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MAY 13 1991

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
SAFETY PARAMETER DISPLAY SYSTEM (LTR 890006-2)

In a letter dated December 18, 1990, South Carolina Electric & Gas Company (SCE&G) provided a description of a newly installed Safety Parameter Display System (SPDS) (TAC NO. 73713) at the Virgil C. Summer Nuclear Station (VCSNS). In subsequent discussions with the NRC reviewer it was apparent that there was a need for additional information on why certain radiation monitoring displays (stack and steamline monitors) were not included in the SPDS.

The SPDS at VCSNS was designed to aid the operators during the performance of the Emergency Operating Procedures (EOP) which were developed in accordance with the Westinghouse Owner's Group (WOG) Emergency Response Guidelines (ERGs). The ERGs have undergone extensive NRC, INPO, and industry review and are used by most utilities with Westinghouse plants.

The ERGs define six (6) Critical Safety Functions (CSFs) needed by the operators at a Westinghouse nuclear facility to monitor the most important process variables to ensure plant safety. Since radiation levels--as a process variable--are not considered to be as meaningful of a plant safety indicator as flows, temperatures, pressures, levels, etc., the only radiation monitors included in the scope of the CSFs are the containment monitors.

Even though the main steamline and stack radiation monitors are not included as an SPDS CSF, the control room operators monitoring the SPDS still have indications of the equipment status by means of annunciators on the Radiation Monitor Panel adjacent to the Main Control Board (MCB) and the Integrated Plant Computer System (IPCS) monitor mounted on the MCB. The annunciators and monitor provide continuous alarm and display functions for use by operations personnel (both the Control Room Supervisor and the Nuclear Reactor Operator at the Controls) in determining radiological consequences for normal, abnormal, and emergency situations. A brief description of the information contained in the attachments to this letter follows:

- * Attachment I is a control room layout representation which provides configuration information for the SPDS terminals, CRT displays, MCB, and the Radiation Monitor Panel. The SPDS terminals are on a rigid

A003
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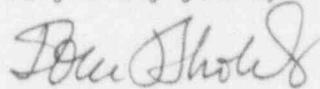
base so that system operators accessing information from the system at terminals #5 and #6 would be facing either the MCB or the Radiation Monitor Panel.

- ° Attachment II is a representation of a typical display on the alarm CRT for BOP Systems at VCSNS. The display in the upper portion of the screen provides alarm indications (including radiation monitor alarms) and is located on the vertical portion of the MCB. This alarm point is redundant to the visual and audio alarms on the adjacent Radiation Monitor Panel.
- ° Attachment III provides a group display of radiation monitor information which is contained on the IPCS. This display, which is directly accessible from any of the terminals (with exception of NSSS and BOP alarm CRTs), provides on line information for the current status of the radiation monitor equipment and its monitored activity.
- ° Attachment IV is a representation of a typical display utilized during accident conditions at VCSNS to access radiological consequences to offsite personnel. This display is accessed through the IPCS.

SCE&G considers the integration of the SPDS and EOPs at VCSNS to be an acceptable means of implementing the guidance of Supplement 1 to NUREG-0737. The design meets the principal purpose and function required of the SPDS to aid control room personnel during abnormal and emergency conditions in determining the safety status of the plant and in assessing whether abnormal conditions warrant corrective action by operators to avoid a degraded core condition.

If you should have any questions in regards to this additional information, please contact Mr. Charles McKinney at (803) 345-4723.

