REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:7912180572 DOC.DATE: 79/12/10 NOTARIZED: NO DOCKET #
FACIL:50-206 San Onofre Nuclear Station, Unit 1, Southern Californ 05000206
50-361 San Onofre Nuclear Station, Unit 2, Southern Californ 05000361
50-362 San Onofre Nuclear Station, Unit 3, Southern Californ 05000362
AUTH.NAME AUTHOR AFFILIATION
BASKIN,K.P. Southern California Edison Co.
RECIP.NAME RECIPIENT AFFILIATION
* Office of Nuclear Reactor Regulation
BAER,R.L. Light Water Reactors Branch 2

SUBJECT: Forwards addl info re emergency planning in response to NRC 791031 request.Addl copies of responses re Units 2 & 3 will be transmitted w/Amend 17 of FSAR.Info is responsive to specific questions & NRC overall action plan.

DISTRIBUTION CODE: B021S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 23
TITLE: Dual Review Responsibility (DOR & DPM)

NOTES: ADD: EPB-DOR L 3 E 3

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
ACTION:	5 PM ROGR A. BURGER	1	1	AD D. EISENHUT LWR	1	0
	LA ORB #2 LWR #2	1	0			
INTERNAL:	1 REG FILE	1	1	11 I & E	2	2
	13 TA/EDO	1	1	14 CORE PERF BR	1	1
	15 ENGR BR	1	1	16 REAC SFTY BR	1	1
	17 EEB	1	1	18 PLANT SYS BR	1	1
	19 EFLT TRT SYS	1	1	2 NRC PDR	1	1
	20 BRINKMAN	1	1	21 EPB-DOR	1	1
	22 OPERA LIC BR	1	1	23 GEOSCI BR	2	2
	25 QAB	1	1	26 MECH ENG BR	1	1
	27 STRUC ENG BR	1	1	28 MATL ENG BR	1	1
	29 REAC SYS BR	1	1	3 LPDR	1	1
	30 ANALYSIS BR	1	1	31 AUX SYS BR	1	1
	32 CONTAIN SYS	1	1	33 I & C SYS BR	1	1
	34 POWER SYS BR	1	1	35 ACCDNT ANLYS	1	1
	36 RAD ASMT BR	1	1	37 KIRKWOOD	1	1
	38 HYD-METOR BR	1	1	39 ACRS	10	10
	4 NSIC	1	1	AD FOR ENG	1	0
	AD PLANT SYS	1	0	AD REAC SFTY	1	0
	AD SITE ANLYS	1	0	AD SITE TECH	1	0
	DIRECTOR NRR	1	0	OELD	1	0

1 CY. C. HOFMAYER, J. SHAPAKER
SEND ALL FSAR + ER AMENDMENTS TO L. CHANDLER

DEC 2 0 1979

MA
4

TOTAL NUMBER OF COPIES REQUIRED: LTTR ~~52~~ 58 ENCL ~~45~~ 48

60

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

K. P. BASKIN
MANAGER, GENERATION ENGINEERING

TELEPHONE
213-572-1401

December 10, 1979

Director of Nuclear Reactor Regulation
Attention: Mr. R. L. Baer, Chief
Light Water Reactor Branch No. 2
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-206
50-361
50-362
Emergency Plan
Responses to NRC Request for Additional Information
San Onofre Nuclear Generating Station, Units 1, 2, and 3

By letter dated October 31, 1979, you requested additional information concerning the Emergency Planning at the San Onofre Nuclear Generating Station. You requested that we respond to the questions within five weeks of receipt of your letter.

The information you requested is included in the enclosure and is intended to be responsive to your specific questions as well as the Commission's overall action plan to promptly achieve improved emergency preparedness. Some of the information is common to all three reactors, other is plant specific. For those questions which require plant specific responses, we have segregated the answers by Unit 1 responses and Units 2&3 responses. Additional copies of the responses pertaining to Units 2&3 will be transmitted with Amendment 17 of the Units 2&3 Final Safety Analysis Report.

If you have any questions, or desire further information concerning the Emergency Plan, please contact me.

