Southern Nuclear Operating Company
Post Office Box 1295
Birmingham, Alabama 35201
Telephone (205) 868-5131

Dave Morey
Vice President
Farley Project

Southern Nuclear Operating Company
the southern electric system

April 22, 1996

Docket Nos. 50-348
50-364

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

Joseph M. Farley Nuclear Plant
Radiological Environmental Operating Report for 1995

Gentlemen:

The enclosed " Radiological Environmental Operating Report for 1995", is transmitted in accordance with the Joseph M. Farley Nuclear Plant Unit 1 and Unit 2 Technical Specifications Section 6.9.1.6 and 6.9.1.7.

If you have any questions, please advise.

Respectfully submitted,

Dave Morey

DM/WHO
ENV-96-083

Enclosures: Subject Report

cc: U. S. Nuclear Regulatory Commission, Washington, D. C.
S. D. Ebneter, Regional Manager
G. F. Maxwell, Senior Resident Inspector

State of Alabama
Director, Division of Radiation Control

ALABAMA POWER COMPANY

RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT FOR 1995

JOSEPH M. FARLEY NUCLEAR PLANT

UNIT NO. 1

LICENSE NO. NPF-2

AND

UNIT NO. 2

LICENSE NO. NPF-8

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ATTACHMENTS

Attachment	Subject
1	Joseph M. Farley Nuclear Plant, Land Use Census and Milk Animal Survey

ACRONYMS

A2LA	American Association of Laboratory Accreditation
APC0	Alabama Power Company
ASTM	American Society for Testing and Materials
CL	Confidence Level
EL	Environmental Laboratory
EPA	Environmental Protection Agency
FNP	Joseph M. Farley Nuclear Plant
ISCO	Instrument Specialties Company
MDC	Minimum Detectable Concentration
MDD	Minimum Detectable Difference
MWe	MegaWatt electric
NA	Not Applicable
NDM	No Detectable Measurement(s)
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PWR	Pressurized Water Reactor
REMP	Radiological Environmental Monitoring Program
RL	Reporting Level
RM	River Mile
SAIC	Science Applications International Corporation
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications

I. INTRODUCTION

The Radiological Environmental Monitoring Program (REMP) for the Joseph M. Farley Nuclear Plant (FNP) is conducted in accordance with Technical Specifications (TS) 6.8.3.f and Chapter 4 of the Offsite Dose Calculation Manual (ODCM). The REMP activities for 1995 are reported herein in accordance with TS 6.9.1.6 and 6.9.1.7, and ODCM 7.1. All dates in this report are for 1995 unless otherwise indicated.

FNP is owned by Alabama Power Company (APCo) and operated by Southern Nuclear Operating Company. It is located in Houston County, Alabama approximately fifteen miles east of Dothan, Alabama on the west bank of the Chattahoochee River. Unit 1, a Westinghouse Electric Corporation Pressurized Water Reactor (PWR), with a rated power output of 860 megawatts electric (MWe) achieved initial criticality on August 9, 1977 and was declared "commercial" on December 1, 1977. Unit 2, also a 860 MWe Westinghouse PWR, achieved initial criticality on May 8, 1981 and was declared "commercial" on July 30, 1981.

Unit 2 was shutdown for its tenth refueling outage from March 11 through April 27. Unit 1 was shutdown for its thirteenth refueling outage from September 16 through November 4.

A description of the REMP - the locations for sampling, the samples to be analyzed, the sampling equipment and how the analyses are performed - is provided in Section II. The laboratory analysis results are discussed in Section III. Other REMP activities are presented in Section IV. Conclusions are provided in Section V.

II. PROGRAM DESCRIPTION

The objectives of the REMP are to ascertain the levels of radiation and concentrations of radioactivity in the environs of FNP and to assess any radiological impact upon the environment due to plant operation.

The bases for such an assessment include appropriate comparisons between the results of the radiological analysis of environmental samples obtained at control stations (locations where radiological levels are not expected to be significantly affected by plant operation, i.e. at background levels) with those at indicator stations (locations where it is anticipated that radiological levels are more likely to be affected by plant operation, such as, the plant perimeter), and comparisons between results obtained during preoperation with those obtained during operation. Samples are also collected at several community stations (locations of population centers between the indicator and the control stations or at locations of special interest).

A summary description of the REMP is provided in Table 1. This table portrays the program in the manner by which it is being regularly carried out. Table 1 summarizes the programs requirements as outlined in ODCM Table 4-1 by detailing the sample types for monitoring the airborne, direct radiation, waterborne and ingestion pathways and delineating the collection and analysis frequencies. Table 1 also describes the locations of the indicator, community and control stations as spelled out in ODCM Table 4-4. The sampling locations are also depicted on maps in Figures 1 through 4.

To identify the locations of environmental monitoring stations which monitor gaseous releases, the area surrounding FNP is divided into 16 radial sectors which are centered on the major compass points and whose origin is the point midway between the Unit I and Unit II plant vent stacks. Each sector is numbered sequentially clockwise and oriented so that the centerline of

sector 16 is due north. Each sampling point is identified by a four digit number. The first two digits indicate the sector number, and the last two digits indicate the distance to the nearest mile from the origin. For example, TLD station 0304 is located 4 miles east northeast of the origin. The locations for the sampling stations along the river are identified by the nearest River Mile (RM) which is the distance along the navigable portion of the river upstream of the Jim Woodruff Dam near Chattahoochee, Florida. The approximate location of the plant intake structure is RM 44.

In accordance with ODCM 4.1.1.2.1, deviations from the required sampling schedule as set forth in Table 1 are permitted if samples are unobtainable due to hazardous conditions, unavailability, inclement weather, equipment malfunction or other just reasons. All program deviations are listed in Table 2.

The samples are collected by the plant's technical staff except for fish and river sediment samples which are collected by APCo Environmental Field Services personnel. All sample analyses are contracted to the Georgia Power Company's Environmental Laboratory (EL) in Smyrna, Georgia; in 1994, the EL replaced the University of Georgia for this task. Since 1987, the EL has been accredited by the American Association of Laboratory Accreditation (A2LA) for radiochemistry. The A2LA is a nonprofit, nongovernmental, public service, membership society dedicated to the formal recognition of competent laboratories and related activities. Accreditation is based upon internationally accepted criteria for laboratory competence. (ISO/IEC Guide 25, 1990, "General Requirements for the Competence of Calibration and Testing Laboratories")

A. Airborne Particulates and Iodine

The airborne particulate and iodine monitoring stations are equipped with FN-210B air samplers manufactured by Science Applications International Corporation (SAIC). Each air sampler is a modular unit consisting of a sample pump, regulator vaive assembly, a microprocessor based air volume totalizer, an open faced combination filter holder and a thermostatically controlled exhaust fan, all mounted in a ventilated aluminum weather house. In March 1993, electrical surge protectors were installed on all air monitoring stations. A 47 millimeter particulate filter and a 50 millimeter F&J activated charcoal cartridge are installed in separate compartments of the combination filter holder, which is mounted vertically on the pump suction. In September 1993, the Gelman VM-1 Metricel membrane particulate filters which had been used since 1977 were replaced with Gelman A/E glass fiber filters.

Sampled air flows vertically from top to bottom, first through the particulate filter, then through the charcoal cartridge. To compensate for dust buildup on the sample filters, the regulator valve assembly, located downstream of the combination filter holder, maintains a constant sample flowrate over a wide range of pressure differentials across the filters. The design of the filter holder allows uniform distribution of sampled airborne particulates over the entire filter disk. The totalizers are calibrated using the SAIC Model C-812 calibrator.

