UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
UNION ELECTRIC COMPANY	)	Docket No. STN 50-483 OL
	)	
(Callaway Plant, Unit 1)	)	

AFFIDAVIT OF NEAL G. SLATEN
ON REED CONTENTION 17
(RADIOLOGICAL MONITORING)

City of St. Louis)
) ss.
State of Missouri)

NEAL G. SLATEN, being duly sworn, deposes and says as follows:

1. I am the Supervising Engineer - Environmental, for Union Electric Company. In the event of a Site or General radiological emergency at the Callaway Plant, I will serve as Radiological Assessment Coordinator. My business address is Union Electric Company, P.O. Box 149, St. Louis, Missouri 63166. A summary of my professional qualifications and experience is attached hereto as Exhibit "A". I have personal knowledge of the matters stated herein and believe them to be

true and correct. I make this affidavit in response to Reed Contention 17 (Radiological Monitoring).

2. As the Supervising Engineer - Environmental, my normal responsibility is to direct the Union Electric Company corporate Environmental and Health Physics Group, which at present consists of two health physicists and two engineers. My duties include: supporting federal, state and local licensing activities; reviewing radwaste, shielding and radiation monitoring system engineering design work; establishing and evaluating off-site radiological environmental monitoring programs; establishing corporate ALARA policy; reviewing conformance to radiological technical specifications; and other duties related to health physics and environmental assessment.

3. During a Site or General Emergency at the Callaway Plant my duties as the Radiological Assessment Coordinator would include: evaluating and relaying radiological information to the Union Electric Recovery Manager concerning the need to make protective action recommendations to off-site authorities; ensuring the coordination of off-site field monitoring activities; and ensuring that the Union Electric Recovery Manager is kept appraised of field monitoring results and off-site dose assessment.

4. The purpose of this affidavit is to describe the off-site radiological monitoring capability of Union Electric Company ("UE") in the event of a radiological emergency at the Callaway Plant.

5. Sections II.I.7, II.I.8 and II.I.9 of NUREG-0654, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," referred to by Mr. Reed in Contention 17, relate to off-site radiological monitoring capability. In evaluating the capability of responsible organizations and entities to adequately monitor off-site radiation doses in the event of an emergency at the Callaway Plant, consideration must be given to UE's off-site radiological monitoring program. An extensive radiological monitoring organization and capability is a part of UE's planned response in the event of a radiological emergency at the Callaway Plant. The monitoring capability of the State of Missouri serves as a means of verifying the findings of UE's monitoring program. UE's monitoring capabilities satisfy the criteria of NUREG-0654. The Callaway Plant Radiological Emergency Response Plan ("RERP"), chapters 5, 6 and 7, contains a detailed description of UE's off-site monitoring program and resources. This affidavit is essentially based on that description.

<u>The Emergency Response Monitoring Organization</u>

6. UE's monitoring program is an integral part of the three distinct UE emergency response organizations capable of responding on a 24-hour-per-day basis to emergencies at the Callaway Plant. In the event of an emergency which requires implementation of the RERP, <u>e.g.</u>, an Unusual Event, the normal

on-shift organization becomes the On-shift Emergency Organization. This organization operates from the control room. In the event of an Alert or higher emergency classification, the On-site Emergency Organization is activated. This organization operates from the Technical Support Center ("TSC"), the control room and the Operational Support Center ("OSC"). In the event of a Site or General Emergency, the Corporate Emergency Organization is activated. This organization operates from the Emergency Operations Facility ("EOF"). The RERP, § 5.2, describes these UE emergency response organizations.

7. The On-shift Emergency Organization, responsible for initial immediate emergency response, includes the on-shift rad/chem foreman, who assumes the emergency position of Health Physics ("HP") Coordinator. Among other things, the rad/chem foreman is responsible for off-site dose assessment activities until activation of the TSC, at which time the permanent HP Coordinator assumes this responsibility. On-shift rad/chem technicians, approximately two per shift, report to the rad/chem foreman. These individuals are responsible for conducting health physics activities, including field monitoring.