Very truly yours,



John L. Skolds

CJM:JLS:lcd
Attachment

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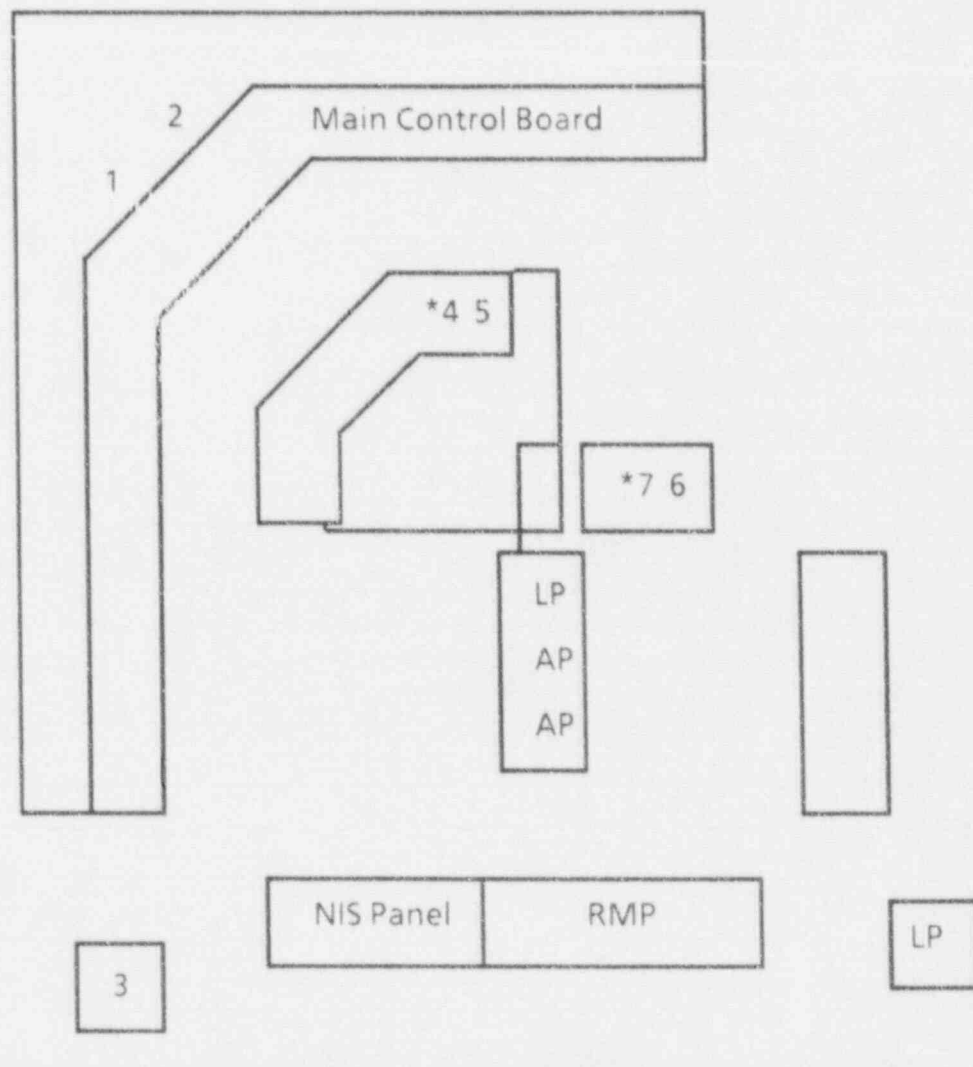
CONTROL ROOM LAYOUT

LEGEND

1 thru 7 - SPDS terminals
LP - Log Printer
AP - Alarm Printer

CLARIFYING NOTES

- 1 & 2 perform a dual function of SPDS and IPCS alarm indications
- 1 - Alarm CRT for NSSS Systems
- 2 - Alarm CRT for BOP Systems including radiation monitors.
- 4 & 7 are currently TSC BISI terminals which are to be converted to SPDS/IPC functions in the future.
- 4 & 5 are located on the elevated Control Room Supervisor Console.
- The Radiation Monitoring Panel (RMP) provides visual and audio alarms for Radiation Monitors.