Very truly yours,

KP Baskin/JH

Enclosure

cc: NRC Region V

D. L. Ziemann, Chief Operating Reactor, Branch No. 2
Division of Operating Reactors

B021
1/1
ADD:
EPB-DOR 33

7912180572

435.1 Describe the location and role of the onsite technical support center.

Response:

Unit One

The Onsite Technical Support Center (OTSC) is located in the visitors viewing area immediately adjacent to the control room, which provides direct visability into the control room. The role of the OTSC is to provide a center outside of the control room that acts in support of reactor operation in the event of an accident for use by technical and managerial personnel.

The OTSC is considered to be an operational entity at the present time and contains recently added dedicated telephone communications with the NRC and the Emergency Operations Center (located at the San Clemente City Hall), as well as commercial and private phone circuits. The OTSC is undergoing continuing upgrading and will meet the intent of the requirements established by NUREG-0578.

Units 2&3

The Onsite Technical Support Center (OTSC) will be located in the visitors viewing gallery and the instrument laboratory adjacent to the visitors viewing gallery, overlooking the combined Units 2&3 control room. The role of the OTSC is to provide a center outside of the control room that acts in support of reactor operation in the event of an accident for use by technical and managerial personnel. Communications capabilities similar to those in Unit 1 will be provided. The OTSC for Units 2&3 is, also, undergoing continuing upgrading and will meet the intent of the requirements established by NUREG-0578 prior to receipt of the operating license.

435.2 Describe the location of the onsite operational support center.

Response:

Unit One

The Onsite Operational Support Center (OOSC) is located in the conference room on the first floor of the Administration and Control Building.

Units 2&3

The Onsite Operational Support Center (OOSC) will be located in the conference room in the Administrative, Warehouse and Shop (AWS) Building.

All Units

In addition, an offsite Emergency Support Center has been established at the San Diego Gas and Electric business office in San Clemente, approximately 6 miles from the reactor site. This facility has been equipped with dedicated telephone communications with the onsite technical support centers, the control rooms, and the Emergency Operations Center (at which offsite emergency activities are coordinated).

435.3 Table 5-10 on page 5-20 of the Unit 1 Emergency Plan needs to be updated to that found in page 5-22 of the Unit 2&3 plan.

Response:

Revised Tables 5-9 and 5-10 on pages 5-19 and 5-20 were transmitted to your office in our letter dated September 21, 1976. The revised Tables 5-9 and 5-10 are enclosed for your convenience.

TABLE 5.9 ASSIGNMENTS OF STATE GOVERNMENT

Support Agency	FUNCTIONS										
	Planning	Training, Exercises	Alerting	Monitoring	Evacuation	Medical	Health	Welfare	Public Information	Recovery	Other
Office of Emergency Services	X	X	X	X					X		X
Health	X	X		X		X	X			X	X
Military	X	X			X	X		X			
California Highway Patrol	X	X		X	X						
Caltrans	X	X		X	X					X	
Fish and Game	X	X		X						X	
Parks and Recreation	X	X		X	X			X			X
Conservation	X	X		X				X			X

TABLE 5.10 ASSIGNMENTS OF CITY OF SAN CLEMENTE LOCAL SUPPORT AGENCIES

Local Support Agencies	FUNCTIONS											
	Planning	Training, Exercises	Emergency Evaluation	Evacuation	Medical	Health	Welfare	Communications	Transportation	Monitoring	Funding	Recovery
Fire Department	X	X			X	X		X		X		
Police Department	X	X		X				X				
Local Emergency Services Council	X		X				X					X
Public Works	X							X				
City Clerk	X						X					
City Manager	X										X	
Marine Safety	X			X				X		X		

435.4 Identify the onsite capability and resources to properly assess and categorize accidents. Specifically address the instrumentation for detection of inadequate core cooling and radiation monitoring capability. The radiation monitoring equipment identified on page 7-14 of the Unit 1 plan will require upgrading. Table 7.4 of the Unit 2&3 plan does not identify the operational effluent monitoring system. (See also item 435.7)

Response:

Unit One

The onsite capability and resources to properly assess and categorize accidents has been described in Section 2.1.3b and 2.1.8.b of the report "Reponses to NRC Requirements Established To-Date Following the Three Mile Island Accident, San Onofre Nuclear Generating Station, Unit 1, October, 1979" submitted to the NRC by letter dated October 17, 1979. The following summary of our response is provided below.