8. The On-shift Emergency Organization is staffed to be self-reliant for a sufficient period of time, which is anticipated to be approximately 30 to 75 minutes, to allow for mobilization of the On-site Emergency Organization. Figure 5-5

of the RERP, attached as Exhibit "B", is a diagram of that organization. One of the members of the On-Site Emergency Organization is the HP Coordinator, who is responsible for directing in-plant health physics and off-site dose assessment. He reports to the Emergency Coordinator, who is in charge of all emergency response activities. Upon activation of the EOF, the responsibility for off-site dose assessment is transferred from the HP Coordinator to the Radiological Assessment Coordinator ("RAC") in the EOF. The following five individuals will be trained for the position of HP Coordinator: Superintendent, Health Physics; Supervisor, Health Physics Operations; Supervisor, Health Physics Technical Support; and two staff health physicists and/or nuclear scientists.

9. Working for the HP Coordinator in the TSC is the Dose Assessment Coordinator. This individual assumes the responsibility for calculating off-site dose projections from the On-shift Emergency Organization. He directs off-site field monitoring activities through the Field Team Communicator, who coordinates communications with the Field Monitoring Teams, logs radiological field data as it is received, and reports this information to the Dose Assessment Coordinator. Upon the activation of the EOF, both the Dose Assessment Coordinator and the Field Team Communicator's responsibilities are transferred to individuals with the same titles located in the EOF. Plant personnel trained for the position of Dose Assessment Coordinator include all of the individuals trained as HP Coordinator,

with the exception of the Superintendent, Health Physics, as well as the rad/chem foremen. There are approximately 30 rad/chem technicians trained for the position of Field Team Communicator.

10. Also reporting to the HP Coordinator is the Radiological Controls ("Rad Con") Coordinator. Among the Rad Con Coordinator's responsibilities are: (i) forming, briefing and dispatching Field Monitoring Teams as directed by the HP Coordinator; (ii) ensuring the briefing and debriefing of all emergency teams before entering and after leaving a radiological area; and (iii) ensuring health physics equipment is available to support emergency assessment activities. Approximately ten rad/chem foremen will be trained for the position of Rad Con Coordinator. The rad/chem technicians report to the Rad Con Coordinator.

11. UE has the capability to field four Field Monitoring Teams per shift. These teams will collect radiological samples in the field for verification of dose projections. Each team consists of two members of which at least one member is a rad/chem technician. The other individual is a member of the plant staff who serves as the vehicle driver and assists the technician as required. The teams report to and establish communications with the Field Team Communicator.

12. Upon activation of the Corporate Emergency Organization, the coordination of off-site radiological monitoring shifts to the EOF. The Recovery Manager, located at the EOF,

has overall command and control of the entire UE emergency response organization. Among other responsibilities, the Recovery Manager makes protective action recommendations to off-site authorities, a task assumed by the Emergency Coordinator prior to activation of the Corporate Emergency Organization, and ensures that there is a coordinated emergency response among UE and off-site agencies, such as the State Bureau of Radiological Health ("BRH").

13. An Off-site Liaison Coordinator, located in the EOF, assists the Recovery Manager by, among other things, transmitting radiological information to and receiving any responding representations from off-site organizations. The Off-site Liaison Coordinator also assists the Recovery Manager in coordinating UE emergency response with off-site agencies. The Manager, Nuclear Safety and Emergency Preparedness, and the Supervisor, Emergency Preparedness, will be trained for this position. Working for the Off-site Liaison Coordinator are two EOF Communicators, who notify and communicate with off-site agencies as directed.

14. Reporting to the Recovery Manager is the Radiological Assessment Coordinator ("RAC"), who assumes the responsibilities of off-site dose assessment from the HP Coordinator. RAC responsibilities include: (i) evaluating and relaying radiological information to the Recovery Manager concerning the need to make protective action recommendations to off-site authorities; (ii) ensuring the coordination of off-site field

monitoring activities through the EOF Dose Assessment Coordinator; and (iii) ensuring the Recovery Manager is kept appraised of field monitoring results and other off-site dose assignment activities. Personnel trained for this position are the Supervising Engineer, Nuclear Environmental, as well as two staff health physicists.

15. Assisting the RAC is the EOF Dose Assessment Coordinator who assumes the responsibilities of the Dose Assessment Coordinator in the TSC described in paragraph 9, above. The EOF Dose Assessment Coordinator performs dose projection calculations and provide the RAC with the results of his evaluation. Six staff health physicists and approximately ten rad/chem foremen will be trained for this position.

