

**SUPPORTING STATEMENT FOR REQUESTS FOR APPROVAL UNDER
THE PAPERWORK REDUCTION ACT AND 5 CFR 1320
Survey of Farms in the Vicinity of Nuclear Power Plants
OMB Approval #3316-0016**

A. Justification

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

The Nuclear Regulatory Commission (NRC) requires that all nuclear plants that are operating, or are about to operate, conduct a survey of residents within five (5) miles of the plant. The purpose of the survey is to locate in each of the sixteen compass sectors, for monitoring and modeling purposes, the nearest residents, home gardens and animals producing milk for human consumption. The license conditions also require the consideration of the impacts of the use of irrigation water from streams receiving effluents from the nuclear plants.

This monitoring is a mandated requirement of the NRC and is specified in the plant technical specifications or other supporting documents. TVA currently has three (3) nuclear power plants that are licensed for operation by the NRC. The appropriate sections of the supporting documentation outlining the requirements for the surveys for the Browns Ferry, Sequoyah and Watts Bar Nuclear Plants are attached (see Appendix A, Browns Ferry Nuclear Plant Offsite Dose Calculation Manual (ODCM); Appendix B, Sequoyah Nuclear Plant ODCM, and Appendix C, Watts Bar Nuclear Plant ODCM).

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

In accordance with the licensing requirements, TVA's Environmental Radiological Monitoring and Instrumentation Department monitors milk and food products on a regular basis. The results of these surveys identify the locations of the nearest residents, gardens, and milk animals to aid in the selection of the sampling locations.

The plant licensing documents prescribe a radiological environmental monitoring program to sample, among other things, soil, milk, vegetation, food crops and water supplies. The primary purpose of this monitoring program is to determine if the operation of the plants has an adverse impact on the environment or on people living near the plants. The data obtained in the land use survey provides guidance regarding the selection of locations that should be sampled and is used to estimate radiological exposures to people who live or work in the vicinity of the plants.

The survey (see TVA form 9476, Farmer Questionnaire), is required by Control 1.2.3 of the respective ODCMs for Browns Ferry (Appendix A), Sequoyah (Appendix B), and Watts Bar (Appendix C) Nuclear Plants. The questions in the survey are designed to collect the information called for in the radiological environmental monitoring specifications. A summary of the primary purposes of the questions included in the survey is outlined below:

Question 1: For identification purposes.

Questions 2 and 3: To determine water sources that could be influenced by plant operations.

Question 4: To identify potential locations for taking samples produced in home gardens.

Questions 5, 6 and 7: To identify locations producing milk for human consumption and to aid in the identification of milk sampling locations.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g. permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.

The licensing conditions require an annual survey of residents within a 5-mile radius of each plant. Because the respondents are typically farmers and rural residents, the use of computers and other electronic information collection and transmission measures and methods is precluded. Additionally, TVA does not believe it is feasible to conduct the survey by mail or telephone. The person conducting the survey is required to be in the survey area weekly to read radiation monitors. Once each year he incorporates conducting the survey into his monitor reading activities.

For survey purposes, the 5-mile area around each of TVA's nuclear plants is divided into 16 sectors. The residents who were surveyed the year before may not qualify for the current survey because they may not have a home garden, milk animal, etc., that they had the previous year. When a resident cannot be resurveyed, the surveyor must then visually locate a new resident to survey who has one or more of the survey requirements (home garden, milk animal, etc.).

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

The United States Department of Agriculture offices have indicated that they do not collect this type of information nor are they aware of any other organizations or agencies which may collect this type of information.

5. If the collection of information impacts small business or other small entities (Item 5 of OMB Form 83-I), describe any methods used to minimize burden.

This collection of information does not involve small businesses or other small entities. The respondents are farmers and rural and/or residential residents.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

If the collection were not conducted or were conducted less frequently, the licenses for the operation of the nuclear power plants could be revoked.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:
 - requiring respondents to report information to the agency more often than quarterly;
 - requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;
 - requiring respondents to submit more than an original and two copies of any document;

- requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;
- in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;
- requiring the use of statistical data classification that has not been reviewed and approved by OMB;
- that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or
- requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.

There are no special circumstances that require the collection of information to be conducted in a manner inconsistent with the guidelines of 5 CFR 1320.6.

8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years—even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

A copy of the Federal Register Notices are attached. There were no public comments.

During 1988 and 1989, at the request of the Office of Management and Budget, the questionnaire was reduced from six (6) pages to four (4) pages. In addition, the maximum possible data elements to be completed from information received from the respondents was reduced from 373 to 197. The survey has been further reduced to two (2) pages and less than about 110 possible data elements. These reductions have reduced the burden on each respondent to approximately 15 minutes.