Procedures to be used by the operator to recognize inadequate core cooling with currently available instrumentation are being developed. The existing instrumentation which could indicate inadequate core cooling include core exit thermocouples and hot leg resistance temperatures detectors (RTD). Procedures and training have also been implemented regarding instrumentation available to detect core voiding and verify natural circulation as described in our response to I&E Bulletin 79-06A by letter dated June 26, 1979. In addition, a controls grade primary coolant saturation recorder will be installed to be used in conjunction with a saturation temperature/pressure curve which utilizes safety related instrumentation independent from that used for the saturation recorder. The recorder will receive input from a pressurizer pressure transmitter and a hot leg RTD from any of the reactor coolant loops, with switching capability to choose any one of the three hot leg temperature signals.

The Westinghouse Owners Group is currently performing analytical work in the area of inadequate core cooling to determine if additional instrumentation or controls are necessary to supplement that described above which would give an unambiguous, reliable indication of inadequate core cooling. A description of the functional design requirements for the system, the procedures to be used with the proposed equipment, the analysis used in developing these procedures and a schedule for installing the equipment will be submitted to the NRC following the evaluation.

Radiation monitoring capability is identified in Table 7-4 of the Unit 1 plan. In addition, a high range noble gas effluent monitor will be provided to give the capability to monitor the total range of concentration extending from normal condition (ALARA) concentrations to a maximum of 10^5 microcuries/cc (Xe-133). The capability for effluent monitoring of radioiodines for accident conditions shall be provided with sampling conducted by adsorption on charcoal or other media, followed by onsite laboratory analysis. Also, in containment radiation monitors with a maximum range of 10^8 rad/hr will be installed. The radiation monitoring equipment identified on page 7-14 of the Unit 1 plan will be upgraded to reflect these changes. The foregoing improvements will be implemented as soon as practical, thus meeting the requirements of NUREG-0578, Section 2.1.8.

During the intervening period, the existing Emergency Radiation Monitoring System (ERMS) will serve the functions assigned to the high range radiation monitors required by Section 2.1.8(b) of NUREG-0578. The ERMS consists of 3

channels of high level direct radiation monitors which cover the full range possible from a fission product release to the containment atmosphere as described in Regulatory Guide 1.4. The ERMS readings are an input to a calculational procedure designed to give offsite dose projections making use of real-time meterological dispersion data.

Units 2&3

The onsite capability and resources to assess and categorize accidents has been described in Sections II.A.1, II.A.2, II.A.3, and III.A.3 of the report "Evaluation and Action Plan for San Onofre Nuclear Generating Station Units 2 and 3 Relative to the Three Mile Island Incident, August, 1979," submitted to the NRC by letter dated August 16, 1979. This report is being updated and a revised version is scheduled to be submitted in December, 1979. A summary of the revised responses are provided below.

The procedures to be used by an operator to recognize inadequate core cooling with currently available instrumentation will be developed based on generic analyses being performed by the CE Owners Group as required by the NRC. Existing instrumentation which may be used for this purpose includes core exit thermocouples, hot leg resistance temperature detectors, pressurizer pressure and level instruments, steam generator pressure and level instruments, reactor coolant flow, RCP motor current, and excore source range detectors. In addition, a two-channel subcooled margin monitoring (SMM) system will be incorporated into the San Onofre Units 2 and 3 design to provide on-line control room indication of coolant saturation conditions. System implementation will be based on providing one safety-grade channel per loop of process input to the SMM system by upgrading the present control system temperatures and utilizing the present wide-range primary pressure sensors. The SMM system and associated procedures to integrate the use of the SMM system with the other related plant parameters will be developed and implemented prior to receipt of the operating license.

The CE Owners Group is currently performing analyses to determine the need for additional instrumentation to indicate inadequate core cooling. Procedures and installation of any equipment deemed necessary by this evaluation will be implemented prior to receipt of the operating license. The evaluation includes the development of the functional requirements and a conceptual design for a reactor vessel level measurement system.

Radiation monitoring capabilities are as identified in Table 7.4 of the Unit 2 and 3 plan. This table will be revised to reflect the process and effluent radiation monitoring system. The process and effluent radiation monitoring system is described in the Units 2 and 3 FSAR Table 11.5-1 and is provided here for your reference. In addition, a noble gas effluent monitor will be provided such that the capability exists to monitor the total range of concentration extending from normal condition (ALARA) concentrations to a maximum of 10^5 microcuries/CC (Xe-133). Post-accident radioiodine samples will be obtained from the stack by adsorption on silver zeolite cartridges. In addition, particulate samples will be obtained. These samples will be analyzed onsite. The capability for onsite laboratory analysis of these cartridges during accident conditions is currently being evaluated. Two redundant safety-grade radiation level monitors with a maximum range of 10^8 rad/hr will be installed in containment. Installation of the above equipment and preparation of associated procedure will be completed prior to receipt of the operating license.