16. Reporting to the Dose Assessment Coordinator at the EOC is the Field Team Communicator, who assumes the responsibilities of the Field Team Coordinator located at the TSC described in paragraph 9, above. The rad/chem foremen and approximately 30 rad/chem technicians will be trained for the position of Field Team Communicator.

17. The response organization described above coordinates its radiological monitoring and assessment effort with BRH, whose responsibilities in the event of a radiological accident at the Callaway Plant are described generally in § 5.4.2.2 of the RERP, and in detail in Annex A of the Missouri Nuclear Accident Plan - Callaway ("State Plan"). UE has provisions for receiving BRH representatives at the EOF at ALERT or higher

emergency clas ication levels. Office space and communication facilities are provided in the EOF for BRH representatives.

Assessment of Radiological Releases

18. Effective coordination and direction of all elements of the emergency organizations, including public agencies, requires continuing assessment throughout the emergency. Priority will be given to continuing assessment actions that will result in maintaining control of the plant, protective action recommendations for the health and safety of the general public, protective actions for on-site personnel, and corrective actions in order to mitigate the consequences of an emergency.

19. Incidents involving potential or actual releases of radioactive materials to the environment require special methods of assessment to ensure that responses are appropriate for protection of the population at risk and site personnel. Rapid assessment of potential or actual releases of radioactivity to the environment is critical for deciding what protective actions will be required. Within 30 to 60 minutes of the declaration of an emergency, and within 30 to 45 minutes of a release, a UE monitoring program will be established to assess the extent of the release and to provide guidance for appropriate protective measures. This incudes the capability to deploy one or more Field Monitoring Teams.

20. The principal immediate health concerns are radiological exposure to the thyroid gland due to inhalation of radioactive iodines and to the whole body from immersion in a cloud of radioactive noble gases. Criteria for taking protective actions such as sheltering and evacuation are expressed in terms of these two variables. Early efforts of off-site government agencies will be directed toward this assessment. Following this, efforts by off-site authorities normally will be directed toward the evaluation of possible long-term exposures from ground deposition and various food chain pathways.

21. A short term assessment to determine off-site doses will be performed by UE with the use of its Radioactive Release Information System ("RRIS"). The RRIS provides near real-time predictions of atmospheric transport and diffusion estimates of radioactive releases. This information is provided to the control room, TSC, EOF, Backup EOF, and the on-site health physics office. (The Health Physics Office is located in the Control Building at elevation 1984'. This office is used by health physics personnel for issuing radiation work permits and monitoring and controlling access to plant radiological areas.) The RRIS utilizes real-time meteorological data, radioactive release rate data, isotopic concentrations, release flow rate data, and site-specific terrain and climatological features that affect atmospheric diffusion and the trajectories of the plume. This data is automatically transmitted to the RRIS.

The RRIS output includes the plume position, the location, magnitude and arrival time of peak concentrations, and thyroid and whole body dose rates and cumulative dose. The NRC also will receive this data through the NRC Nuclear Data Link interface with the RRIS. In the event the computer is inoperable, manual calculations can be performed by the Dose Assessment Coordinator in a short timeframe. Based on off-site dose projections, protective action will be taken as specified in Annex B of the State Plan.

22. The Field Monitoring Teams are used to verify the initial assessment of off-site radiological conditions performed with the use of the RRIS. Deployment of Field Monitoring Teams is anticipated to occur within 30 to 45 minutes from the time a release is discovered or expected. Field Monitoring Teams will be equipped with health physics monitoring instrumentation to evaluate actual off-site dose rates and airborne radioactivity concentrations. Instrumentation available to the monitoring team(s) includes: low and high range beta-gamma survey meters, a rate meter instrument w/gm pancake probe, portable single channel analyzer with NaI detector, and an air sampler with supply of filter media and silver zeolite cartridges. This instrumentation provides the Field Monitoring Teams with the capability to analyze airborne and liquid environmental samples as well as the ability to monitor for surface contamination. In-field evaluation of radioiodine levels is accomplished by sampling

with a low volume air sampler using a silver zeolite cartridge as the collection media. Analysis of the cartridge is performed by using portable gamma spectroscopy equipment in the field. The sensitivity of this method enables measurement of iodine concentrations as low as 10^{-7} microcuries/cubic centimeter under low, background counting conditions. Table E-1, attached as Exhibit "C", from Appendix E of RERP, is a list of the portable radiation monitoring devices available to UE health physics personnel.