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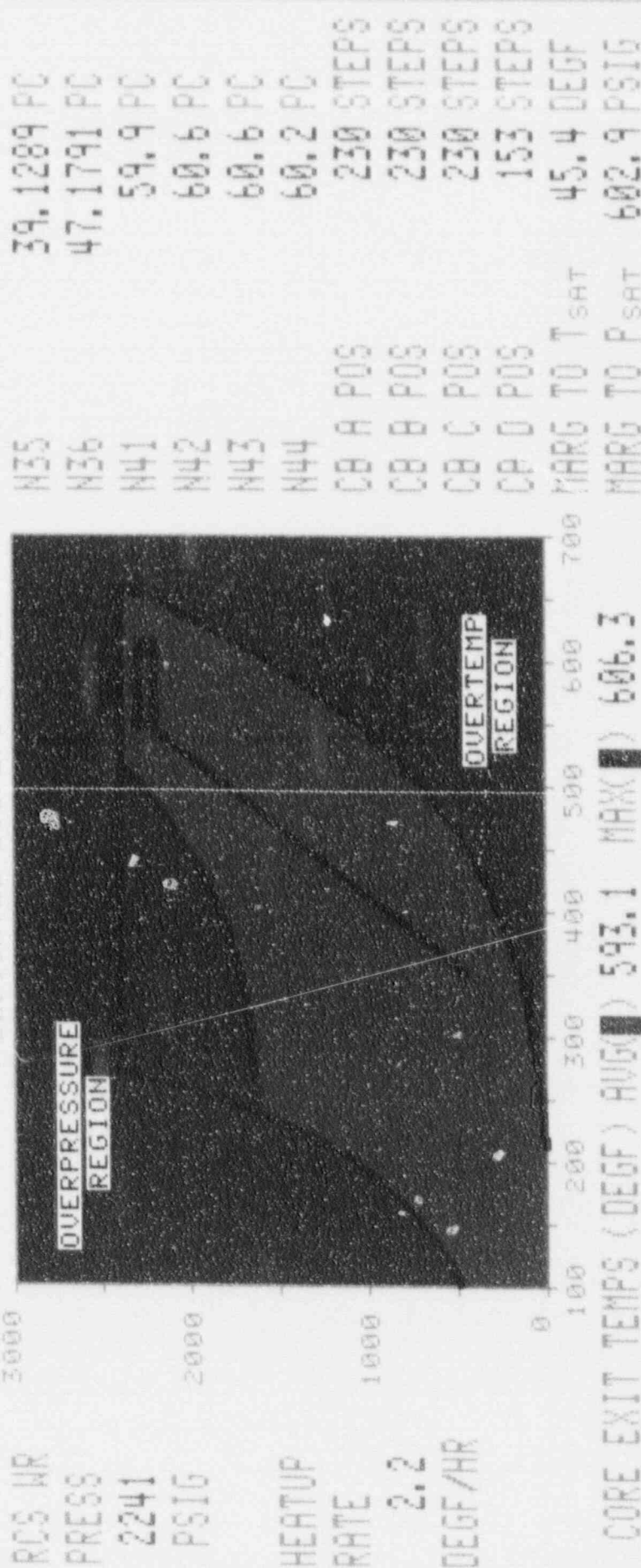
SELECT FUNC. KEY OR TURN-ON CODE

AUTOMATIC

BOP DEDICATED ALARM DISPLAY

DESCRIPTION	QUAL	CURRENT A VALUE	ENG K UNITS	LIMIT EXCEEDED	POINT ID	DATE TIME
MS A STMLINE MONITOR	- RMG19A	HALM	1.5832+00	MR/HR	R1032	05/09/91
RB HI RANGE ION A	- RMG18	GOOD	9.9198-01	R/HR	R1021	11:19:25
WASTE DISCHARGE MONITOR	- RML9	GOOD	1.4049+04	CPM	R1030	05/09/91
MAIN CONDENSER VACUUM PUMP A	ALRM ON				Y2601D	11:06:16
NB DEMIN TO PLANT DISCH FLOW	LALM		-3.2	GPM	F4811A	05/09/91
MDEFW PUMP A CNTL SW LKOUT	ALRM NOT PULL				Y3501D-3	08:07:01
						05/09/91
						05/50:35
						05/09/91
						02:05:26

DEDICATED DISPLAY OFSLIM



F1=CLEAR F2=MAN/AUTO F3=ACK F4=CLR 50K F5=RELOAD F6=PLNT
K80=NORMAL AMODE=POWER OPERATION

SELECT FUNC. KEY OR TURN-ON CODE

AUTOMATIC

BOP DEDICATED ALARM DISPLAY

DESCRIPTION

QUAL

CURRENT

VALUE

A

ENG

UNITS

LIMIT

EXCEEDED

POINT

ID

DATE

TIME

MS A STMLINE MONITOR	-	RMG19A	GOOD	8.9328-02	MR/HR	8.0000+01	R1032	05/09/91
RB HI RANGE ION A	-	RMG18	GOOD	9.9198-01	R/HR	1.0000+00	R1021	11:19:36
WASTE DISCHARGE MONITOR	-	RML9	GOOD	1.3908+04	CPM	3.0000+03	R1030	05/09/91
MAIN CONDENSER VACUUM PUMP A			ALARM ON				Y2601D	11:06:16
NB DEMIN TO PLANT DISCH FLOW			LARM			0.0	F4811A	05/09/91
MOEFW PUMP A CNTL SW LKOUT			ALARM NOT PULL				Y3501D-3	08:07:01