Charcoal cartridges and/or particulate filters are collected weekly at 4 indicator, 3 community and 3 control stations as shown in Figures 1, 2 and 3, respectively. Gross beta radioactivity measurements are performed on each air particulate filter using a low background gas flow proportional counting system. A gamma isotopic analysis is performed quarterly on a composite of the particulate filters for each station using either a twenty percent or forty percent relative efficiency EG & G Ortec intrinsic germanium detector system. The charcoal filters are analyzed for I-131 using the same germanium detector system.

B. Direct Radiation

Direct (external) radiation is measured utilizing Panasonic UD-814 thermoluminescent dosimeters (TLDs) and a Panasonic UD-710A reader. Each TLD badge contains 3 phosphors which are composed of calcium sulfate (with thulium impurity) crystals and are encased in 860 mg/cm^2 of plastic and lead. Each badge is sealed in a 10 mg/cm^2 plastic bag to protect it from moisture while in the field. On the plant site, all TLD packets which are not in the field are kept in a lead safe with 2-inch walls.

The 16 TLD stations shown in Figure 1, located near the plant perimeter in each of the radial sectors are designated as the indicator stations. The community stations shown in Figure 2 consist of the 16 TLD locations in each sector at approximate distances between 3 and 5 miles, plus 2 special interest areas (the nearest occupied residence and the City of Ashford). Each of the 6 control stations shown in Figure 3 are more than 10 miles from the plant.

At each TLD station, two TLD badges are exposed side-by-side on metal stakes at a height of one meter above the ground. For the computation of the net field doses, a log of all exposure periods is maintained for each TLD packet.

C. Milk

A milk sample is collected biweekly from one control station, the Ivey Dairy (Green Valley Farms) in Webb, Alabama which is located about 12 miles west of the plant as shown in Figure 3. This station replaced the Lewis Dairy in February 1994. As borne out by the results of the land use census, no indicator stations for milk are available. The samples are kept at a low temperature and shipped to the EL via overnight express. Chemical preservatives stopped being added to the samples in November 1994. Gamma isotopic and I-131 analyses are performed on each sample.

The I-131 concentration in each sample is determined by collection on anion exchange resin, elution with sodium perchlorate, followed by precipitation as silver iodide and counting on a beta-gamma coincidence counter or the low background gas flow proportional counter. Stable iodide carrier is added to each sample for determination of the radiochemical yield. The concentration of stable iodine present in the sample before carrier addition is also determined and accounted for in the chemical yield determination. One liter of each sample is placed in a marinelli beaker and analyzed for gamma emitters using the germanium detector system.

D. Forage

Forage samples are collected monthly from 3 grass plots, each of which is located adjacent to an air sampling station. The 2 indicator locations are on the plant perimeter as shown in Figure 1 and the control location is in Dothan about 18 miles west of the plant as shown in Figure 3. After the samples are chopped to a smaller size and mixed well, 200g aliquots are placed in 0.45 liter marinelli beakers and analyzed for gamma emitters using the germanium detector system.

E. Ground Water

In the FNP environs, there are no true indicator sources of ground water. A well which serves Georgia Pacific Paper Company as a source of potable water, located on the east bank of the

Chattahoochee River about four miles south-southeast of the plant, is designated as the indicator station. A deep well which supplies water to the Whatley residence located about 1.2 miles southwest of the plant is designated as the control station. Samples are collected quarterly from each of these stations.

Tritium, gamma isotopic and I-131 analyses are performed on each sample. The tritium and gamma isotopic analyses are done in the same manner as described below for surface water. The low level I-131 analysis is performed by precipitating one liter of sample as palladium iodide and counting the final palladium iodide precipitate on a beta-gamma coincidence counter or the low background gas flow proportional counter.

F. Surface Water

Samples of water are collected from the Chattahoochee River at locations about 3 miles upstream and 3 miles downstream of the plant as shown in Figure 4. The collections are made on a semi-continuous basis with ISCO (Instrumentation Specialties Company) samplers. For each 28-day surveillance interval, one liter of each week's indicator and control samples are combined to make 4-liter composite samples. One liter of each sample is placed in a marinelli beaker and analyzed for gamma emitters using the germanium detector system.

For each calendar quarter, 75 ml of each week's indicator and control samples are combined separately to make a 975 ml composite sample for each of these stations. An aliquot of each of these samples is distilled after mixing with sodium hydroxide and potassium permanganate, a liquid scintillation cocktail is then added and the analysis for tritium is conducted on a Beckman LS7800 Liquid Scintillation Counter employing the appropriate window setting and optimized sample size.

G. Fish

Two types of fish, bottom feeding and game, are collected semiannually from the Chattahoochee River at a control location which is several miles upstream of the plant and at an indicator location which is a few miles downstream of the plant. These locations are shown in Figure 4. A gamma isotopic analysis is performed on the edible portions of each sample. After the fillets from each sample are chopped to a smaller size and mixed well, 450 gram aliquots are placed in 0.45 liter marinelli beakers and analyzed for gamma emitters using the germanium detector system.

H. River Sediment

Sediment samples are collected semiannually from the shoreline of the Chattahoochee River at the same approximate locations as described above for the fish samples. A gamma isotopic analysis is performed on each sample. After approximately one kilogram of each sample is dried, ground and well mixed, 450 gram aliquots are placed in 0.45 liter marinelli beakers and analyzed for gamma emitters using the germanium detector system.

III. LABORATORY ANALYSIS RESULTS

In accordance with ODCM 7.1.2.1, summarized and tabulated results of the laboratory analyses for all of the regular samples collected for the year at the designated indicator, community and control stations are presented in Table 3 in a format similar to that found in Table 3 of the Nuclear Regulatory Commission (NRC) Radiological Assessment Branch Technical Position, Revision 1, November 1979. Since no reportable occurrences were called for during the year, the column entitled "Number of Reportable Occurrences" has been excluded from Table 3.

In accordance with ODCM 4.1.1.2.2, only the naturally occurring radionuclides which are found in the plant's effluent releases need be reported. The radionuclide, Be-7, which occurs abundantly in nature is also produced in the FNP reactors. Minuscule quantities are found in the liquid releases. No other naturally occurring radionuclides are found in the plant's effluent releases. Hence, the radionuclides of interest for the samples monitoring liquid releases (surface water, fish and river sediment) are man-made radionuclides plus Be-7, while only man-made radionuclides are of interest for the other REMP samples. During 1995, Be-7 was not detected in any of the samples monitoring liquid releases.

An interpretation and evaluation, as appropriate, of the laboratory results for each type sample are included in this section. Relevant comparisons are made between the difference in average values for different station groups (such as the indicator and control stations or the indicator and community stations) and the calculated Minimum Detectable Difference (MDD) between these two groups at the 99 percent Confidence Level (CL). The MDD is determined using the standard Student's t-test. A difference in the average values which is less than the MDD is considered to be statistically indiscernible.

Pertinent results are also compared with past results including those obtained during preoperation. The results are examined to perceive any trends. To provide perspective, a result might also be compared with its Reporting Level (RL) or Minimum Detectable Concentration (MDC) whose nominal values are found in ODCM Tables 4-2 and 4-3, respectively. During the year there were no failures in the laboratory analyses for any of the samples in attaining the MDCs required by ODCM Table 4-3.

All results are tested for conformance to Chauvenet's Criterion (G. D. Chase and J. L. Rabinowetz, Principles of Radioisotope Methodology, Burgess Publishing Company, 1962 pages 87-90) to flag any values which might differ from the others in its set by a relatively large amount. Identified outliers are investigated to determine reason(s) for deviation from the norm. If the deviation is due to an equipment malfunction or other valid physical reason, the anomalous result is deemed non-representative and excluded from the data set. No datum is excluded for failing Chauvenet's Criterion only. Any exclusions are discussed in this section under the appropriate sample type.