23. Specific guidance for sampling and analysis for environmental radioiodine levels will be provided in an RERP implementing procedure. Data will be reported by Field Monitoring Teams via radio to the Field Team Communicator, who then relays this information to the Health Physics Coordinator or the Dose Assessment Coordinator.

24. Long-term radiological assessment normally will be directed toward the evaluation of possible exposures from ground deposition and various food chain pathways. To accomplish this analysis, soil, vegetation, milk and water samples will be taken in accordance with the Radiological Environmental Monitoring Program ("REMP"). The REMP consists of sampling the following: (a) air particulate - sampled at 14 locations surrounding the plant; (b) air iodine - sampled at 7 locations surrounding the plant; (c) gamma dose - sampled at 52 TLD locations surrounding the plant; (d) soil - collected at 4 sites ~~surrounding the plant; (e)~~ vegetation - green broad leaf

vegetation is collected at 4 sites surrounding the plant; (f) milk - both cow and goat milk is collected at 3 sites surrounding the plant; (g) surface water - Missouri River Water is collected both upstream and downstream of the plant and at the St. Louis City Drinking Water Intake station; (h) ground water - collected at 3 wells surrounding the plant; (i) river sediment - collected from the Missouri River both upstream and downstream of the plant and at the western border of St. Louis County; and (j) fish - collected from the Missouri River both upstream and downstream of the plant and at the western border of St. Louis County. The analysis performed on each sample and the analysis frequency are shown on Exhibit "D".

Radiological Monitoring Equipment

25. The equipment available to UE to be used to aid in or for use in conjunction with the assessment of off-site radiation levels, includes:

(1) the radiological monitoring equipment described above in ¶ 22 and listed in Exhibit "C".

(2) the RRIS, described above in ¶ 21.

(3) a permanent, fully equipped analytical laboratory, located in the EOF, which is a backup facility to the laboratories located on-site, including the hot chemistry lab and the counting room. The EOF lab has the

capability to support radiochemistry analysis and the evaluation of radiological samples. EOF laboratory equipment and analytical capabilities include (i) gamma spectroscopy equipment which will provide the capability for manual or machine-assisted radioisotopic identication and quantification of radiological samples; (ii) gas flow proportional counter for alpha and beta counting applications; and (iii) GM detector and scaler for gross activity evaluation of samples.

(4) the Process/Effluent Radiation Monitoring System, which monitors, records, alerts and controls the release of radioactive materials. This system is described in detail in § 7.3.1.2.1 of the RERP.

(5) a dedicated Health Physics telephone line between the OSC and the TSC to relay in-plant radiological information.

(6) a dedicated Dose Assessment telephone line between the TSC, the health physics office in the plant and the EOF, to be used primarily to relay information concerning dose assessment activities.

(7) a dedicated Operational Support telephone line connecting the OSC to the control room and the TSC. The primary purpose of this phone will be to obtain personnel support, such as the formation of emergency teams.

(8) a dedicated Emergency Management telephone line linking the EOF, the TSC and the control room, to be used by emergency management personnel.

(9) the Health Physics Network, a dedicated phone line between the Callaway Plant and the NRC Operations Center in Bethesda, Maryland. Phones are located in the EOF and the TSC, and will be activated by the NRC. This phone is to be used primarily for the transmittal of radiological information.

(10) protective equipment, including clothing and breathing apparatus.

(11) personnel monitoring equipment.

26. Personnel assigned responsibilities during an emergency for radiological response are members of the plant staff or UE's corporate headquarters in St. Louis who have health physics or nuclear engineering degrees and/or are trained radiation/chemistry technicians. All of these individuals will receive specific training in radiological

monitoring and analysis as well as other emergency-related subjects, such as the transmission of emergency information and instructions.

27. In conclusion, UE has established a radiological emergency organization which includes extensive radiological monitoring capability and resources. During a radiological accident at the Callaway Plant, UE's monitoring program will be an important source of information about radiation releases for federal, state and local agencies and for the public at large. The redundant monitoring capability of the State of Missouri will serve as a means for verifying the findings of UE's Field Monitoring Teams.

Neal G. Slaten

Neal G. Slaten

Subscribed and sworn to before me
this 16th day of May, 1983.

