 2, item 2
Containment Sump Narrow Range	Plant specific	2	Existing, Sump A: LT-2039 and LT-2044 (range: 0-30 ft.)	No	N/A
Containment Sump Wide Range	Plant specific	1	Existing, Sump B: LC-942(A-E) and LC-943(A-E) indication of 8, 78, 113, 180, 214 inches (214 inches = approx. 500,000 gal. which was previously justified and accepted by NRC). Qualified Category 1.	Yes	N/A
Containment Pressure	10 psia to 3 times design pressure	1	Existing, PT-946 & 948 (10-200 psia)	Yes	N/A
Containment Isolation Valve Position	Closed/not closed	1	Existing, status lights on MCB and backlighted push-buttons on CI matrix panels	No	See Attachment 2, item 3
Radioactivity Concentration or Radiation Level in Circulating Primary Coolant	1/2 to 100 times Tech. Spec. limit R/hr	1	Available with PASS system.	No	See Attachment 2, item 1

Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Analysis of Primary Coolant	10^{-6} to 10 Ci/gm or TID-14844 source term in coolant volume	3	Existing capability	No	N/A
Containment Area Radiation	1 to 10^7 R/hr	1	Existing	Yes	N/A
Radiation Exposure Rate (areas where access required to service equipment)	10^{-1} to 10^4 R/hr	2	Radiation meters provided (or will be provided) where post-accident operator access required. Ranges meet dose rate calculated using TID 14844 source term. Based on single failure considerations no access required to service equipment.	No	N/A
Effluent Radio-activity-Noble Gas:					
-Condenser Air Ejector Exhaust	10^{-6} to 10^5 uCi/cc	2	Existing	No	N/A
-Containment Purge Vent Exhaust	10^{-6} to 10^5 uCi/cc	2	Existing	No	N/A
-Plant Bldg. Exhaust Vent	10^{-6} to 10^3 uCi/cc	2	Existing	No	N/A
-Vent from S/G Safety Relief & Atmospheric Dump Valves	10^{-1} to 10^3 uCi/cc	2	Existing	Yes	N/A

Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Effluent Radio-activity - Particulates and Halogens. Sampling with Onsite Analysis Capability:					
-Containment Purge Vent Exhaust	10^{-3} to 10^2 uCi/cc	2	Existing	No	N/A
-Aux. Bldg. Vent Exhaust	10^{-3} to 10^2 uCi/cc	2	Existing	No	N/A
Containment Hydrogen Concentration	0-10%	1	Existing	Yes	N/A
Radiation Exposure Rate in Areas Adjacent to Containment	10^{-1} to 10^4 R/hr	2	Area monitors existing in Aux. Bldg. and Int. Bldg. (range: 10^{-4} to 10^1 R/hr)	No	N/A
RHR System Flow	0-110% design	1	Existing, FT-626 (0-4000 gpm) (Not redundant. SI flow or RCS pressure is used as backup indication)	Yes	N/A
RHR Heat Exchanger Outlet Temperature	40-350°F	2	Existing, TE-627 to computer (range: 0-310°F)	No	N/A
Accumulator Tank Level and Pressure	10-90% volume 0-750 psig	2	Narrow range instrument indicates ± 7 inches from normal fill level for accurate Tech. Spec. compliance; 0-800 psig pressure	No	N/A

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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Accumulator Isol. Valve Position	Closed or open	2	Existing, MOV 841 & 865 position indicated on MCB	No	N/A
Charging Flow	0-110% design	2	Existing FT-128 (0-75 gpm, the maximum flow anticipated in normal operations)	No	N/A
SI Flow	0-110% design	1	Existing FT-924 & 925 (0-1000 gpm)	Yes	N/A
RWST Level	Top to bottom	1	Existing, LT-920 & 921 (0-100%)	Yes	N/A
Reactor Coolant Pump Status	Electric current	3	Ammeter existing at 4KV Bus (0-1200A)	No	N/A
Primary System Safety Relief Valve Positions (PORV's & Code Safeties)	Closed/not closed	2	Existing	Yes	N/A
Pressurizer Level	Bottom to top	1	Existing	Yes	N/A
Pressurizer Heater Status	Electric current	2	For control group of heaters, ammeter existing in Aux. Bldg. No ammeter for backup group, but have breaker position for both control and backup groups in Control Room.	No	N/A
Quench Tank Level	Top to bottom	3	Existing, LT-442 (0-100%)	No	N/A
Quench Tank Temp.	50-750°F	3	Existing, TE-439 (0-300°F)	No	N/A