1-320.3

Table 11.5-1
CONTINUOUS PROCESS AND EFFLUENT RADIATION MONITORING (Sheet 1 of 4)

Sampler/Monitor Location[a]	Quantity	Sampler Type	Detector Type	Activity Measured	Calibration Isotope	Range ($\mu Ci/cm^3$)	Expected Concentrations ($\mu Ci/cm^3$)	Alarm Setpoint ($\mu Ci/cm^3$)	Power Supply	Automatic Actions Initiated
Waste gas header (WGH) monitor (2/3RT-7814; figure 9.3-8)	1	On-line/gas	Low range: β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	LMD[b]	$2x10^{-6}$	Instrumentation ac bus	Alarm only
			High range: β scintillation	Gross β	Kr-85	10^{-3}-10^{2}	1.8 Kr-85	$9x10^{1}$ Kr-85[h]	Instrumentation ac bus	Alarm and initiate closure of waste gas discharge valve
Neutralization sump discharge (NSD) Monitor (2RT-7817 and 3RT-7817 figure 10.4-2 sh 1)	2 (1 per unit)	Offline/ liquid	γ scintillation	Gross γ	Cs-137	10^{-6}-10^{-1}	$2.4x10^{-6}$ Cs-137	$4.5x10^{-4}$ Cs-137	Instrumentation ac bus	Alarm and stops flow
Component cooling water (CCW) monitor (2RT-7819 and 3RT-7819; figure 9.2-1 sh 2)	2 (1 per unit)	Offline/ liquid	γ scintillation	Gross γ	Cs-137	10^{-6}-10^{-1}	LMD	$2x10^{-6}$ Cs-137	Instrumentation ac bus	Alarm only
Radwaste discharge line (RDL) monitor (2/3RT-7813; figure 11.2-1 sh 2)	1	Offline/ liquid	γ scintillation	Gross γ	Cs-137	10^{-6}-10^{-1}	$7.2x10^{-4}$ Cs-137 $1.0x10^{-3}$ Cs-134 $4.4x10^{-5}$ I-31	$5.8x10^{-3}$ Cs-137	Instrumentation ac bus	Alarm and initiate closure of radwaste discharge valve
Turbine plant area sump (TPAS) monitor (2RT-7821 and 3RT-7821; figure 9.3-2 sh 2)	2 (1 per unit)	Offline/ liquid	γ scintillation	Gross γ	Ba-133[f]	10^{-6}-10^{-1}	LMD	$6.1x10^{-4}$ I-131	Instrumentation ac bus	Alarm and divert discharge to the radwaste sump

a. See section 1.7 for inclusion of P&ID numbers by reference.
b. LMD is less than minimum detectable.
c. Expected concentrations are based on 16-hour recirculation with concurrent RCS leakage into the containment.
d. In expected concentrations column, the first number refers to conditions where a GRS release is in progress/second number reflects no GRS discharge.
e. The low range monitor is used to determine first incidence of steam generator tube leakage in conjunction with failed fuel. Hence initial expected concentrations are less than minimum detectable for that monitor.
f. Ba-133 is the calibration isotope for I-131
g. Kr-85 is the calibration isotope for Xe-133.
h. Alarm setpoint assumes a discharge flowrate of 1 standard ft^3/min.

Table 11.5-1
CONTINUOUS PROCESS AND EFFLUENT RADIATION MONITORING (Sheet 2 of 4)