Barbara J. Pfaff
Notary Public

BARBARA J. PFAFF
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 22, 1985
ST. LOUIS COUNTY

My Commission expires: 4/22/85.

EXHIBIT A

PROFESSIONAL QUALIFICATIONS & EXPERIENCE

Neal G. Slaten - Supervising Engineer, Nuclear Environmental

Education -	Bachelor of Science, Aerospace Engineering, St. Louis University
	Master of Science, Nuclear Engineering, University of Missouri - Columbia
Related Training -	Westinghouse International School for Environmental Management Colorado State University, 1973
	Westinghouse "Head Start" Program, 1973
	Westinghouse "Head Start" Program Simulator, 1973
	AIF Seminar, "Preparing Environmental Technical Specifications for Nuclear Power Plants", 1974
	Course in "Environmental Analysis and Environmental Monitoring for Nuclear Power Generation" University of California - Berkeley, 1974
	Course in "Environmental Radiation Surveillance for Nuclear Power" Harvard School of Public Health, 1976
	AIF Seminar, "Current Issues on Environmental Regulation of Nuclear Power Facilities", 1977
	Bechtel Auditor Training, 1978
	NRC Seminar, Model Radiological Effluent Technical Specifications for Nuclear Power Plants, 1979
	ASME/EPRI Radwaste Workshop, 1979
	AIF Seminar, Standard Emergency Response Plan, 1979
	NRC Seminar, Emergency Planning, 1980
	INPO Radiological Protection Seminar, 1982

Hazardous Waste Management Summer Institute
University of Missouri, Columbia, 1982

Seminar on Medical Management of Radiation Injuries, 1982

Applied Health Physics Course
Oak Ridge Associated Universities, 1982

EEI Health Physics Committee Representative, 1977 to present

Professional Societies - Health Physics Society.

Experience - 1972-1978, Engineer. Responsibilities included Licensing and NSSS design review.

1978-1980, Nuclear Environmentl Engineer. Responsibilities included Radwaste Systems design review, Environmental Assessment and monitoring programs, Environmental Report & general Licensing activities.

1980-Present, Supervising Engineer, Environmental. Responsibilities include: directing the corporate Environmental and Health Physics Group; Licensing support; reviewing radwaste, shielding and radiation monitoring system engineering design work; evaluating off-site radiological and non-radiological environmental monitoring programs; establishing corporate ALARA policy; reviewing conformance to provisions contained within technical specifications and applicable license provisions pertaining to radiological matters; providing technical expertise to QA audit teams; reviewing design modifications to assure compliance with ALARA philosophy; acting as Radiological Assessment Coordinator during a site or General Emergency at Callaway Plant.