DEDICATED DISPLAY NO551

L0480A	PRESSURIZER LEVEL-LT459	45.0	PC
P0481A	PRESSURIZER PRESSURE-PT456	2235.5	PSIG
L0112A	VOLUME CONTROL TANK LEVEL-LT115	35.3	PC
L0485A	PRESSURIZER RELIEF TANK L-LT470	69.0	PC
P0485A	PRESSURIZER RELIEF TANK PR-PT472	4.6	PSIG
L1028	REACTOR COOL DR TNK LEV	59.4	PC
L1964A	REACTOR BUILDING SUMP LEVEL B	0.1	FT
U9033	BURNUP	12184	MWD/MT
U9034	EFPO BURNUP	298.3	EFPO
U1147	QUADRANT 3 DELTA FLUX TARGET	-1.98	PC
U1141	QUADRANT 1 DELTA FLUX	-1.60	PC
U1500	XE-135 REACTIVITY WORTH	-2545	PCM

SHIFT AVG POWER

2770 2775 2780

MMT

1684.2

QCORE1 (C1M)

2770 2775 2780

MMH

1693.1

RX POWER N44

0 50 100

PC

60.2

GEN GROSS MW

0 400 800

MW

555.7

T AVG

DEGF

574.3

T REF

DEGF

574.4

RB PRESS

PSIG

0.09

F1=CLEAR

F2=MAN/AUTO

F3=ACK

F4=CLR ACK

F5=RELOAD

F6=

PLNT

PLNT

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11:20:40

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GROUP DISPLAY

RADMON
5 SECOND UPDATE RATE

RADIATION MONITORS INSTANTANEOUS

PAGE 1 OF 2

POINT ID	DESCRIPTION		CURRENT VALUE	ENGR UNIT	ALARM LIMIT	QUAL CODE
R1000	CR GAS MONITOR	- RMA1G	9.4027+01	CPM		GOOD
R1001	CR IODINE MONITOR	- RMA1I	7.0211+01	CPM		GOOD
R1002	CR PARTICULATE MONITOR	- RMA1P	5.6256+01	CPM		GOOD
R1003	WGDT DISCHARGE GAS MON	- RMA10	2.2198+02	CPM		GOOD
R1005	MPV MONITOR HIGH RANGE	- RMA13	2.0900-01	MR/HR		GOOD
R1006	RB GAS MONITOR	- RMA2G	6.8258+03	CPM		GOOD
R1007	RB IODINE MONITOR	- RMA2I	7.3424+04	CPM		GOOD
R1008	RB PARTICULATE MONITOR	- RMA2P	3.3006+03	CPM		GOOD
R1009	MPV GAS MONITOR	- RMA3G	9.8970+01	CPM		GOOD
R1010	MPV IODINE MONITOR	- RMA3I	9.0789+01	CPM		GOOD
R1011	MPV PARTICULATE MONITOR	- RMA3P	5.3774+02	CPM		GOOD
R1012	RAPE GAS MONITOR	- RMA4G	2.3060+01	CPM		GOOD
R1013	RAPE IODINE MONITOR	- RMA4I	1.0333+02	CPM		GOOD
R1014	RAPE PARTICULATE MON	- RMA4P	1.2913+02	CPM		GOOD
R1015	AB EXHAUST MONITOR A	- RMA5A	1.0419+01	CPM		GOOD
R1016	FHBE GAS MONITOR	- RMA6G	1.9671+02	CPM		GOOD
R1017	FHBE IODINE MONITOR	- RMA6I	2.0725+01	CPM		GOOD
R1018	FHBE PARTICULATE MON	- RMA6P	2.9430+02	CPM		GOOD
R1019	COND OFF GAS MONITOR	- RMA9	4.0215+02	CPM		GOOD
R1020	CP VENT HIGH RANGE	- RMA14	8.3968-02	MR/HR		GOOD
R1021	RB HI RANGE ION A	- RMG10	9.8949-01	R/HR		GOOD
R1022	RCS LTDN LO RANGE	- RML1L	3.7883+05	CPM		GOOD
R1023	RCS LTDN HI RANGE	- RML1H	8.7936+02	CPM		GOOD
R1024	SGBD DISCHARGE MONITOR	- RML10	1.7702+03	CPM		GOOD
R1025	AB EXHAUST MONITOR B	- RMA5B	2.1404+03	CPM		GOOD
R1027	SGBD SAMPLE MONITOR	- RML3	1.8790+03	CPM		GOOD
R1028	LIQUID WASTE EFFLUENT	- RML5	1.3716+04	CPM		GOOD
R1029	NB WASTE EFFLUENT MON	- RML7	2.1383+02	CPM		GOOD
R1030	WASTE DISCHARGE MONITOR	- RML9	1.4795+04	CPM		GOOD
R1031	RB HI RANGE ION B	- RMG7	0.0000+00	R/HR		BAD