The series of detonations of nuclear devices in weapons tests conducted on the mainland of China prior to and during preoperation, and the early years of operation had a significant impact upon the radiological levels in some of samples for several years afterwards. These atmospheric tests occurred on:

September 26, 1976;
November 17, 1976;
September 17, 1977;
March 14, 1978;
December 14, 1978; and
October 15, 1980.

Significant uptrends in the results also followed the Chernobyl incident in the Ukraine which began on April 26, 1986.

A. Airborne Particulates and Iodines

As seen in Table 3, the annual average weekly gross beta activity of 21.7 fCi/m^3 for the indicator stations was 0.1 fCi/m^3 greater than that for the community stations and 1.2 fCi/m^3 less than that for the control stations. For each of these cases, the MDD was calculated as 1.5 fCi/m^3. Since each of these differences is less than its MDD, there is no discernible difference between the average levels at the indicator stations and those for the other two station groups.

During preoperation and the early years of operation the average gross beta readings were 5 to 10 times greater than those currently being obtained. By the mid 1980s, the readings had diminished to about half the current levels. These annual averages about doubled with the Chernobyl incident in 1986; this impact faded away after a year or two. The installation of new air monitoring equipment in 1992 brought a step increase in the readings, roughly by a factor of two. Subsequently, the levels have been essentially flat through 1995.

During 1995, no man-made radionuclides were detected from the gamma isotopic analysis of the quarterly composites of the air particulate filters for each station. This has generally been the case after the impact of the weapons tests had gone away. During preoperation and the early years of operation, a number of fission and activation products were detected at low levels. For example, during preoperation, the average positive levels for Cs-134 and Cs-137 were 22 and 9 fCi/m^3, respectively. For 1986, as a consequence of the Chernobyl incident, cesium levels of around 3 or 4 fCi/m^3 were found. It might be noted that the MDC for Cs-134 and Cs-137 are 50 and 60 fCi/m^3.

Airborne I-131 is not normally detected in the charcoal canisters and 1995 was no exception. In an early year of operation (1978), levels between 40 and 50 fCi/m^3 were found in a few samples; then after the Chernobyl incident, levels up to a few hundred fCi/m^3 were found in a number of samples. At no other times has airborne I-131 been detected in the environmental samples.

Listed in Table 2 are a number of deviations which occurred during the year. In each case, the affected samples were tested for conformance with Chauvenet's Criterion; in six cases, the criterion was not satisfied, the results for these samples were thus deemed nonrepresentative and excluded from the data set. Listed below are the collection dates and stations which were excluded.

Collection Date	Station Number
July 25	1601
October 10	1605
October 17	1108
November 7	1108
December 5	0701
December 12	1218

B. External Radiation

As shown in Table 3, the average quarterly exposure of 14.0 mR acquired at the indicator stations was 2.2 and 1.5 mR greater than that for the community and control stations, respectively. Each of these differences are discernible as each is greater than the MDDs calculated as 0.9 mR between the indicator and community stations, and 1.4 mR between the indicator and control stations.

These differences between the station groups for 1995 are typical of those found in recent years. For example, during the previous 5 years (1990 through 1994), the average quarterly exposure at the indicator stations was 2.9 and 2.2 mR greater than that at the community and control stations, respectively.

The results for Station 0104 in the first quarter were excluded from the data base after failing to conform with Chauvenet's Criterion. The details of the deviation which prompted this test are provided in Table 2.

The results for TLD badges 0701A and 0104A exposed during the first quarter and 0703B exposed during the third quarter were also excluded from the data base because the standard deviation was greater than 1.4. In each of these cases, the readings for the companion TLD only were used to determine the quarterly doses at those stations.

The standard deviation limit of 1.4 was calculated using a method developed by the American Society for Testing and Materials (ASTM). (ASTM Special Technical Publication 15D, ASTM Manual on Presentation of Data and Control Chart Analysis, Fourth Revision, Philadelphia, PA, October 1976) The calculation was based upon the standard deviations obtained by the EL with the Panasonic UD-814 badges during 1992. This limit serves as a flag to evoke an investigation. To be conservative, readings with a standard deviation greater than 1.4 are deleted since the high standard deviation is interpreted as an indication of a suspect TLD.

No reason was found for the high deviations obtained with the results for any of these badges. Each was visually inspected under a microscope; the glow curve and test results for the anneal data and the element correction factors were reviewed.

C. Milk

No radionuclides were detected by gamma isotopic analysis of the control station milk samples. No milk animals were identified within 5 miles of the plant as an indicator station.

Not since the early years of operation have any positive results been found from either the gamma isotopic or the I-131 analyses. During preoperation, some results for I-131 were over a hundred pCi/l, while the average positive results for Cs-137 were around 30 pCi/l. In the second year of operation (1978), the average positive results were 21 and 16 pCi/l for I-131 and Cs-137, respectively. During these periods, positive results were found in only about a fifth of the samples. The MDC and RL for I-131 are 1 and 3 pCi/l, respectively; for Cs-137, 18 and 70 pCi/l.

D. Vegetation

No man-made radionuclides were detected from the gamma isotopic analysis of the forage samples during 1995. In 1994 Cs-137 was found in two samples at the control station; the average level was 24 pCi/kg wet. Since 1986, only Cs-137 has been found; since 1988, it has been found in only one or two samples out of the 35 to 40 samples collected. During preoperation, the early years of operation and in 1986 (the year of the Chernobyl incident), Cs-137 was found in about a third of the samples and the levels were about 10 times greater than those found in recent years. The MDC and RL for Cs-137 in forage are 80 and 2000 pCi/kg wet.

In these earlier periods, I-131 was found at very high levels which ranged from around 100 to 1500 pCi/kg dry. The MDC and RL for I-131 are 60 and 100 pCi/kg wet. In 1978, 1980 and 1981, a number of fission and activation products were also found in the forage samples.

There has been a steady decline in the number of radionuclides detected, their level and the frequency at which they are found.

E. Ground Water

As usual, no radionuclides were detected from any of the analyses (gamma isotopic, I-131 and tritium) of the samples. During preoperation and through 1983, tritium was found at levels of a few hundred pCi/l in a few of the samples each year. The MDC and RL of tritium is 2000 and 20,000 pCi/l, respectively.

F. Surface Water

No positive results were found this year from the monthly gamma isotopic analysis of the samples. Prior to 1987 low levels of Cs-134 and Cs-137 were detected in some of the samples.

On 5-18-89, the river water samplers sampling frequency was changed from a 120 minute interval between aliquot samples to a more conservative time interval of 90 minutes to ensure the interval did not exceed the procedure requirement of 120 minutes. When the interval was changed to 90 minutes, the total number of samples collected per week was not changed from 84 to 112 in the samplers' processor settings. This change in processor settings is necessary to ensure aliquots of sample are collected over a full 7 day period. As a result, during the time period from 5-18-89 through 8-1-95, the samplers would obtain samples every 90 minutes for a total number of 84 samples and then sit idle for the remaining 42 hours of the week and thereby miss 28 aliquots. In August 1995, the sampler processors were reprogrammed to collect sample aliquots at 90 minute intervals across the full 7 day period. To ensure no dose limits had been approached or exceeded, the effluent release data during this time period (5-18-89 through 8-1-95) were evaluated. There were no abnormally high radioactive releases identified from this review. No adverse environmental impact resulted from the time period of reduced river water sampling.

As may be seen from Table 3, only one out of the eight surface water samples had tritium activity. The analysis showed a level of 257 pCi/l, which is far below the MDC of 3000 pCi/l. Generally speaking the annual average levels at the indicator station have been a

little greater (by one to two hundred pCi/l) than those at the control station. The highest annual level in the past was around 500 pCi/l. In general, there appears to be a slight downward trend in the levels as well as the frequency at which positive results are found.