ON-SITE EMERGENCY ORGANIZATION

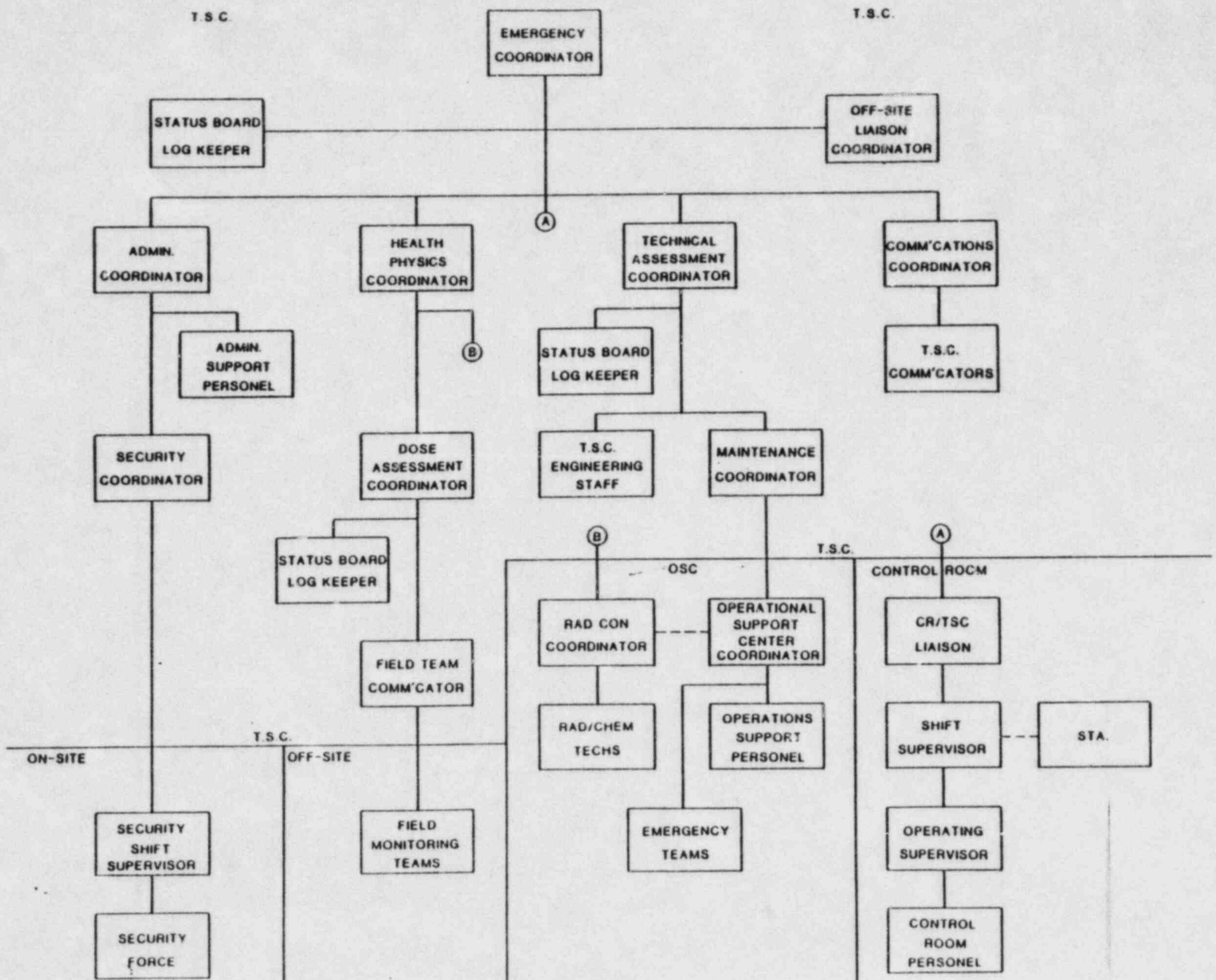

FIGURE 5-5

Rev. 5A
2/83

Exhibit B

PORTABLE SURVEY INSTRUMENTS

TABLE E-1

TYPE	MANUFACTURER/MODEL (OR EQUIVALENT)	RADIATION DETECTED	RANGE	SCALES	DETECTOR TYPE	POWER SUPPLY	REMARKS
Alpha Survey Meter	Ludlum Model 3 Rate Meter w/ 43-5 Probe	Alpha Particles	0-5E5 CPM	0-500 CPM 0-5K CPM 0-50K CPM 0-500K CPM	ZnS Scintillation Probe	2 D-Cell Batteries	Built in Speaker for Audible Response
Portable Frisker	Ludlum Model 3	Beta, Gamma	0-5E5 CPM	0-500 CPM 0-5K CPM 0-50K CPM 0-500K CPM	GM Pancake	2 D-Cell Batteries	Same
Control Point Frisker	Ludlum Model 177	Beta, Gamma	0-5E5 CPM	0-500 CPM 0-5K CPM 0-50K CPM 0-500K CPM	GM Pancake	AC Line or Gel-Cel Battery Pack	Adjustable Audible Alarm
Low Range Survey Meter	Ludlum Model 14C	Beta, Gamma	0-2000 MR/hr	0-.2 MR/hr 0-2 MR/hr 0-20 MR/hr 0-200 MR/hr 0-2000 MR/hr	Thin Wall GM W/ Beta Shield	2 D-Cell Batteries	Built in Speaker for Audible Response
High Range Survey Meter	Eberline Model 6112 Teletector	Beta, Gamma	0-1000 R/hr	0-2 MR/hr 0-50 MR/hr 0-2 R/hr 0-50 R/hr 0-1000 R/hr	Dual GM Tubes	4 C-Cell Batteries	Extendable Probe; Resists Saturation in Fields up to 3E4 R/M
Survey Instrument	Eberline RO-2	Beta, Gamma	0-5 R/hr	0-5 MR/hr 0-50 MR/hr 0-500 MR/hr 0-5000 MR/hr	Ionization Chamber	3 9-Volt Batteries	Equipped w/ Sliding Beta Window

