

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

VERIFICATION AND CERTIFICATION PROTOCOL--
SUPPLEMENT NO. 2 TO THE
FUSRAP SUMMARY PROTOCOL

NOVEMBER 1985
REVISION 1

Division of Facility and
Site Decommissioning Projects

Office of Nuclear Energy

U.S. DEPARTMENT OF ENERGY

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

VERIFICATION AND CERTIFICATION PROTOCOL--
SUPPLEMENT NO. 2 TO THE
FUSRAP SUMMARY PROTOCOL

NOVEMBER 1985
REVISION 1

Division of Facility and
Site Decommissioning Projects

Office of Nuclear Energy

U.S. DEPARTMENT OF ENERGY

CONTENTS

| | <u>Page</u> |
|--|-------------|
| INTRODUCTION | 1 |
| CERTIFICATION | 1 |
| Remedial Action Measurements | 7 |
| Independent Verification by DOE | 7 |
| Independent Verification by Others | 9 |
| Certification Docket Preparation and Review | 9 |
| APPENDIX I Procedure for Independent Verification of Remedial Action and Correction of Discrepancies at FUSRAP and Vicinity Properties | I-1 |
| APPENDIX II Certification and Verification Sample Maintenance and Archiving Process | II-1 |

INTRODUCTION

This supplement to the general Formerly Utilized Sites Remedial Action Program (FUSRAP) protocol outlines the procedures for the verification of remedial action and the ultimate certification of a FUSRAP site's radiological condition. This supplement is intended as an amplification of the description of the certification process presented in the "Certification of Site Conditions Phase" section of the FUSRAP Summary Protocol. The certification process includes the collection of data necessary to confirm the compliance of the remedial action with applicable radiological guidelines and the preparation of materials required to permanently document the radiological condition of the site following completion of remedial action activities.

The verification and certification activities involve several elements including (1) post-remedial action measurement, (2) independent verification (independent verification of results and/or procedures by the Department of Energy (DOE) and/or others as appropriate), (3) interaction with and/or notification of concerned parties, and (4) final project documentation.

The various activities and subelements of the certification process are managed and implemented by the FUSRAP project office at the DOE Oak Ridge Operations (Technical Services Division, OR-TSD) and their contractors. The discussion to follow outlines the activities within the certification process and discusses responsibilities.

CERTIFICATION

The discussion of the certification process is divided into three general types of activities in the discussions to follow:

- o Remedial Action Measurements
- o Independent Verification (by DOE and others)
- o Certification Docket (Federal Register Notice and Owner Notification)
 - Preparation,
 - Review, and
 - Distribution

The first activity is the final step in the remedial action phase of FUSRAP and is the major source of data supporting the certification effort. The other two elements makeup the portion of FUSRAP known as

the certification phase. Figure 1 is a conceptual diagram of the process and its relationship to the remedial action phase. Figure 2 is a conceptual time line showing the relative time relationships of these activities. Figure 3 is a conceptual flow chart of the certification process.

The process outlined in this supplement begins with activities conducted during the remedial action Phase by the Project Management Contractor (PMC). These activities involve excavation/decontamination control measurements, supportive sampling and analyses, and preparation of the post-remedial action report. They are implemented by the PMC and managed and overviewed by OR-TSD.

The independent verification activities, for the most part, run parallel with remedial action and post-remedial action activities. The reviews, surveys, measurements and documentation prepared during this element of the certification process are prepared by an independent DOE contractor not involved in the remedial action activity. Additional information may be received from state or other Federal agencies. As with the DOE independent verification activity, the State and other Federal agency activities may involve independent review of the remedial action contractors reports as well as independent measurements.

The draft certification docket is compiled by the OR/TSD (FUSRAP Project Office) and includes a summary of the action, documentation supporting the compliance with criteria, a copy of the interim letter to the property owner, the draft certification statement, and the draft Federal Register Notice. The complete draft docket is sent to Division of Facility and Site Decommissioning (DFSD) for review and comment. The final certification statement is approved by the field office and the final Federal Register notice is signed and issued by DOE Headquarters (Figure 4).