Listed in Table 2 are the deviations that occurred during the year.

G. Fish

As may be seen from Table 3, Cs-137 was the only radionuclide of interest which was found from the gamma isotopic analysis. For the bottom feeding fish, it was found in only one of the samples; at the control station, the level was 14.2 pCi/kg wet. For the game fish, it was found in the two samples collected at both the indicator station and the control station. The average level at the indicator station of 17.9 pCi/kg wet was 0.3 pCi/kg wet less than that found at the control stations; this difference is not discernible since it is less than the MDD of 13.3 pCi/kg wet.

Over the years, Cs-137 has been found in about 85% of the game fish samples but in only around 30% of the bottom feeding fish samples. Every year (except one) the average levels for the game fish have been greater than those for the bottom feeding fish, typically about 50% greater. During preoperation, the levels were about 5 times greater than the current levels; during 1980 and 1981, they were an order of magnitude greater.

On only a few occasions in the past have radionuclides of interest other than Cs-137 been found. In 1986 (the year of the Chernobyl incident), Co-60 was found at a level of 25 pCi/kg wet in one of the two game fish samples collected at the indicator station. In 1982, Nb-95 was found at a level of 31 pCi/kg wet in one of the three game fish samples from the indicator station. In 1981, Nb-95 was found at a level of 38 pCi/kg wet in one of the two bottom feeding samples from the indicator station. The impact of weapons testing was evident during the early eighties.

H. Sediment

No positive results for the radionuclides of interest were found during 1995 from the gamma isotopic analysis of the samples. Over the years only a few positive results were found, which were for Be-7, Nb-95, Cs-134 and Cs-137; all of these positive results were from samples collected at the control station except for two each of the cesium isotopes. Be-7 was detected only once, in 1985 at a level of 945 pCi/kg dry; its MDC is 655 pCi/kg dry. Nb-95 was also detected only once, in 1981 at a level of 113 pCi/kg dry; its MDC is 50 pCi/kg dry. Cs-134 has been detected six times at levels ranging from 45 to 138 pCi/kg dry; its MDC is 150 pCi/kg dry. Cs-137 has been detected seven times at levels ranging from 11 to 185 pCi/kg dry; its MDC is 180 pCi/kg dry. No trend is recognized from these data.

IV. OTHER ACTIVITIES

A Land Use Census

An annual land use census as required by TS 6.8.3.f(2) and ODCM 4.1.2 was completed on June 16. The results are provided in Attachment I.

A new residence which is closer to the plant than the current controlling receptor was found in the West Sector at 0.9 miles. The current controlling receptor as described in ODCM Table 3-7 is a child in the SW Sector at 1.2 miles receiving dose via the inhalation, ground plane, vegetable garden and cow meat pathways. Since there was no vegetable garden, meat animal or milk animal at the new closer residence, the dose pathways would consist of only inhalation and the ground plane. A calculation was made which showed that the dose received by the current controlling receptor is greater than that which would be received by the new resident. Thus, the present controlling receptor was retained.

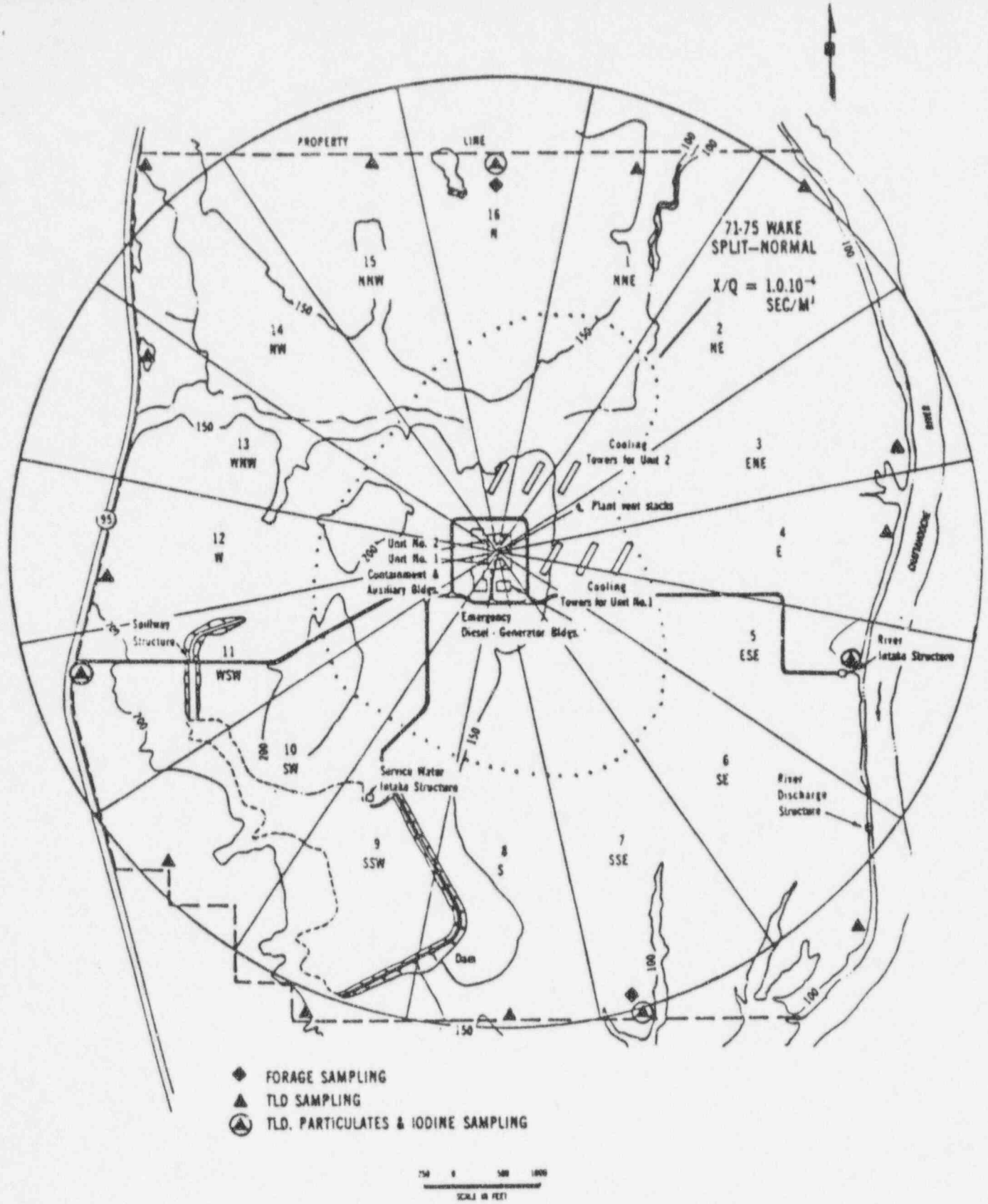
B. Interlaboratory Comparison Program

As required by ODCM 4.1.3, the EL participates in an interlaboratory comparison program, namely the Environmental Protection Agency's (EPA) Crosscheck Program. The EL's EPA program code designation is MQ.