Sampler/Monitor Location[a]	Quantity	Sampler Type	Detector Type	Activity Measured	Calibration Isotope	Range ($\mu Ci/cm^3$)	Expected Concentrations ($\mu Ci/cm^3$)	Alarm Setpoint ($\mu Ci/cm^3$)	Power Supply	Automatic Actions Initiated
Radwaste condensate return (RCR) monitor (2/RT-7812 figure 11.2-1 sh 1)	1	Offline/ liquid	γ scintillation	Gross γ	Cs-137	10^{-6}-10^{-1}	LMD	2×10^{-6} Cs-137	Instrumentation ac bus	Alarm and divert flow to miscellaneous wastes tank
Containment airborne (CA) monitor (2RT-7804-1, 3RT-7804-1, 2RT-7807-2, and 3RT-7807-2; figure 9.4-2 sh 1)[c]	4 (2 per unit)	Gas	β scintillation	Gross β	Kr-85[g]	10^{-6}-10^{-1}	4.6×10^{-3} Xe-133 4.7×10^{-5} Ar-41	2.7×10^{-2} Xe-133	Vital ac buses	Alarm and initiate containment purge isolation
		Moving paper particulate filter	β scintillation	Gross β	Cs-137	10^{-9}-10^{-4}	LMD	1.8×10^{-5} Cs-137	Vital ac buses	Alarm and initiate containment purge isolation
		Fixed Charcoal Cartridge	γ scintillation/single channel analyzer	Gross γ/ I-131γ	Ba-133	10^{-9}-10^{-4}	4.7×10^{-9} I-131	1.4×10^{-5} I-131	Vital ac buses	Alarm and initiate containment purge isolation
Plant vent stack airborne (PVSA) monitor (2/3R-7808; figure 9.4-9 sh 1)[d]	1	Offline/gas	β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	5.4×10^{-4}/ LMD Kr-85	6.3×10^{-4}/ 6.3×10^{-5} Kr-85	Instrumentation ac bus	Alarm and initiate closure of the waste gas discharge valve
		Offline/ isokinetic/ moving paper particulate filter	β scintillation	Gross β	Cs-137	10^{-9}-10^{-4}	LMD/LMD	4.2×10^{-6}/ 1.7×10^{-7} Cs-137	Instrumentation ac bus	Alarm and initiate closure of the waste gas discharge valve
		Offline/ isokinetic/ fixed charcoal cartridge	γ scintillation/single channel analyzer	Gross γ/ I-131 γ	Ba-133	10^{-9}-10^{-4}	6.5×10^{-9} LMD I-131	3.3×10^{-6}/ 1.3×10^{-7} I-131	Instrumentation ac bus	Alarm and initiate closure of the waste gas discharge valve

1-320.3

Table 11.5-1
CONTINUOUS PROCESS AND EFFLUENT RADIATION MONITORING (Sheet 3 of 4)

Sampler/Monitor Location[a]	Quantity	Sampler Type	Detector Type	Activity Measured	Calibration Isotope	Range ($\mu Ci/cm^3$)	Expected Concentrations ($\mu Ci/cm^3$)	Alarm Setpoint ($\mu Ci/cm^3$)	Power Supply	Automatic Actions Initiated
Radwaste disposal area vent airborne (RDAV) monitor (2/3R-7809; figure 9.4-8 sh 2)	1	Offline/gas is	β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	LMD	7.3×10^{-6} Kr-85	Instrumentation ac bus	Alarm only
		Offline/ isokinetic/ fixed particulate filter and charcoal cartridge	γ scintillation/single channel analyzer	Gross γ/ I-131 γ	Cs-137 Ba-133	10^{-9}-10^{-4}	LMD/LMD	2.0×10^{-7} Cs-137 2.3×10^{-7} I-131	Instrumentation ac bus	Alarm only
Fuel handling area vent airborne (FHAV) monitor (2RT-7822-1, 3RT-7822-1, 2RT-7823-2, 3RT-7823-2; figure 9.4-9 sh 2)	4 (2 per unit)	Offline/gas sampler	β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	LMD	2×10^{-6} Kr-85	Vital ac buses	Alarm and initiate isolation of the fuel handling area from the normal ventilation system and actuation of the fuel handling area accident cleanup unit
		Offline/ isokinetic/ fixed particulate filter and charcoal cartridge	γ scintillation/single channel analyzer	Gross γ/ I-131 γ	Cs-137/ Ba-133	10^{-9}-10^{-4}	LMD/LMD	2×10^{-9} Cs-137/ 2×10^{-9} I-131	Vital ac buses	Alarm and initiate isolation of the fuel handling area from the normal ventilation system and actuation of the fuel handling area accident cleanup unit
Control room airborne (CRA) monitor (2/3RT-7824-1) and 2/3RT-7825-2; figure 9.4-8 sh 1)	2	Offline/gas	β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	LMD	2×10^{-6} Kr-85	Vital ac buses	Alarm and initiate isolation of the normal control room ventilation system and actuation of the emergency cleanup system
		Offline/ isokinetic/ fixed particulate filter and charcoal cartridge	γ scintillation/single channel analyzer	Gross γ/ I-131 γ	Cs-137/ Ba-133	10^{-9}-10^{-4}	LMD/LMD	2×10^{-9} Cs-137/ 2×10^{-9} I-131	Vital ac buses	Alarm and initiate isolation of the normal control room ventilation system and actuation of the emergency cleanup system