FUSRAP remedial actions involve activities to clean-up or stabilize radioactively contaminated land and structures. While the remedial actions are conducted in a manner that would insure that no user of the site would receive doses in excess of those allowable (reference FUSRAP and Remote SFMP Criteria and Guidelines), the criteria for clean-up of structures differ from those used for the clean-up of land. Criteria used in the decontamination of structures are primarily surface contamination guidelines and external gamma limits.* Maximum permissible concentrations of radionuclides in the air and radon/radon daughter limits are also used.* For open areas or land, allowable soil concentration guidelines are used as remedial action criteria.* As a result of the differences in the types of

*The U.S. Department of Energy Guidelines for residual radioactivity at Formerly Utilized Sites Remedial Action Program and remote Surplus Facilities Management Program Sites (Rev. 1, July 1985).

FIGURE 1. Conceptual Diagram of the Certification and Its Relationship to the Remedial Action Phase

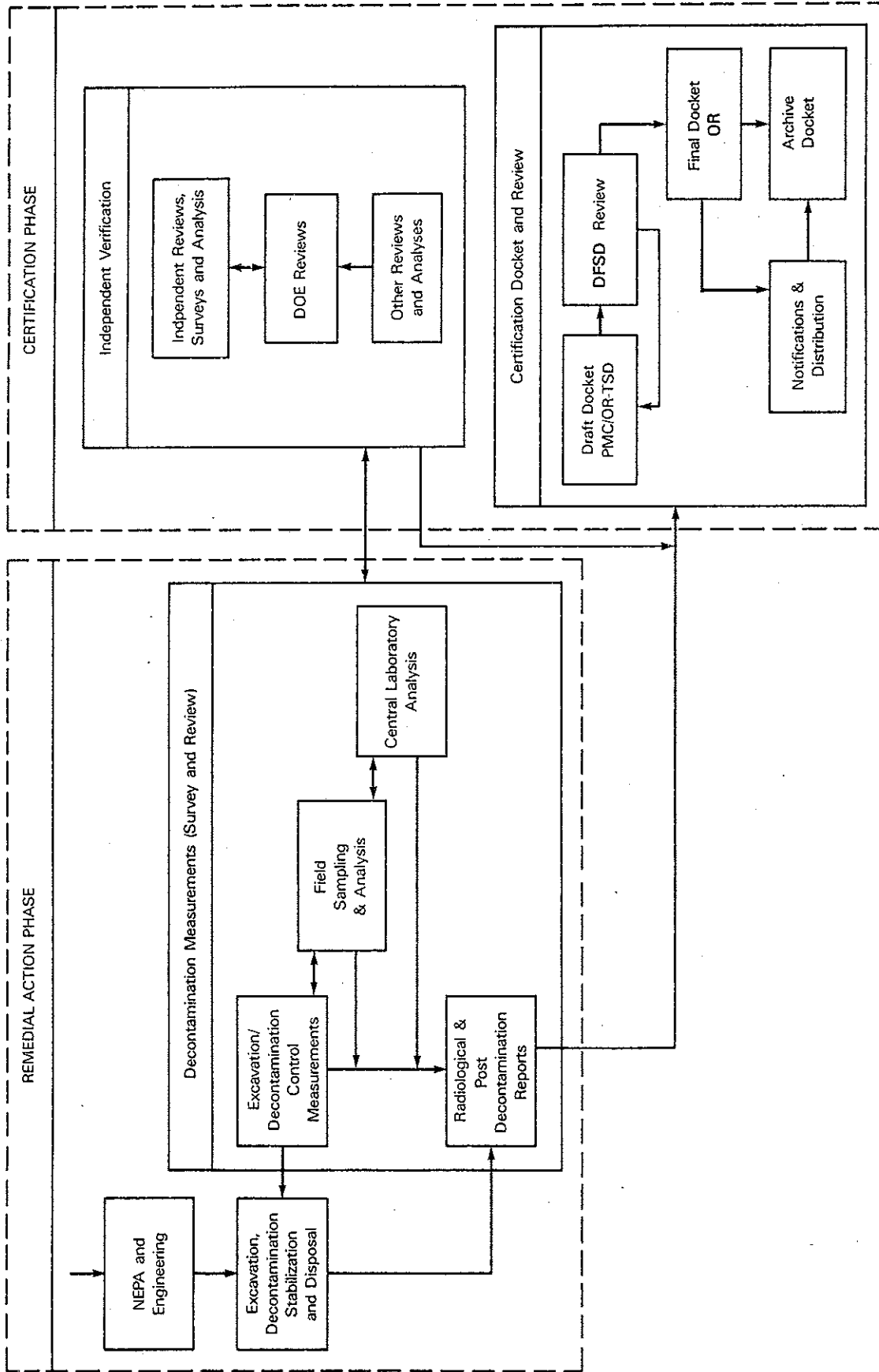
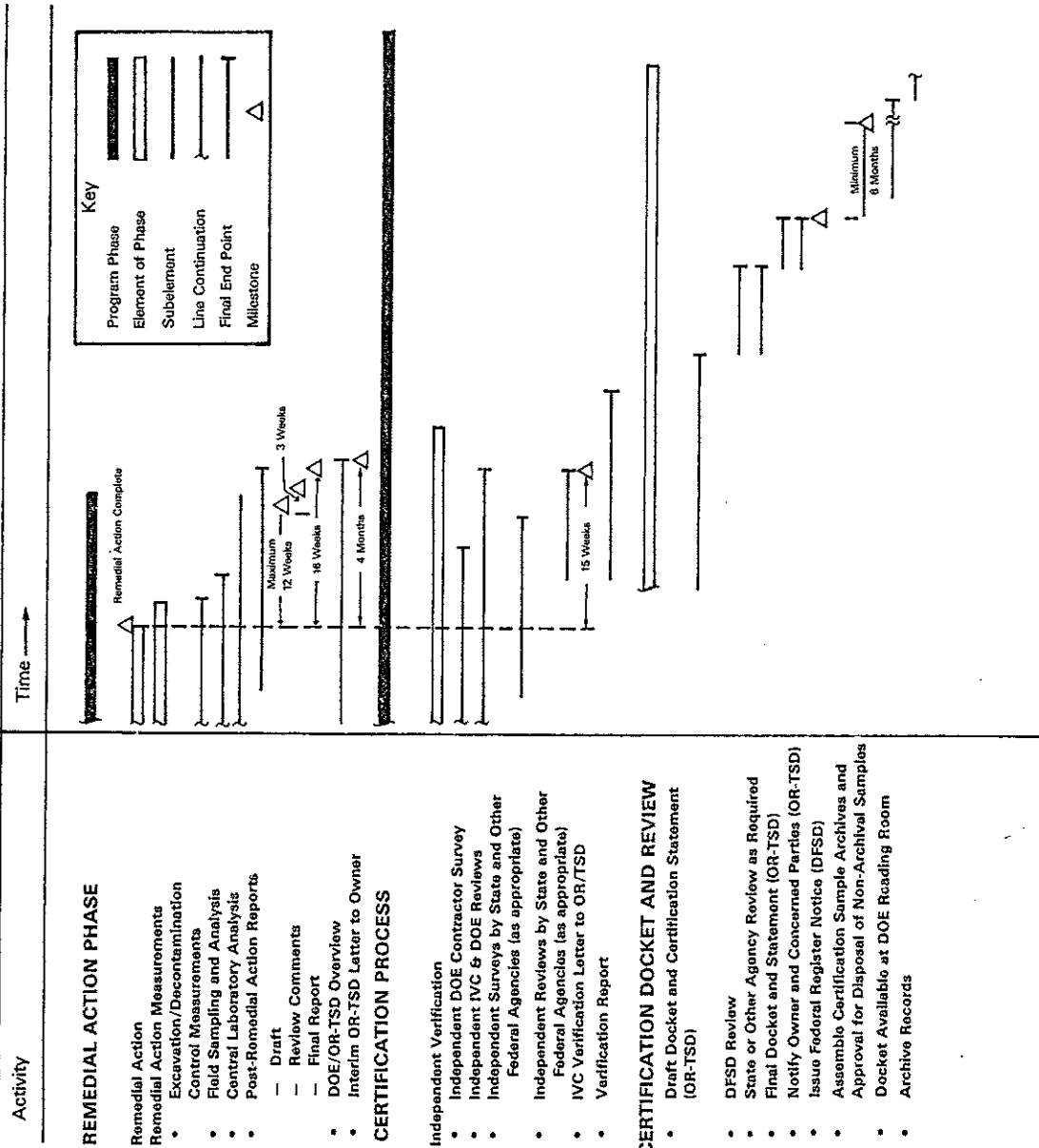


FIGURE 2. Conceptual Time Line Chart-Relationships of Relative Dates for Supplements of the Certification Process*



*Actual Time Units Are Remedial Action Specific. This Chart Is Presented To Identify Relative Initiation and Completion Times at Various Subelements of the Certification Process.