V. CONCLUSIONS

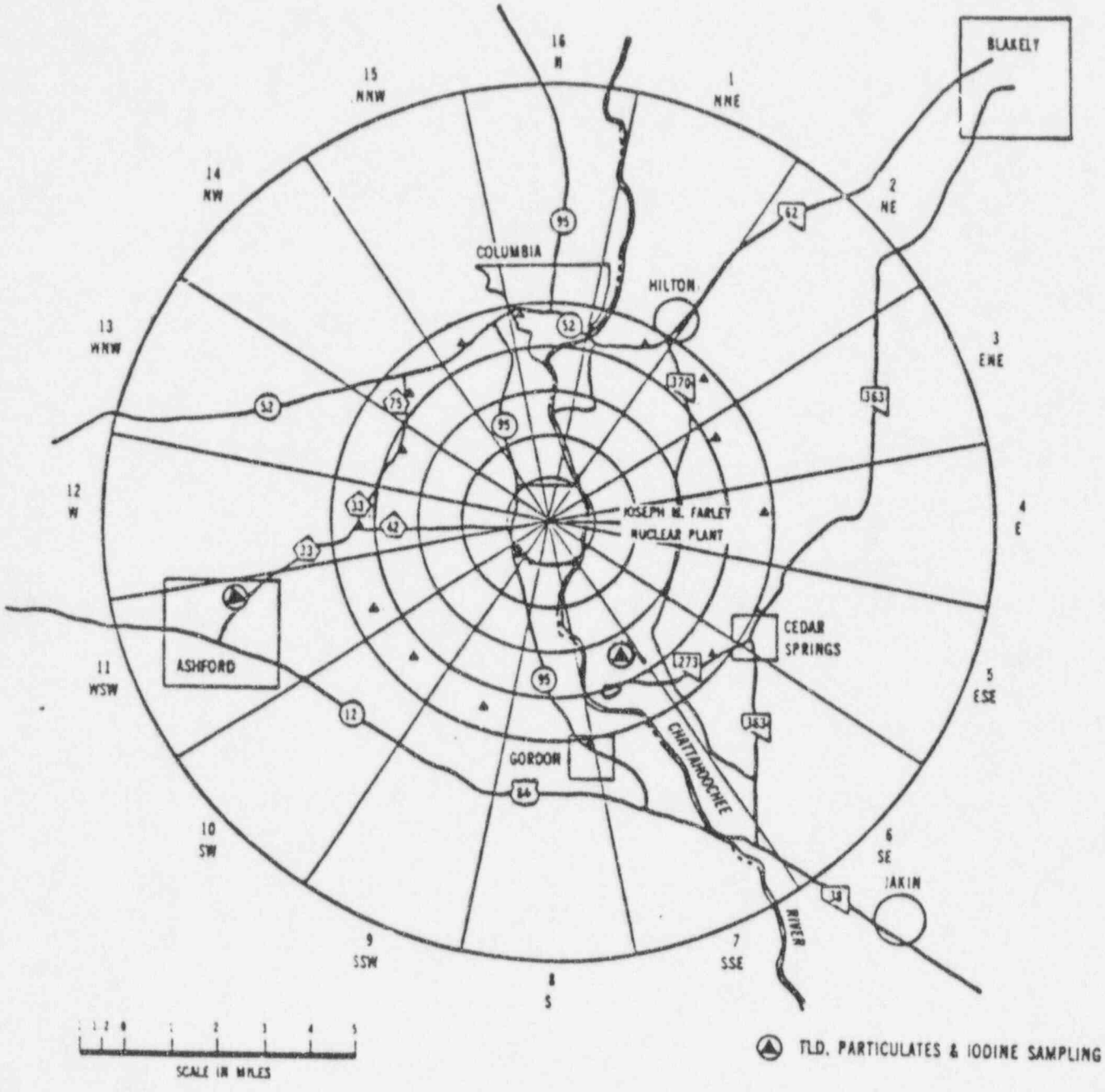
This report confirms the licensee's conformance with the requirements of TS 6.8.3.f and Chapter 4 of the ODCM during 1995. It shows that all data were carefully examined. A summary and discussion of the results of the laboratory analyses for each type sample were presented.

It was shown that all of the radiological levels were low and generally trending downward. No radiological impact upon the environment or to the public as a consequence of plant discharges to the atmosphere and to the river was established.



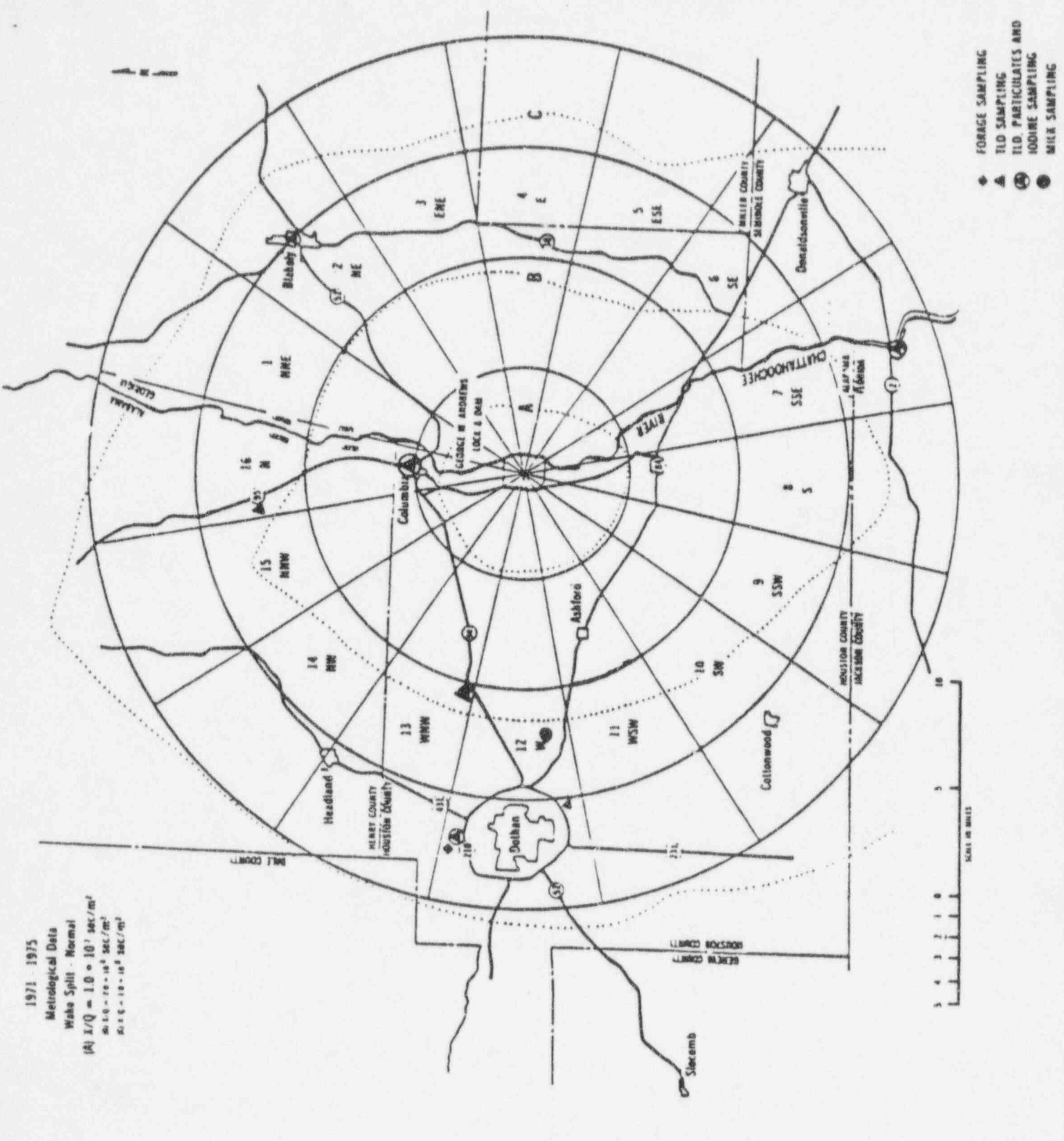
INDICATOR STATIONS FOR MONITORING GASEOUS RELEASES