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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Quench Tank Pressure	0 to design pressure	3	Existing, PT-440 (0-150 psig)	No	N/A
S/G Level	Tubesheet to separators	1	Existing, LT-460 & 470 input to LR-460 on MCB (0-518" H ₂ O)	Yes	N/A
S/G Pressure	From atmospheric press. to 20% above lowest safety valve setting (1300 psig)	1	Existing, PT-468, 469, 478, 479 (range: 0-1400 psig)	Yes	N/A
Safety/Relief Valve Positions or Main Steam Flow	Closed/not closed	1 (flow only)	Existing, main steam flow FT-464, 465, 474, 475 (range: 0-3.8 x 10 ⁶ pph). Safety/relief valve positions only during high radiation in secondary sys.	Yes	N/A
Main Feedwater Flow	0-110% design	3	Existing, FT-466, 467, 476, 477 (range: 0-3.8 x 10 ⁶ pph)	No	N/A
Aux. Feedwater Flow	0-110% design flow	1	Existing	Yes	N/A
Condensate Storage Tank	Plant Specific	1	CST Transmitters LT-2022A and LT-2022B are qualified; read 0-24 ft.	Yes	N/A
Containment Spray Flow	0-110% design flow	2	Containment spray flow itself is not available, however, SI, RHR, and total flow are available - CS flow can be determined.	No	N/A

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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
CV Fan Heat Removal	Plant Specific	2	CV fan 1A, 1B, 1C, 1D on/off status at MCB, plenum exhaust temp.	No	N/A
CV Atmosphere Temp.	40-400°F	2	24 CV RTD's go to Leak Rate Test Panel; range - 40-130°F Also, RTD's in plenum exhaust read 0-600°F	No	N/A
CV Sump Water Temp	50-250°F	2	Not existing	No	N/A
Letdown Flow	0-110% design	2	FT-134 (0-100 gpm)	No	N/A
Volume Control Tank Level	top to bottom	2	LT-112 (0-100%)	No	N/A
Component Cooling Water Temp. to ESF	40-200°F	2	TE-621 from CCW Hx goes to computer (50-200°F)	No	N/A
High Level Radioactive Tank Level	top to bottom	3	L1001 (0-100%) - waste holdup tank	No	N/A
Radioactive Gas Holdup Tank Pressure	0 to 150% design	3	P1036, 1037, 1038, 1039 (0-150 psig) design pressure 150 psig, normal operation 100-110 psig.	No	N/A
Emergency Vent Damper Position	Open/close status	2	Existing for containment vent on MCB	No	N/A



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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Status of Standby Power and Other Energy Sources Important to Safety (hydraulic, pneumatic): -480 V Bus	Voltage, current pressure	2	Existing diesel voltmeters & ammeters on MCB	No	N/A
-Instrument Bus			Existing voltmeters on panels in control room; ammeters on inverters in battery rooms for bus 1A & 1C	No	N/A
-125 VDC Bus			Existing voltmeters and ammeters in Control Room	No	N/A
Radiation Exposure Meters (continuous indication at fixed locations)	Range, location, and qualification criteria to be developed to satisfy NUREG-0654, Section II.H.5b and 6b requirements for emergency radiological monitors	2	Existing procedures and equipment are used to initiate emergency measures in accordance with Appendix I and II.H.5b and 6b of NUREG 0654 and NRC approved plant Technical Specifications for compliance with 10 CFR 50 Appendix I.	No	N/A
Airborne Radio-halogens and Particulates (portable sampling with onsite analysis capability)	10^{-9} to 10^{-3} uCi/cc	3	Existing	No	N/A