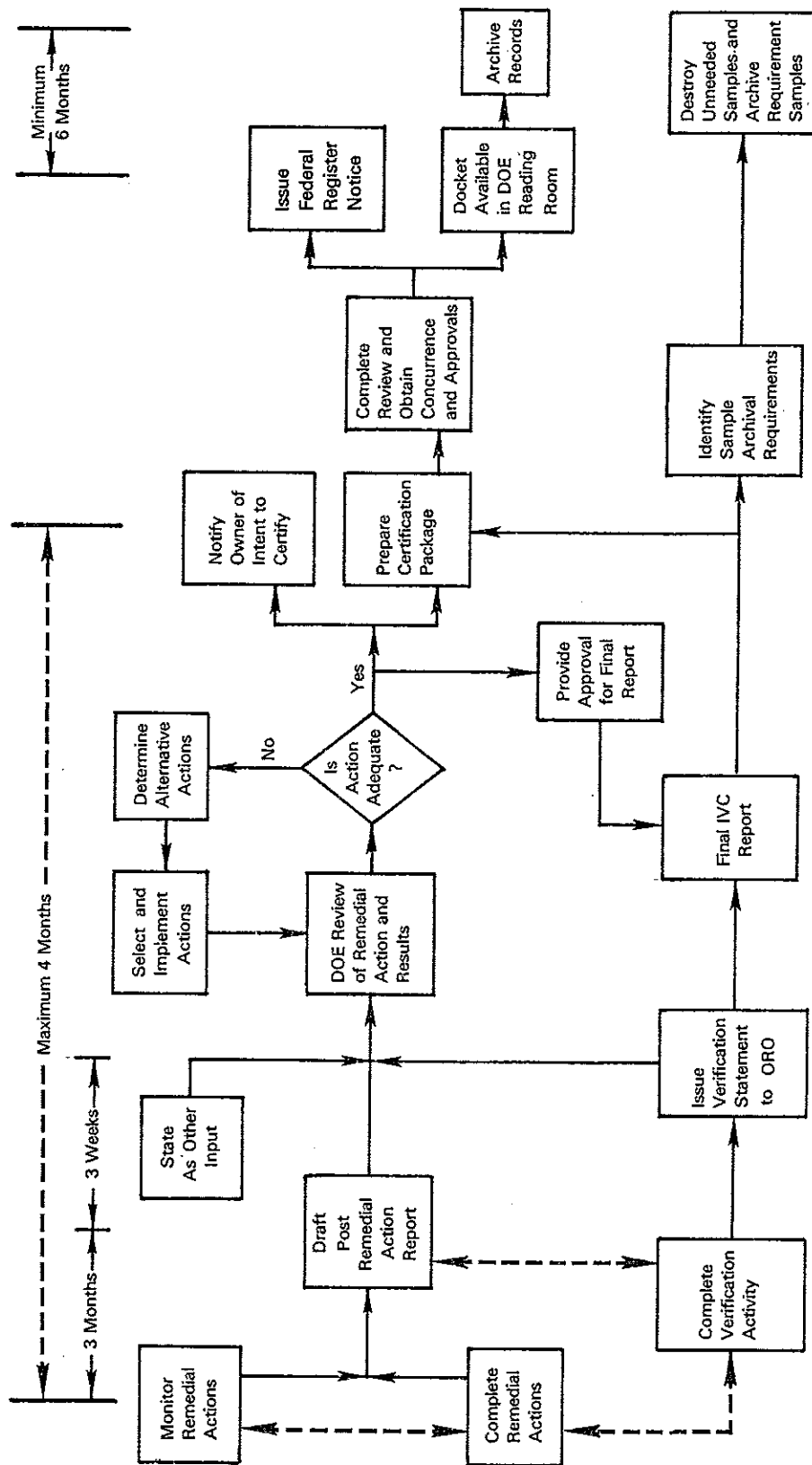


Figure 3. GENERAL FLOW CHART FOR CERTIFICATION PROCESS

Sequence for Final Docket Sign-Off and Assembly

1. The Field obtains approval of the certification statement and the Federal Register Notice from the Field Office Chief Counsel. The Federal Register Notice submitted for approval should include a copy of the concurrence chain.
2. The Field obtains approval of the draft Federal Register Notice from DOE Headquarters MA-213.13.
3. The following is transmitted to NE-23 for final approval after Chief Counsel concurrence of the certification statement and MA concurrence of the Federal Register Notice:
 - a. Memorandum for signature (to NE-20 from NE-23 recommending certification).
 - b. Federal Register Notice for signature by NE-20.
 - c. Bound certification docket.
 - d. Published documents referenced in Exhibit II of the bound docket. (Items a, b, and c include DOE F 1325.10, Official File Copy, to indicate appropriate concurrence.)

A copy of the memorandum (a) will be included in the final docket as is the signed certification statement and signed Federal Register Notice.

4. NE-20 signs the Federal Register Notice.
 - a. Copies of the signed Federal Register Notice are transmitted to the field for inclusion in the final docket.
 - b. The original plus two copies or two signed duplicate originals of the Federal Register Notice and DOE F 1325.10 (Official File Copy) are sent to MA-213.13 by DFSD for publication.
5. The Field inserts copies of the signed memorandum, the Certification Statement and the Federal Register Notice into the bound docket and makes distribution, as appropriate, to the local public document room, state, etc. (Five copies of the bound docket, along with the referenced published documents, are sent to DFSD for entry into DOE public document room at Washington, D.C., and headquarters distribution.)
6. The Field Office will be responsible for notifying the State and local governments, as necessary, and property owners of the certification action. The state will be requested to insert a notice in land record offices if appropriate.

Figure 4. The Certification Procedure/Chronological Outline

criteria and guidelines applied to building and land decontamination, the requirements for verification sampling and analyses vary somewhat for buildings and land. These differing requirements are discussed in this protocol.