Figure 1



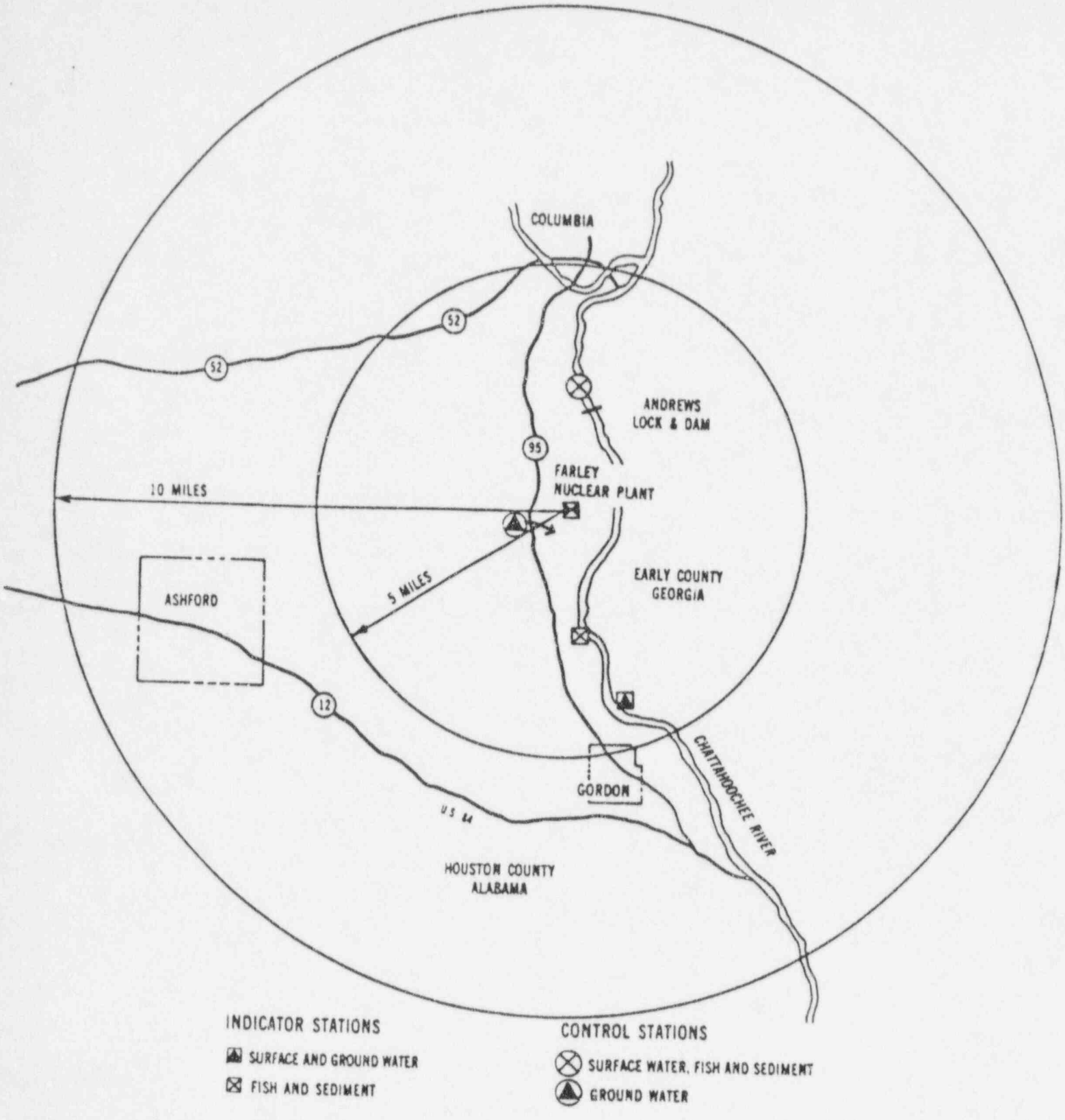
COMMUNITY (INDICATOR II) STATIONS FOR
MONITORING GASEOUS RELEASES

Figure 2



CONTROL STATIONS FOR MONITORING GASEOUS RELEASES

Figure 3



INDICATOR AND CONTROL STATIONS FOR
MONITORING LIQUID RELEASES

Figure 4

TABLE 1

OUTLINE OF OPERATIONAL RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM FOR FARLEY NUCLEAR PLANT DURING 1995

Types of Samples and Sampling Locations (Distances Given in Miles)	**Sampling and Collection Frequency**	**Type and Frequency of Analysis**
AIRBORNE		
Particulates Indicator Stations: North Perimeter (N-0.8) South Perimeter (SSE-1.0) Plant Entrance (WSW-0.9) River Intake Structure (ESE-0.8) Community Stations: Blakely, GA. (NE-15) Dothan, AL. (W-18) Neals Landing, FL. (SSE-18)	Continuous sampler operation with filter collection performed once per 7 days.	Particulate filter - Analyze for gross beta radioactivity ≥ 24 hours following filter change. Perform gamma isotopic analysis on each sample when gross beta activity is >10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
Iodine Indicator Stations: North Perimeter (N-0.8) South Perimeter (SSE-1.0) Plant Entrance (WSW-0.9) River Intake Structure (ESE-0.8) Community Stations: Georgia Pacific Paper Co. (SSE-3) Control Stations: Blakely, GA. (NE-15) Dothan, AL. (W-18) Neals Landing, FL. (SSE-18)	Continuous sampler operation with charcoal canister collection performed once per 7 days.	Radioiodine canister - Analyze at least once per 7 days for I-131.

TABLE 1 (continued)

OUTLINE OF OPERATIONAL RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM FOR FARLEY NUCLEAR PLANT DURING 1995

Types of Samples and Sampling Locations (Distances Given in Miles)	**Sampling and Collection Frequency**	**Type and Frequency of Analysis**
DIRECT RADIATION Indicator I Stations: Sixteen stations, one in each meteorological sector along the plant perimeter (N-0.8, NNE-0.9, NE-1.0, ENE-0.9, E-0.8, ESE-0.8, SE-1.1, SSE-1.0, S-1.0, SSW-1.0, SW-0.9, WSW-0.9, W-0.8, WNW-0.8, NW-1.1, and NNW-0.9). Indicator II (Community) Stations: Sixteen stations: At least one in each meteorological sector at a distance of 3-5 miles (NNE-4, NE-4, ENE-4, E-5, ESE-5, SE-5, SSE-3, S-5, SSW-4, SW-5, WSW-4, W-4, WNW-4, NW-4, NNW-4, and N-5). Special Interest Stations: Occupied residence nearest the plant site (SW-1.2) City of Ashford, AL (WSW-8.0) Control Stations: Blakely, GA. (NE-15) Neals Landing, FL. (SSE-18) Dothan, AL. (W-18) Dothan, AL. (W-15) Webb, AL. (WNW-11) Haleburg, AL. (N-12)	At least once per 92 days.	Gamma dose - Readout at least once per 92 days

TABLE 1 (continued)

OUTLINE OF OPERATIONAL RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM FOR FARLEY NUCLEAR PLANT DURING 1995

Types of Samples and Sampling Locations (Distances Given in Miles)	**Sampling and Collection Frequency**	**Type and Frequency of Analysis**
WATERBORNE		
Surface Water Indicator Station: Paper Mill at Cedar Springs, GA (3 miles downstream of plant discharge, River Mile-40) Control Station: Upstream of Andrews Lock and Dam (≈ 3 miles upstream of plant intake, River Mile-47)	Composite taken with proportional semicontinuous sampler having a minimum sampling frequency not exceeding two hours collected over a period ≤ 31 days.	Analyze gamma isotopic analysis of each composite sample monthly. Analyze tritium in each composite sample at least once per 92 days.
Ground Water Indicator Station: Paper Mill at Cedar Springs, GA, Well (SSE-4) Control Station: Whatley Residence, Well (SW-1.2)	Grab sample taken at least once per 92 days.	Gamma isotopic and tritium analyses of each sample once per quarter.
River Sediment Indicator Station: Downstream of plant discharge at Smith's Bend (River Mile - 41) Control Station: Upstream of plant discharge at Andrews Lock & Dam Reservoir (River Mile - 47)	Grab sample taken at least once per 184 days.	Gamma isotopic analysis of each sample twice per year.