SELECT FUNC. KEY OR TURN-ON CODE

GAPD13

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Attachment III
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GROUP DISPLAY

RADMON
5 SECOND UPDATE RATE

RADIATION MONITORS INSTANTANEOUS

PAGE 2 OF 2

POINT ID	DESCRIPTION		CURRENT VALUE	ENGR UNIT	ALARM LIMIT	QUAL CODE
R1032	MS A STMLINE MONITOR	- RMG19A	8.9956-02	HR/HR		GOOD
R1033	MS B STMLINE MONITOR	- RMG19B	9.7839-02	HR/HR		GOOD
R1034	MS C STMLINE MONITOR	- RMG19C	8.3484-02	HR/HR		GOOD
R1035	AB AREA MONITORS	- RMA11	1.1501+02	CPM		GOOD

F1=
PREV GRNG-2F2=TREND
KBD=NORMAL

F3=BAR

F4=

F5=
AMODE=POWER OPERATION

F6=

PLNT

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SELECT FUNC. KEY OR TURN-ON CODE EARNET

METEOROLOGICAL DATA

PID	DESCRIPTION	CURRENT DATA	CURRENT QUALITY	15 MIN. INTERVAL	60 MIN. INTERVAL	UNITS
M9001	WIND SPEED AT 10 METERS	9.04	G000	7.44	6.97	MPH
M9000	WIND DIRECTION AT 10 METERS	370.32	G000	5.54	356.39	DEGS
M9004	DELTA T 61 - 10 METERS	-0.95	G000	-1.13	-1.25	DEGF
M9003	WIND SPEED AT 61 METERS	8.90	G000	8.34	7.95	MPH
M9002	WIND DIRECTION AT 61 METERS	370.72	G000	4.35	354.09	DEGS
M9005	DELTA T 40 - 10 METERS	-0.68	G000	-0.79	-0.87	DEGF
M9008	AMBIENT TEMPERATURE (LOWER LEV)	73.25	G000	73.27	73.10	DEGF
M9006	DEW POINT TEMPERATURE	42.61	G000	45.00	43.94	DEGF
U8112	RELATIVE HUMIDITY	0.33	DALM			NONE
M9007	PRECIPITATION	0.33	G000	0.00	0.00	INCH

RADIATION MONITORING DATA

PID	DESCRIPTION	CURRENT DATA	CURRENT QUALITY	1 MIN. INTERVAL	60 MIN. INTERVAL	UNITS
R1009	MPV GAS MONITOR	74.88	G000	82.79	86.56	CPM
R1010	MPV IODINE MONITOR	86.58	G000	87.34	78.52	CPM
R1011	MPV PARTICULATE MONITOR	561.45	G000	542.90	550.09	CPM
R1005	MPV MONITOR HIGH RANGE	0.21	G000	0.21	0.21	NR/HR
R1012	RBPE GAS MONITOR	23.36	G000	21.77	20.91	CPM
R1013	RBPE IODINE MONITOR	109.92	G000	108.90	110.00	CPM
R1014	RBPE PARTICULATE MON	132.14	G000	131.48	123.52	CPM
R1020	CP VENT HIGH RANGE	0.09	G000	0.08	0.08	NR/HR
R1032	MS A STALINE MONITOR	0.09	G000	0.09	0.09	NR/HR
R1033	MS B STALINE MONITOR	0.10	G000	0.10	0.10	NR/HR
R1034	MS C STALINE MONITOR	0.09	G000	0.08	0.08	NR/HR

F1=CLEAR
PAGE 1 OF 1

F2= KBD=NORMAL

F4=

F5= AMODE=POWER OPERATION

F6=

PLNT