The respondents are not required to keep any records; and since the information is collected by personal interview, their prior understanding of the questionnaire is not necessary. In addition, the majority of the respondents do not change from one survey to the next. In these cases, the survey only involves updating the information for the location.

9. Explain any decision to provide any payment or gift to respondents, other than reenumeration of contractors or grantees.

None.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

Respondents are assured that the information provided will not be used in making decisions about them individually. Information that is furnished and which is personally identifiable will be

considered confidential and will not be disclosed, as guaranteed under the Privacy Act of 1974, unless TVA is required to do so by law.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

Not applicable. Questions of a sensitive nature are not included in this collection of information.

12. Provide estimates of the hour burden of the collection of information. The statement should:

- Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.

- If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I.

- Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead this cost should be included in Item 14.

Approximately 150 respondents are personally interviewed annually. This number is obtained by actual count. The annual burden per respondent is approximately 15 minutes. Consequently, the annual burden is estimated to be 40 hours.

The estimated hourly wage (including benefits) for the TVA service area is \$19.00; therefore, the estimated respondent cost is \$760 ($\19×40 hours = \$760 total estimated annualized cost to respondents). The hourly wage information was obtained from the PEW Center on the States, a research organization administered by the University of Richmond. A sixty percent load for benefits was added to the \$12.00 from the PEW Center to reach the estimated hourly wage of \$19.00.

13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14).

- The cost estimate should be split into two components: (a) a total capital and start-up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.

- If cost estimates are expected to vary widely, agencies should present rates of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services

should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.

- Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.

TVA receives no appropriated funds; therefore, the cost of this information collection is paid from power-generated revenue. TVA estimates that 50 hours is spent annually to conduct the survey at each of the three nuclear power plants, for a total of 150 annual hours. Another 150 hours is spent annually by TVA employees to enter information into GELIC, the dose calculation computer program, and to run the required reports for each of the three nuclear plants. the estimated cost for gathering this information is:

Salaries (300 hours)	\$12,000
Overhead	3,000
Travel	2,000
Support Staff	500
Printing and supplies	500
Total	\$18,000

Because this data is obtained by personal interview, there is no cost to the respondents except for their time.

14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information. Agencies also may aggregate cost estimates from Items 12, 13, and 14 in a single table.

See responses to numbers 12 and 13.

15. Explain the reasons for any program changes or adjustment reported in Items 13 or 14 of the OMB Form 83-I.

Not applicable.

16. For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

This information will not be published for statistical use.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

Not applicable.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submissions," of OMB Form 83-I.

Not applicable.

B. Collections of Information Employing Statistical Methods

Not applicable. This survey does not employ statistical methods.

Appendix A
Land Use Survey Requirements
from the
Browns Ferry Nuclear Plant
Offsite Dose Calculation Manual

1/2 CONTROLS AND SURVEILLANCE REQUIREMENTS

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.2 LAND USE CENSUS

CONTROLS

1.3.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence and the nearest garden¹ of greater than 500 square feet producing vegetables in each of the 16 meteorological sectors within a distance of 5 miles. (For elevated releases as defined in Regulatory Guide 1.111, Revision 1, July 1977, the land use census shall also identify the locations of all milk animals and gardens of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of three miles.)

¹ Broad leaf vegetation sampling may be performed at the SITE BOUNDARY in the direction sector with the highest D/Q in lieu of the garden census.

APPLICABILITY: At all times.

ACTION:

With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the maximum value currently being calculated in Section 7.5, identify the new location(s) in the next Annual Radiological Environmental Operating Report.

With a land use census identifying a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from which samples are currently being obtained in accordance with ODCM Control 1.3.1, add the new location(s) to the REMP within 30 days if the owner consents. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s) (via the same exposure pathway) may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted. Identify the new location(s) in the next Annual Radiological Environmental Operating Report and provide a revised figure(s) and table(s) reflecting the new location(s).

SURVEILLANCE REQUIREMENTS

(see next page)

1/2 CONTROLS AND SURVEILLANCE REQUIREMENTS

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.2 LAND USE CENSUS

SURVEILLANCE REQUIREMENTS

2.3.2 The land use census shall be conducted at least once per calendar year between the dates of April 1 and October 1 using the following techniques:

1. Within a 2-mile radius from the plant or within the 15 mrem per year isodose line, whichever is larger, enumeration by a door-to-door or equivalent counting technique.
2. Within a 5-mile radius from the plant, enumeration by using appropriate techniques such as door-to-door survey, mail survey, telephone survey, aerial survey, or information from local agricultural authorities or other reliable sources.