Exhibit C

TABLE E-1

TYPE	MANUFACTURER/MODEL (OR EQUIVALENT)	RADIATION DETECTED	RANGE	SCALES	DETECTOR TYPE	POWER SUPPLY	REMARKS
Neutron Survey Meter	Eberline Model PRS-2P Rascal w/ "Rem ball"	Neutron	0-10 Rem/Hr	MR/hr CPM Counts CPS	BF Tube Enclosed in Polyethlene Sphere	Gell Cell Battery Pack or 5 D-Cell Batteries	Digital Display; Functions as ratemeter, Scaler and Dose Equivalent Rate Meter; Discriminates Against Gamma
Portable Area Radiation Monitor	Eberline RM-16	Beta, Gamma and Neutron	0-200 MR/hr 0-1E4 MRem/hr (Neutron)	MR/hr or MRem/hr	GM Tube or BF Sphere (Neutron)	AC Line or Trickle Charge Battery	Adjustable Audible Alarm
Portable Gamma Spectrometer	Nuclear Data ND 6	Gamma	0-999,999 Counts	N/A	NaI Crystal	AC Line or Battery Pack	256 Data Channels; MDA<10E-7 uci/cc I-131
Survey Instrument	Eberline Model PIC-6A	Beta, Gamma	0-1000 R/M	0-1000 MR/hr 0-1000 R/hr	Gas Filled Ionization Chamber	2 9-Volt Batteries	Equipped w/ Sliding Beta Window

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM FOR THE CALLAWAY PLANT UNIT 1

A. SAMPLE	ANALYSIS	ANALYSIS FREQUENCY ×	# OF LOCATIONS =	TOTAL # ANALYSIS
1. Air Particulate	Gross Beta	Weekly	14	728
	Gamma Spectrometry	Quarterly-Composite	14	56
	SR-89, -90	Quarterly-Composite	14	56
2. Air Iodine	I-131	Weekly	7	364
3. TLD	Gamma Dose	Monthly	52	624
		Annually	52	52
4. Soil	Gamma Spectrometry	Annually	4	4
	Gross Alpha	Annually	4	4
	Gross Beta	Annually	4	4
5. Vegetation	Gamma Spectrometry	Annually	4	12
	Gross Alpha	Annually	4	12
	Gross Beta	Annually	4	12
	I-131 (1)			
6. Milk	I-131	Semi-Monthly (6 mo.)	4	72
	Gamma Spectrometry	Monthly (6 mo.)	4	72
	Ca (2)		4	72
	Sr-89, -90 (2)		4	72
7. Surface Water	Gamma Spectrometry	Monthly	3	36
	Gross Alpha	Monthly	3	36
	Gross Beta	Monthly	3	36
	Tritium	Monthly	3	36
	Sr-89, -90	Monthly	3	36
8. Ground & Drinking Water	Gamma Spectrometry	Monthly	3	36
	Gross Alpha	Monthly	3	36
	Gross Beta	Monthly	3	36
	Tritium	Monthly	3	36
	Sr-89, -90	Monthly	3	36

Exhibit D

#.	SAMPLE	ANALYSIS	ANALYSIS FREQUENCY	×	# OF LOCATIONS	=	TOTAL # ANALYSIS
9.	Bottom Sediment	Gamma Spectrometry	Monthly		3		36
		Gross Alpha	Monthly		3		36
		Gross Beta	Monthly		3		36
		Sr-89, -90	Monthly		3		36
10.	Baseload Sediment	Gamma Spectrometry	Monthly		3		36
		Gross Alpha	Monthly		3		36
		Gross Beta	Monthly		3		36
		Sr-89, -90	Monthly		3		36
11.	Washload Sediment	Gamma Spectrometry	Monthly		3		36
		Gross Alpha	Monthly		3		36
		Gross Beta	Monthly		3		36
		Sr-89, -90	Monthly		3		36
12.	Fish	Gamma Spectrometry	Monthly		3		180
		Gross Alpha	Monthly		3		180
		Gross Beta	Monthly		3		180
		Sr-89, -90	Monthly		3		180