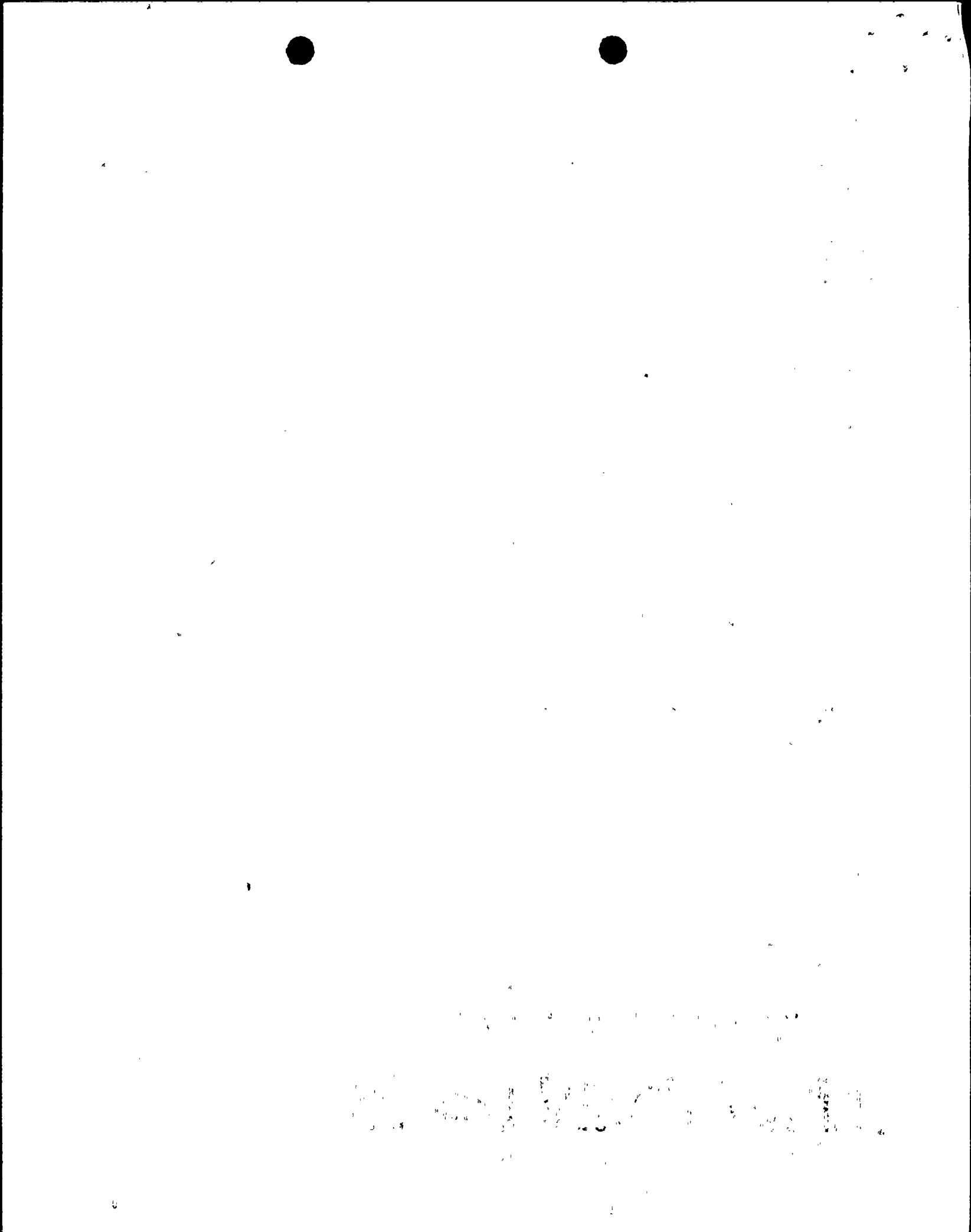
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Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
Plant and Environs Radiation (portable instrumentation)	10^{-3} to 10^4 R/hr, photon 10^{-3} to 10^4 rads/hr, beta radiations and low energy photons	3	Existing	No	N/A
Plant and Environs Radioactivity (portable instrumentation)	Multichannel gamma ray spectrometer	3	Existing	No	N/A
Wind Direction	0-360°	3	Existing	No	N/A
Wind Speed	0-67 mph	3	Existing at 33, 150, 250 ft. elevations (range: 0-100 mph)	No	N/A
Estimation of Atmospheric Stability	Based on vertical temperatures differences	3	Existing, 2 RTD's at 33, 150, 250 ft. elevations; delta T between each elevation	No	N/A
Primary Coolant and Sump: -Gross Activity	Grab Sample 10^{-6} to 10 Ci/cc	3	Available with PASS system	No	N/A
-Gamma Spectrum	Isotopic Analysis		Existing	No	N/A
-Boron Content	0-6000 ppm		(50-6000 ppm) with PASS	No	N/A
-Chloride Content	0-20 ppm		5 ppb - 100 ppm lab analysis	No	N/A