Table 11.5-1
CONTINUOUS PROCESS AND EFFLUENT RADIATION MONITORING (Sheet 4 of 4)

Sampler/Monitor Location[a]	Quantity	Sampler Type	Detector Type	Activity Measured	Calibration Isotope	Range ($\mu Ci/cm^3$)	Expected Concentrations ($\mu Ci/cm^3$)	Alarm Setpoint ($\mu Ci/cm^3$)	Power Supply	Automatic Actions Initiated
Condenser air ejector gas (CAEG) monitor[e] (2RT-7818 and 3RT-7818; figure 9.4-9 sh 2)	2 (1 per unit)	Offline/gas	Low range: β scintillation	Gross β	Kr-85	10^{-6}-10^{-1}	LMD	$2x10^{-6}$ Xe-133	Instrumentation ac bus	Alarm only
			High range: γ scintillation/single channel analyzer	Gross γ/ I-131γ	Kr-85	10^{-3}-10^{2}	LMD	$8.2x10^{-2}$ Xe-133	Instrumentation ac bus	Alarm only
		Offline/ isokinetic/ fixed particulate filter	No detector							
		Offline/ isokinetic/ fixed charcoal cartridge	No detector							

1-320.3

1-320.3

435.5 What provisions have been made for dissemination of educational information to the public within the plume exposure Emergency Planning Zone regarding the warning procedures to be used in the event of a serious accident?

Response:

At the present time, the warning procedures for notifying the public in the event of a serious accident involve direct announcements to the public by means of: (1) fixed loudspeakers located around the station site perimeter primarily intended for warning people at nearby beach and park locations, and (2) mobile loudspeakers located on official emergency vehicles for use in warning people at the nearby Camp Pendleton family housing area, the residents of San Clemente, and any other outlying areas potentially subject to plume exposure. Because such procedures are well known to the public, entail direct communications in plain language and can be tailored to precisely fit the threat of that time, special dissemination of educational information to the public regarding this method has not been considered necessary or useful. For this reason, there does not presently exist a program of a public educational nature, in the communities near San Onofre, designed to educate the public concerning the means by which they would be notified in the event of a serious accident. However, many interested people in the community have learned of these warning procedures by the normal process of responding to public inquiries on this subject by the utilities and local governmental authorities.

SCE will be working with the responsible public agencies to develop systems or approaches designed to achieve the capability of more rapid early warning in the Plume Exposure Zone, and, to the extent necessary, appropriate programs of public education so that the populace will correctly recognize the warning and otherwise respond in the manner expected of them. In our dealings with the local governmental authorities, we are urging that improved warning systems and attendant public education programs be in place consistent with the Commission's Implementation Category of January 1, 1981.

435.6 Describe the resources that will be used if necessary to provide early warning and/or protective action instructions to the populace within the Emergency Planning Zone associated with the plume exposure pathway within 15 minutes following notification from the facility operator to the offsite authorities.

Response:

Southern California Edison Company will provide immediate warning and protective action instructions to those persons within the state beach, parks, and recreation areas via a siren and powerful loudspeaker announcing system operated from the Control Room in the event of a serious accident at the San Onofre Nuclear Generating Station. In addition, the SONGS operator will provide notification and protective action recommendations to offsite governmental and military authorities immediately via dedicated telephone circuits or backup communications systems. These offsite agencies will provide early warning protective action instructions to the populace using mobile loudspeaker announcements from emergency vehicles traveling street-by-street.

The Company, in support of local governmental authorities, will explore the feasibility of more rapid warning systems for the prompt alerting and issuance of instructions to the public within the plume exposure pathway Emergency Planning Zone. This effort will evaluate options such as tone alert, siren and other alternatives not yet defined. In addition, SCE will implement early warning and/or protective action requirements of 10CFR Part 50, Appendix E.