TABLE 1 (continued)

OUTLINE OF OPERATIONAL RADIOLOGICAL ENVIRONMENTAL
MONITORING PROGRAM FOR FARLEY NUCLEAR PLANT DURING 1995

Types of Samples and Sampling Locations (Distances Given in Miles)	**Sampling and Collection Frequency**	**Type and Frequency of Analysis**
INGESTION		
Milk Control Staton: Ivey Dairy (Green Valley Farms) Webb, AL. (W-12)	At least once per 16 days.	Gamma isotopic and I-131 analysis of each biweekly sample when animals are on pasture.
Fish Indicator Station: Downstream of plant discharge in vicinity of Smith's Bend (River Mile - 41) Control Station: Upstream of plant discharge in Andrews Lock & Dam Reservoir (River Mile - 47)	One sample each of the following species at least once per each season (March 15 - May 15 and September 15 - November 15) 1. Game Fish 2. Bottom Feeding Fish	Gamma isotopic analysis on edible portions once per season.
Forage Indicator Station: North Perimeter (N-0.8) South Perimeter (SSE-1.0) Control Station: Dothan, AL. (W-18)	Grab sample cut from green forage at least once per 31 days.	Gamma isotopic analysis (which includes I-131) of each monthly sample.

TABLE 2

ENVIRONMENTAL MONITORING PROGRAM DEVIATIONS 1995

DATE/TIME	COMPONENT	CAUSE OF DEVIATION	RESOLUTION	REMARKS
2-7-95/1300	Community TLD 0104	TLD found missing	Area searched, TLD replaced with a spare	35 days of data lost
2-21-95/0719	Control air monitor station 1218	Power secured for substation work	Power was restored	Sampler was off 7:08 hours
2-21-95/1044	Community air monitor station 1605	Power lost during thunderstorm, probably on 2-18	Power was restored	Sampler was off 3:51 hours
2-28-95/1030	Community TLD 0104	TLD missing a second time	Area was searched, then TLD was replaced on 3-1-95/1150 and labeled "Farley Nuclear Plant Do not Remove"	21 more days lost for a total of 56. Results were excluded.
6-1-95/1120	Community air monitor station 0703	Pump would not restart after calibration and service	Pump repaired 6-2-95	Sampler was off 21:27 hours
6-13-95/0835	Control air monitor station 0718	Pump tripped after 102:19 hours	Breaker was reset	Sampler was off 65:26 hours
7-18-95/0932	Control air monitor station 0718	Pump and totalizer tripped after 127:16 hours	Totalizer breaker was reset	Sampler lost 41:49 hours
7-18-95/1236	Community air monitor station 1605	Pump tripped after 28:43 hours, likely due to thunderstorm	Pump was reset	Due to low sample volume, entire sample was not reported, 169:50 hours lost
7-19-95/1500	Community air monitor station 1605	Sampler checked after suspected power loss. Pump had tripped after 2:10 hours	Power restored and pump restarted	Sampler was off 22:09 hours
7-25-95/0710	Indicator air monitor station 1601	Sampler tripped after 3:49 hours	Pump was restarted	Sampler lost 161:40 hours, analysis results failed review and were discarded
July 1995	River Auto Samplers	Samplers found configured incorrectly such that insufficient samples were collected in 7 days	Samplers were configured correctly, procedures were corrected	See discussion in body of the report (Section III. F.)
8-29-95/1335	Air monitor stations 1601 and 1605	Power secured for substation work	Power restored	45 minutes lost
10-4 to 10-7-95	River water auto samplers	Samplers were removed in preparation for Hurricane Opal	Samplers replaced	Background sampler 005 - 76 hours Indicator Sampler 005 - 75 hours

TABLE 2 (continued)

ENVIRONMENTAL MONITORING PROGRAM DEVIATIONS 1995

DATE/TIME	COMPONENT	CAUSE OF DEVIATION	RESOLUTION	REMARKS
10-10-95/1440	Air monitors 1601,0703, 1108, 0718,1605	Samplers lost power during hurricane Opal	Power was restored	Time Lost: 1601 - 18:35 hours, 0703 - 5:49 hours, 1108 - 14:20 hours 0718 - 39:00 hours, 1605 - 6:16 hours
10-17-95/1342	Community air monitor station 1108	Pump fuse blown after 272.6 m^3 collected, time unknown	Fuse replaced and pump restarted	Sample run time was unknown volume thought to be accurate, Results failed review and were discarded.
11-7-95/0730	Community air monitor station 1108	Pump fuse blown again after 311.7 m^3 collected	Pump was replaced	Sample run time was unknown volume thought to be accurate, Results failed review and were discarded.
12-5-95/1220	Indicator air monitor station 0701	Sampler found with low flow. Average for the week was 23.9 lpm over 173.29 hours	Flow was set and monitored for reoccurrence	Sample ran continuously but analysis results failed review and were discarded
12-12-95/1015	Control air monitor station 1218	Breaker tripped after 6:02 hours, probably during thunderstorm	Breaker was reset and pump restarted	Volume collected was low, results were discarded.