Remedial Action Measurements. Excavation/decontamination control measurements (using portable gamma-, beta-gamma-, and, where necessary, alpha-measuring instruments) will be used by field personnel to guide the remedial action and to make the preliminary determination as to the extent of the excavation and/or decontamination required. For cases of soil contamination, upon completion of each planned segment of a remedial action (as determined by the excavation control measurements and prior to backfilling activities) the on-site radiological contractor will take representative soil samples and analyze them at the field laboratory. If these analyses confirm that the remedial action criteria have been achieved, the backfilling can proceed. If the samples indicate that additional material must be removed, the remedial action contractor will be informed of the requirements and take appropriate action.

A representative number of the remedial action soil samples will also be sent to a central laboratory for final sample confirmation. The results of these analyses will be compared with the field data to ensure compliance with the remedial action criteria.

Compliance with criteria in structure or building decontaminations will be demonstrated by field measurements except in those cases where air sampling is required. Surface contamination and gamma measurements will be taken to ensure compliance with the FUSRAP criteria and guidelines or standards referenced in that criteria document. As appropriate, representative samples will be taken from the air, water, and residue samples that were analyzed in the field and used to support the confirmation of the site's condition. Again, as appropriate, samples will be sent to a central laboratory for confirmatory analyses.

These activities will also include the review of radiological data after the completion of the remedial action by DOE/OR. The results of the radiological support contractors surveys and confirmatory analyses will be documented and included as part of the PMC's post-remedial action report. A draft of the report will be issued for DOE and Independent Verification Contractor (IVC) review within 3 months of the completion of the remedial action. The final report will be issued about 1 month later presuming DOE and IVC comments are provided within a 3-week period after receipt of the draft report.