BASES

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.1 MONITORING PROGRAM (continued)

radiological effluent monitoring program by verifying that the measurable concentration of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. The REMP satisfies the requirements of 10 CFR 50, Appendix A, Criteria 64 and 10 CFR 50, Appendix I, Section IV.B.2.

1/2.3.2 LAND USE CENSUS

This requirement is provided to ensure that changes in the use of UNRESTRICTED AREAS are identified and that modifications to the monitoring program are made if required by the results of this census. The best survey information from the door-to-door, mail, telephone, aerial or consulting with local authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. Restricting the census to gardens of greater than 500 square feet provides assurance that significant exposure pathways via the leafy vegetables will be identified and monitored since a garden of this size is the minimum required to produce the quantity (26 kg/year) of leafy vegetation assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were used: 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/square meter.

1/2.3.3 INTERLABORATORY COMPARISON PROGRAM

The requirement for participation in an Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

Appendix B
Land Use Survey Requirements
from the
Sequoyah Nuclear Plant
Offsite Dose Calculation Manual

1/2 CONTROLS AND SURVEILLANCE REQUIREMENTS

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.2 LAND USE CENSUS

CONTROLS

1.3.2 A Land Use Census shall be conducted and shall identify within a distance of 8 km (5 miles) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence, and the nearest garden^a of greater than 50 m² (500 ft²) producing fresh leafy vegetables.

^aBroad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the site boundary in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census. Specifications for broad leaf vegetation sampling in Table 2.3-1 shall be followed, including analysis of control samples.

APPLICABILITY: At all times.

ACTION:

- a. With a Land Use Census identifying a location(s) that yields a calculated dose or dose commitment 20% greater than at a location from which doses are currently being calculated in ODCM Section 7.3 and 7.4 identify the new location(s) in the next Annual Radioactive Effluent Release Report pursuant to ODCM Administrative Control 5.2.
- b. With a Land Use Census identifying a location(s) that yields a calculated dose or dose commitment (via the same pathway) 20% greater than at a location from which samples are currently being obtained in accordance with the requirements of ODCM Control 1.3.1, add the new location(s) within 30 days to the radiological environmental monitoring program given in ODCM Section 9.0, if samples are available. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s), via the same exposure pathway, may be deleted from this monitoring program after October 31 of the year in which this Land Use Census was conducted. Pursuant to ODCM Administrative Controls 5.2 and 5.3, submit in the next Annual Radioactive Effluent Release Report documentation for a change in the ODCM including a revised figure(s) and table(s) for the ODCM reflecting the new location(s) with the information supporting the change in sampling locations.
- c. The provisions of Controls 1.0.3 and 1.0.4 are not applicable.

1/2 CONTROLS AND SURVEILLANCE REQUIREMENTS

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.2 LAND USE CENSUS

SURVEILLANCE REQUIREMENTS

- 2.3.2 The Land Use Census shall be conducted during the growing season at least once per 12 months using that information that will provide the best results, such as by a door-to-door survey, mail survey, telephone survey, aerial survey, or by consulting local agricultural authorities. The results of the Land Use Census shall be included in the Annual Radiological Environmental Operating Report pursuant to ODCM Administrative Control 5.1.

BASES

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.1 MONITORING PROGRAM

The radiological environmental monitoring program required by this Control provides representative measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides that lead to the highest potential radiation exposures of members of the public resulting from the station operation. This monitoring program implements Section IV.B.2 of Appendix I to 10 CFR Part 50 and thereby supplements the radiological effluent monitoring program by verifying that the measurable concentration of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. Guidance for this monitoring program is provided by the Radiological Assessment Branch Technical Position on Environmental Monitoring.

The required detection capabilities for environmental sample analyses are tabulated in terms of the lower limits of detection (LLDs). The LLDs required by Table 2.3-3 are considered optimum for routine environmental measurements in industrial laboratories. It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.

Detailed description of the LLD, and other detection limits can be found in HASL Procedures Manual, HASL-300 (revised annually), Curie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry," *Anal. Chem.* 40, 586-93 (1968), and Hartwell, J. K., "Detection Limits for Radioanalytical Counting Techniques," Atlantic Richfield Hanford Company Report ARH-SA-215 (June 1975).

1/2.3.2 LAND USE CENSUS

This Control is provided to ensure that changes in the use of unrestricted areas are identified and that modifications to the monitoring program are made if required by the results of that census. The best survey information from the door-to-door, aerial, or consulting with local agricultural authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50. Restricting the census to gardens of greater than 500 ft² provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to provide the quantity (26 kg/yr) of leafy vegetables assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were used, 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/m².

1/2.3.3 INTERLABORATORY COMPARISON PROGRAM

The requirement for participation in an Interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are reasonably valid.