TABLE 3

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
AIRBORNE PARTICULATES (fCi/m3)						
Gross Beta 514	10	21.7 9-41 (206/206)	Plt. Perim. 0.8 miles N	24.7 12-37 (51/51)	21.6 10-39 (153/153)	22.9 9-50 (155/155)
Gamma Isotopic 40						
I-131	70	NDM (c) (0/16)	NA (d)		NDM (0/12)	NDM (0/12)
Cs-134	50	NDM (0/16)	NA		NDM (0/12)	NDM (0/12)
Cs-137	60	NDM (0/16)	NA		NDM (0/12)	NDM (0/12)
AIRBORNE RADIOIODINE (fCi/m3)						
I-131 413	70	NDM (0/206)	NA		NDM (0/52)	NDM (0/155)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
DIRECT RADIATION (mR/91 days)						
Gamma Dose 159	NA	14.0 10-23 (64/64)	Plt. Perim. 0.8 miles E	21.5 20-23 (4/4)	11.8 9-14 (71/71)	12.5 10-15 (24/24)
MILK (pCi/l)						
Gamma Isotopic 26						
Cs-134	15	NA	NA (0/26)		NA	NDM
Cs-137	18	NA	NA		NA	NDM (0/26)
Ba-140	60	NA	NA		NA	NDM (0/26)
La-140	15	NA	NA		NA	NDM (0/26)
I-131 26	1	NA	NA		NA	NDM (0/26)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
FORAGE (pCi/kg wet)						
Gamma Isotopic 39						
I-131	60	NDM (0/26)	NA		NA	NDM (0/13)
Cs-134	60	NDM (0/26)	NA		NA	NDM (0/13)
Cs-137	80	NDM (0/26)	NA		NA	NDM (0/13)
GROUND WATER (pCi/l)						
H-3 8	2000	NDM (0/4)	NA		NA	NDM (0/4)
I-131 8	1	NDM (0/4)	NA		NA	NDM (0/4)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Gamma Isotopic 8						
Mn-54	15	NDM (0/4)	NA		NA	NDM (0/4)
Fe-59	30	NDM (0/4)	NA		NA	NDM (0/4)
Co-58	15	NDM (0/4)	NA		NA	NDM (0/4)
Co-60	15	NDM (0/4)	NA		NA	NDM (0/4)
Zn-65	30	NDM (0/4)	NA		NA	NDM (0/4)
Zr-95	30	NDM (0/4)	NA		NA	NDM (0/4)
Nb-95	15	NDM (0/4)	NA		NA	NDM (0/4)
Cs-134	15	NDM (0/4)	NA		NA	NDM (0/4)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Cs-137	18	NDM (0/4)	NA		NA	NDM (0/4)
Ba-140	60	NDM (0/4)	NA		NA	NDM (0/4)
La-140	15	NDM (0/4)	NA		NA	NDM (0/4)
SURFACE WATER (pCi/l)						
H-3 8	3000	257 257-257 (1/4)	Paper Co. 3 miles Downstream	257 257-257 (1/4)	NA	NDM (0/4)
Gamma Isotopic 26						
Be-7	124 (e)	NDM (0/13)	NA		NA	NDM (0/13)
Mn-54	15	NDM (0/13)	NA		NA	NDM (0/13)
Fe-59	30	NDM (0/13)	NA		NA	NDM (0/13)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Co-58	15	NDM (0/13)	NA		NA	NDM (0/13)
Co-60	15	NDM (0/13)	NA		NA	NDM (0/13)
Zn-65	30	NDM (0/13)	NA		NA	NDM (0/13)
Zr-95	30	NDM (0/13)	NA		NA	NDM (0/13)
Nb-95	15	NDM (0/13)	NA		NA	NDM (0/13)
I-131	15	NDM (0/13)	NA		NA	NDM (0/13)
Cs-134	15	NDM (0/13)	NA		NA	NDM (0/13)
Cs-137	18	NDM (0/13)	NA		NA	NDM (0/13)
Ba-140	60	NDM (0/13)	NA		NA	NDM (0/13)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
La-140	15	NDM (0/13)	NA		NA	NDM (0/13)
BOTTOM FEEDING FISH (pCi/kg wet)						
Gamma Isotopic 4						
Be-7	655 (e)	NDM (0/2)	NA		NA	NDM 0/2)
Mn-54	130	NDM (0/2)	NA		NA	NDM (0/2)
Fe-59	260	NDM (0/2)	NA		NA	NDM (0/2)
Co-58	130	NDM (0/2)	NA		NA	NDM (0/2)
Co-60	130	NDM (0/2)	NA		NA	NDM (0/2)
Zn-65	260	NDM (0/2)	NA		NA	NDM (0/2)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Cs-134	130	NDM (0/2)	NA		NA	NDM (0/2)
Cs-137	150	NDM (0/2)	NA		NA	14.2 14-14 (1/2)
GAME FISH (pCi/kg wet)						
Gamma Isotopic 4						
Be-7	655 (e)	NDM (0/2)	NA		NA	NDM (0/2)
Mn-54	130	NDM (0/2)	NA		NA	NDM (0/2)
Fe-59	260	NDM (0/2)	NA		NA	NDM (0/2)
Co-58	130	NDM (0/2)	NA		NA	NDM (0/2)
Co-60	130	NDM (0/2)	NA		NA	NDM (0/2)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Nuclear Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

Type and Total Number of Analyses Performed	Minimum Detectable Concentration (MDC) (a)	Indicator Locations Mean (b) Range (Fraction)	Indicator Location With Highest Annual Mean Name Distance & Direction	Mean (b) Range (Fraction)	Community Locations Mean (b) Range (Fraction)	Control Locations Mean (b) Range (Fraction)
Zn-65	260	NDM (0/2)	NA		NA	NDM (0/2)
Cs-134	130	NDM (0/2)	NA		NA	NDM (0/2)
Cs-137	150	17.9 16-19 (2/2)	Smith's Bend 2 miles Downstream	17.9 16-19 (2/2)	NA	18.2 17-19 (2/2)
RIVER SHORELINE SEDIMENT (pCi/kg dry)						
Gamma Isotopic 4						
Be-7	655 (e)	NDM (0/2)	NA		NA	NDM (0/2)
Cs-134	150	NDM (0/2)	NA		NA	NDM (0/2)
Cs-137	180	NDM (0/2)	NA		NA	NDM (0/2)

TABLE 3 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM SUMMARY FOR 1995
Farley Plant, Docket Nos. 50-348 and 50-364
Houston County, Alabama

NOTATIONS

a. The MDC is defined in ODCM 10.1. Except as noted otherwise, the values listed in this column are the detection capabilities required by ODCM Table 4-3. The values listed in this column are a priori (before the fact) MDCs. In practice, the a posteriori (after the fact) MDCs are generally lower than the values listed. There were no MDC values during the year which were greater than the values listed in this column.

b. Mean and range are based upon detectable measurements only. The fraction of all measurements at a specified location which is detectable is placed in parenthesis.

c. No Detectable Measurement(s).

d. Not Applicable.

e. The EL has determined that this value may be routinely attained under normal conditions. No value is provided in ODCM Table 4-3.

ATTACHMENT 1

JOSEPH M. FARLEY NUCLEAR PLANT
LAND USE CENSUS AND MILK ANIMAL SURVEY
JUNE 16, 1995

	Distance In Miles To Nearest					
	Resident		Milk Animal			
Radial Sectors 22.5 Degrees Each	1994	1995	1994	1995	Reason For Change	Individuals Interviewed
North Northeast (01)	2.5	2.5	>5	>5	N/A	Mr. Art Freeman Note 3
Northeast (02)	2.4	2.4	>5	>5	N/A	*Mr. Judson Freeman Ms. Barbara Kilpatrick
East Northeast (03)	2.4	2.4	>5	>5	N/A	*Mrs. Jim Donaldson
East (04)	2.8	2.8	>5	>5	N/A	*Mrs. Booker T. Spivey
East Southeast (05)	3.0	3.0	>5	>5	N/A	*Mrs. Mary Esther Allums
Southeast (06)	3.4	3.4	>5	>5	N/A	*Ms. Katherine Smith Mr. David Barber
South Southeast (07)	>5	>5	>5	>5	N/A	Note 2
South (08)	4.3	4.3	>5	>5	N/A	Ms. Dorris Wade Mrs. Thomas Dean Note 3
South Southwest (09)	2.9	2.9	>5	>5	N/A	*Mr. Roderick Marshall Ms. Delores McGriff
Southwest (10)	1.2	1.2	>5	>5	N/A	*Mr. Walter Whatley
West Southwest (11)	2.4	2.4	>5	>5	Note 1	Mr. George Grimsely Note 3
West (12)	1.3	0.9	>5	>5	Note 4	*Ms. Cheryl Shaw
West Northwest (13)	2.1	2.1	>5	>5	N/A	*M Robert Sauls
Northwest (14)	1.5	1.5	>5	>5	N/A	Ms. Lytesia Ryalls Note 3
North Northwest (15)	3.3	3.3	>5	>5	N/A	*Mrs. Thomas Steely
North (16)	2.6	2.6	>5	>5	N/A	*Mr. Tony Knighton

*Nearest Resident in Sector

Note 1: The closest residence was listed as unoccupied in 1994 but is now occupied.
Note 2: No resident within 5 miles in sector 7. Georgia Pacific Paper Co. (GPPC) located in sector 7, 3.9 miles from plant site. Air sampler, surface water sampler, TLD located on GPPC plant site.
Note 3: Unable to contact nearest resident in this sector. Personal observation of residence location and interviews with neighbors or other residents indicate no milk animals present.
Note 4: A new trailer was placed at the intersection of Alabama Highway 95 and Nuclear Plant Road approxiamtely 0.9 miles from the plant vent stacks.