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UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

February 1985

Variable	Required Range	NRC Category	Present Ginna Status	Required for EOPs	Schedule for Upgrade or Justification of Existing Configuration
-Dissolved Hydrogen	0-2000 cc(STP)/Kg		(10-2000 cc/Kg) with PASS	No	N/A
-Dissolved Oxygen	0-20 ppm		(0.1 - 20 ppm) with PASS	No	N/A
-pH	1-13		1-13 with PASS	No	N/A
Containment Air:	Grab Sample	3	Available with PASS	No	N/A
-Hydrogen Content	0-10%		Available with H ₂ monitors and PASS	No	N/A
-Oxygen Content	0-30%		0-30% with PASS	No	N/A
-Gamma Spectrum	Isotopic Analysis		Existing	No	N/A



Attachment 2: Explanatory Information

Item 1: Source Range Flux

In response to the issue of inadvertent boron dilution, as addressed in SEP Topic XV-10 (NRC SER dated September 4, 1981), RG&E stated that operator actions would be used to terminate the dilution event.

Note that dilution accidents are addressed by "abnormal", rather than "emergency" operating procedures. If all source range flux instrumentation becomes inoperable, RG&E plans to implement a procedural step which would direct the operator to immediately prevent the possibility of a dilution event (e.g., secure the volume control tank suction and align the charging pump to the RWST). Plant staff would also be directed to take samples of the RCS to determine the boric acid concentration. The details of the procedure changes are not yet complete; however, the following is anticipated: When on RHR, sampling will be done at 1/2 hour intervals until the reactor is 5% delta rho subcritical, and at 2 hour intervals thereafter until the source range monitor is restored. Under other applicable circumstances (refueling, startup, shutdown) the sampling interval will be one hour until the reactor is 5% delta rho subcritical and two hours thereafter. With such a procedure in place, RG&E has concluded that the source range flux monitor will not be needed to fulfill the guidance of Regulatory Guide 1.97.

Boric acid (and other parameters, such as coolant activity) can be determined using the Ginna Post Accident Sampling System (PASS). The Post Accident Sampling System has been designed and installed as discussed in RG&E's resolution of NUREG 0737 Item II.B.3.

Item 2: Degree of Subcooling

The Ginna Emergency Procedures direct the operator to determine subcooling margin by calculating the degree of subcooling using available instrumentation (RC wide-range pressure [0-3000 psig] and core exit thermocouple temperature [0-2300°F]). Thus, there is no practical instrumentation limit on the available range of subcooling which can be determined. The actual subcooling meter installed separately at Ginna uses RC wide-range pressure and hot leg temperature to calculate the degree of subcooling. This meter has a range of 0-100°F subcooling, compared to the Regulatory Guide 1.97 recommendation of 35°F superheat to 200°F subcooling. Since this is a backup instrument, RG&E does not consider this difference to be significant.

Item 3: Containment Isolation Valve Position Indication

As previously discussed in RG&E's submittals regarding "Environmental Qualification of Electrical Equipment - 10 CFR 50.49," RG&E has determined that position indication is not a parameter required for the performance of a safety function. As discussed in detail in RG&E's responses to IE Bulletin 78-04 (March 3, 1978) and Inspection No. 78-27 (January 16, 1979), the valve safety functions are accomplished using control circuits not affected by any postulated failure of the limit switches which provide the position indication function. Further, because of equipment redundancy, failure of limit switches would not negate the accomplishment of any safety function. Thus, RG&E has designated these indications as not required by the Emergency Operating Procedures, but only provide useful backup information.