Appendix C
Land Use Survey Requirements
from the
Watts Bar Nuclear Plant
Offsite Dose Calculation Manual

1/2 CONTROLS AND SURVEILLANCE REQUIREMENTS

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.2 LAND USE CENSUS

CONTROLS

1.3.2 A Land Use Census shall be conducted and shall identify within a distance of 8 km (5 miles) the location in each of the 16 meteorological sectors of the nearest milk animal, the nearest residence, and the nearest garden* of greater than 50 m² (500 ft²) producing fresh leafy vegetation.

* Broad leaf vegetation sampling of at least three different kinds of vegetation may be performed at the UNRESTRICTED AREA BOUNDARY in each of two different direction sectors with the highest predicted D/Qs in lieu of the garden census. Controls for broad leaf vegetation sampling in Table 2.3-1 Part 4.c., shall be followed, including analysis of control samples.

APPLICABILITY: At all times.

ACTION:

- a. With a Land Use Survey identifying a location(s) that yields a calculated dose or dose commitment greater than the values currently being calculated in Control 2.2.2.3, pursuant to ODCM Administrative Controls 5.1 and 5.2, identify the new location(s) in the next Annual Radioactive Effluent Release Report.
- b. With a Land Use Census identifying a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20% greater than at a location from which samples are currently being obtained in accordance with the requirements of ODCM Control 1.3.1, add the new location(s) within 30 days to the radiological environmental monitoring program given in ODCM Section 9.0, if samples are available. The sampling location(s), excluding the control station location, having the lowest calculated dose or dose commitment(s), via the same exposure pathway, may be deleted from this monitoring program after October 31 of the year in which this Land Use Census was conducted. Pursuant to ODCM Administrative Controls 5.2 and 5.3, submit in the next Annual Radioactive Effluent Release Report documentation for a change in the ODCM reflecting the new location(s) with the information supporting the change in sampling locations.
- c. The provisions of SR 2.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

2.3.2 The Land Use Census shall be conducted during the growing season at least once per 12 months using that information that will provide the best results, such as by a door-to-door survey, mail survey, telephone survey, aerial survey, or by consulting local agricultural authorities. The results of the Land Use Census shall be included in the Annual Radiological Environmental Operating Report pursuant to ODCM Administrative Control 5.1.

The requirements for evaluating compliance with 40 CFR 302 are added to ensure compliance with these limits. The regulation states that federally permitted releases do not have to determine compliance with the reportable quantities unless the permitted release allowance is exceeded.

1/2.3 RADIOLOGICAL ENVIRONMENTAL MONITORING

1/2.3.1 MONITORING PROGRAM

The Radiological Environmental Monitoring Program required by this Control provides representative measurements of radiation and of radioactive materials in those exposure pathways and for those radionuclides that lead to the highest potential radiation exposures of MEMBERS OF THE PUBLIC resulting from the plant operation. This monitoring program implements Section IV.B.2 of Appendix I to 10 CFR 50 and thereby supplements the Radiological Effluent Monitoring Program by verifying that the measurable concentration of radioactive materials and levels of radiation are not higher than expected on the basis of the effluent measurements and modeling of the environmental exposure pathways. Guidance for this monitoring program is provided by the Radiological Assessment Branch Technical Position on Environmental Monitoring, Revision 1, November 1979. The initially specified monitoring program will be effective for at least the first three years of commercial operation. Following this period, program changes may be initiated based on operational experience.

The required detection capabilities for environmental sample analyses are tabulated in terms of the lower limits of detection (LLDs). The LLDs required by Table 2.3-3 are considered optimum for routine environmental measurements in industrial laboratories. It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.

Detailed description of the LLD, and other detection limits can be found in HASL Procedures Manual, HASL-300, Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry," Anal. Chem. **40**, 586-93 (1968), and Hartwell, J. K., "Detection Limits for Radioanalytical Counting Techniques," Atlantic Richfield Hanford Company Report ARH-SA-215 (June 1975).

1/2.3.2 LAND USE CENSUS

This Control is provided to ensure that changes in the use of areas at and beyond the UNRESTRICTED AREA BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of that census. The best information from the door-to-door survey, mail survey, telephone survey, aerial survey, or by consulting with local agricultural authorities shall be used. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR 50. Restricting the census to gardens of greater than 50 m² provides assurance that significant exposure pathways via leafy vegetables will be identified and monitored since a garden of this size is the minimum required to provide the quantity (26 kg/y) of leafy vegetables assumed in Regulatory Guide 1.109 for consumption by a child. To determine this minimum garden size, the following assumptions were used, 1) that 20% of the garden was used for growing broad leaf vegetation (i.e., similar to lettuce and cabbage), and 2) a vegetation yield of 2 kg/m².