435.7 Identify the onsite capability and resources to provide valid and continuing assessment through the course of an accident including (See also item 4):

a. Post accident sampling

b. In-plant iodine instrumentation

c. Plots showing the containment radiation monitor vs. time following an accident for incidents involving 100% release of coolant activity, 100% release of gap activity, 1% release of fuel inventory, and 10% release of fuel inventory.

Response:

Unit One

Equipment included in response to item 435.4 partially address the Unit One capability to provide valid and continuing assessment through the course of an accident. In addition, a design and operational review of the reactor coolant and containment atmosphere sampling systems is being performed to determine the capability of personnel to obtain samples in a timely manner during accident conditions without exposing any individual in excess of 3 and 18 3/4 Rems to the whole body or extremities, respectively. Being considered is the installation of a new emergency sample room to perform radiological spectrum and chemical analysis. After the design review is completed, any additional design features and/or additional shielding that are required to insure that personnel will be able to promptly and safely obtain the necessary samples will be completed.

A Westinghouse Owner's Group is currently studying methods to perform radiological spectrum and chemical analyses. This study will include development of guidelines for sample preparation, evaluation and recommendations regarding application of automatic or in-line analyses, review of alternative manual analysis procedures, and specification of minimum capability for spectroscopy equipment.

Equipment for gamma energy spectrum analysis to determine the airborne iodine concentrations currently exist at San Onofre Unit 1. Procedures for utilizing this equipment to determine airborne iodine concentrations under accident conditions will be reviewed and revised, as required, and the associated training conducted by January 1, 1980. This will include the use of various portable air samplers and silver zeolite cartridges to prevent adsorption of the noble gases.

Plots showing the containment radiation monitor readings vs. time following an accident for conditions involving various releases of core activity will be prepared as soon as practical, but prior to operation of the high range in containment radiation monitors.

Units 2 and 3

Equipment included in response to item 435.4 partially addresses the Units 2 and 3 capability to provide valid and continuing assessment through the course of an accident. In addition, a design review is being performed on the reactor coolant and containment atmosphere sampling system to determine the capability of personnel to obtain a sample under accident conditions without incurring a radiation exposure to any individual in excess of 3 Rems whole

body and 18 3/4 Rems to the extremities. Being considered is the installation of a new emergency sample room to perform radiological spectrum and chemical analyses. After the design review is completed, any additional design features and/or additional shielding that are required to insure that personnel will be able to promptly and safely obtain the necessary samples will be completed.

A design review is being performed on the radiological spectrum analysis facility to determine its capability to analyze in a post-accident environment for the radioisotopes which are the indicators of the degree of core damage. Design or procedural changes indicated by the review will be implemented.

Equipment and/or instrumentation will be provided for accurately determining in-plant airborne radioactive iodine concentrations under accident conditions. This will include the use of various portable air samplers and silver zeolite cartridges to prevent adsorption of the noble gases.

Plots showing the containment radiation monitor readings vs. time following an accident for conditions involving various releases of core activity will be prepared prior to receipt of the operating license.

435.8 Page 7-20 of the Unit 1 Plan should be revised to reflect the upgraded environmental monitoring program specified in Table 7.7, page 7-26 of the Unit 2&3 Plan.

Response:

Table 7.7, page 7-20, of the Unit 1 Plan will be revised to reflect the upgraded environmental program specified in Table 7.7, page 7-26, of the Unit 2&3 Plan. SCE currently has under consideration the establishment of additional TLD monitoring locations modeled after the revised technical position issued by the NRC Radiological Assessment Board for the Environmental radiological monitoring program.

435.9 What is the location of the contractor that will provide the offsite radiological analysis specified in Table 7.7? This information is necessary in order to assess the timeliness of radioanalysis support in times of emergency conditions.

Response:

The contractor is LFE Environmental Analysis Laboratories, located in Richmond, California

LFE Environmental Analysis Laboratories has stated that in the event of an accident at the San Onofre Nuclear Generating Station all of their resources will be directed towards assistance in offsite radioanalysis. Accordingly, response times for various analyses will be dependent on transport time and physical analysis requirements. Some examples of analysis times from receipt at Oakland International Airport follow:

Analysis	Results available
TLD	within 2 hrs
Air samples	within 5 hrs
Water	qualitative within 3 hrs
	quantitative within 24 hrs
Leafy Vegetation (Iodines)	qualitative within 5 hrs
	quantitative within 3 days

Transport time to Oakland International Airport can be assumed to be approximately 3 hours.

435.10 What agencies will allocate resources i.e., manpower and equipment to perform real-time radiological field assessments of accidental radiological releases? Describe the methods and equipment to be employed in determining the magnitude and locations of any radiological hazards following radioactive releases.

Response:

The following agencies will allocate resources to perform real-time radiological field assessments of accidental radiological releases:

Marine Corps Base, Camp Pendleton

Orange County Health Department

San Diego County Health Care Agency

California State Department of Health, Radiological Health Section

All of these agencies use standard Civil Defense Monitoring Equipment i.e., CD V-777, Jordan Radgun and dosimeters. Surface monitoring teams will be dispatched by the Orange and San Diego counties to the appropriate sectors to locate and determine the extent of the contaminated areas. The monitoring teams will report their information to their respective Command Post via radio and/or telephone. The Command Posts will report their information to the Emergency Operations Center in San Clemente. In addition, activation of the federal Interagency Radiological Assistance Team can be requested through the State Office of Emergency Services.

435.11 Are the agreement letters in Appendix A of the Emergency Plan still valid? What provisions are there for insuring their continued validity?

Response:

All agreement letters in Appendix A of the Emergency Plan are still valid. Southern California Edison is preparing a formatted letter which will renew agreements every two years, concurrent with the biennial review of the plan.

435.12 Describe how the public will be notified of evacuation or other protective measures within the Emergency Planning Zone associated with the plume exposure pathway. (See also item 435.6).

Response:

The response to question 435.6 partially addresses this question.

Pages 26-32 of the Joint Agency Evacuation Plan in Volume II of the Unit One and Units 2 and 3 Emergency Plans describe how the public will be notified of evacuation or other protective measures in detail.

This plan describes a three phase notification scheme. The first phase encompassing notification of the near site personnel i.e., workers at the Unit 2&3 construction area, and people within the State Beach areas. Instructions regarding evacuation will initially be given to these people via a loudspeaker system following a siren alert. Evacuation routes are posted and State Parks and Recreation personnel will use portable and mobile equipment to inform evacuees in the beach areas. Phase II includes notificaton of personnel within Marine Corps Base, Camp Pendleton, and the City of San Clemente, Zone 1, which will be accomplished by Emergency Vehicles with PA systems by military personnel and San Clemente Fire and Police vehicles, respectively. Four local radio stations will broadcast complete evacuation/protective action instructions.

Phase III includes notification of the City of San Clemente, Zones II and III and out to the boundary of the plume exposure Emergency Planning Zone, which will be conducted similarly to that listed above.

435.13 The San Onofre emergency plan must provide in addition to the drills and exercises identified a Regulatory Guide 1.101, a joint exercise involving Federal, State, and local response organizations.

The scope of such an exercise should test as much of the emergency plans as is reasonably achievable without involving full public participation. Definitive performance criteria should be established for all levels of participation to assure an objective evaluation. This joint test exercise will be scheduled about once every five years.

Response:

Southern California Edison will cooperate with the NRC and Federal agencies to schedule and conduct a joint exercise of emergency plans about once every five years.

S35.14 Chapter 4 should incorporate the emergency classes, the initiating conditions and the immediate actions identified in Appendix I. The example initiating conditions for each class should be supplemented, where possible, by the specific plant instrumentation readings which will initiate the emergency class. Table 4.1 is an excellent means of portraying the immediate actions being taken by specific utility personnel. Therefore, it is recommended that this table be kept and expanded as necessary to incorporate the guidance provided in Appendix I.

Response:

The revised San Onofre Unit One Emergency Plan will be issued by mid-1980 and will make use of the emergency classes, the initiating condition and the immediate actions identified in NUREG-0610. Preparation for the implementation of these action level criteria is proceeding at the present time. It is intended that such a system will be in place as soon as it is ready and well in advance of the issuance of the revised Emergency Plan. Similarly, the San Onofre Units 2&3 Emergency Plan will be revised prior to receipt of the operating license. The specific action level criteria, supplemented, where possible, by specific plant intrumentation readings, are currently under development and will meet the intent of the requirements issued by the NRC (NUREG-0610).