Independent Verification by DOE. DFSD will provide an independent overview evaluation of the remedial action through review of the reports prepared by the PMC. Independent measurements, sampling and analyses and review of procedures and remedial action survey results will be completed by a DOE contractor (IVC) not directly associated

with the remedial action. The IVC will have primary responsibility for the scope of its field investigation. The IVC will prepare a generic plan outlining the procedures to be used during verification activities. The plan will be submitted to the Field Office and DFSO for approval. The IVC will then provide DFSO and the Field Office with only a brief outline of site specific plans for sites selected for verifications. The outline will reference the generic plan and note special concerns. The generic plan will describe the types of verification actions that may be taken and the reasons for applying certain procedures to specific types of sites. The IVC may conduct two types of verification reviews (types A and B) at a site or group of properties. Type A verifications will include review of the remedial action and radiological contractors data and possibly the analyses of some split samples. Type B verifications will include an on-site visit and survey involving direct measurements and sampling and/or split sample analyses. The primary purpose of both of these actions is to confirm the adequacy of the procedures and methods used by the remedial action and radiological contractors. In the field, the IVC may increase or decrease the scope of the independent verification survey on the basis of field data. Appendix I outlines the procedures to be used by the IVC for independent verification of remedial action and procedures to correct for any discrepancies found during the verification process. The OR/TSD will be responsible, through their management function, to assure that the verification activities are consistent with this protocol.

Independent verification will be accomplished on all FUSRAP remedial action sites. The level of verification required will be decided by DOE with input from the IVC. Off-site or vicinity property remedial actions may be verified in groups where so recommended by the IVC and approved by the DOE. These independent evaluations will further verify that the remedial action was accomplished in accordance with standards and criteria appropriate for the project. Within 4 months after the completion of a remedial action, the verification contractor will issue a verification statement and provide copies to DFSO and OR/TSD. In the case where vicinity properties were grouped and verifications were only completed on selected properties, the verification statement shall be written to cover all the properties in the group on the basis of the results of the selected properties. Upon receipt of this verification statement, OR/TSD will send an interim letter (notification of intent to certify) to each of the site or property owners.

The results of the verification survey will be presented in a final report, and like the post-remedial action report, will be reviewed by DOE-Headquarters, OR/TSD, and, as appropriate, the state and other Federal agencies. In addition to the final reports, representative samples from the remedial action survey and the verification survey will be properly labeled, retained and archived for an appropriate period (see Appendix II). The samples shall not be discarded until such time as the final certification package for the specific site is

completed, undergoes review, and is archived following an appropriate period of availability at the DOE public document reading room (see Appendix II). Throughout the planning, implementation, reporting and archival activities associated with this process, the IVC and PMC will work closely to optimize overall performance. The IVC and PMC will make every effort to resolve scheduling conflicts and expedite information exchange and on-site activities. Procedures to handle minor discrepancies in the field shall be developed and agreed upon by the IVC, PMC, and remedial action contractor. DOE (DFSD and OR/TSD) should be notified of any problem that cannot be handled by the contractors as far in advance of the verification statement as possible, and will take expeditious actions to insure that the remedial action and verification are adequately implemented.

If it is determined by the IVC that the remedial action was not successfully completed or that the radiological data and supporting information or procedures are not adequate to allow certification of the site, such findings will be reported to DOE immediately. OR/TSD, with assistance from DFSD, will review the problems and take appropriate steps to have deficiencies corrected or resolve the IVC defined problems. The 4 month maximum time period from completion of remedial action to notification of the owner by OR/TSD will not be in effect in cases where adequacy of certification data is in question. The time limitation will again be in effect once the issue is resolved.

Independent Verification By Others. Upon request made to DOE in advance of the initiation of remedial actions, qualified Federal, state, and local agencies will be given the opportunity to perform independent measurements and analyses or to analyze split samples taken during DOE radiological surveys. Each agency will also be given the opportunity to review the radiological support contractors measurement, sample collection and preparation and analytical procedures and the resulting data. Local groups desiring to implement such actions will have to do so through their state or local governments.

Certification Docket Preparation and Review. Following completion of the post-remedial action report and the verification statement, DOE/OR-TSD will be responsible for (1) providing the owner, within 4 months after completion of a remedial action activity, an interim notification of DOE's intent to certify the remedial action; and (2) the draft certification docket for the specific site (outlined in the Certification of Site Conditions Phase section of the FUSRAP Summary Protocol). The final docket (see Figure 5) and certification statement will be issued after completion of the docket review cycle also discussed in the FUSRAP protocol. The draft certification docket shall be prepared by OR-TSD for each completed remedial action. The dockets may be prepared by phase (if the remedial action is conducted in phases) and may include groups of vicinity properties as appropriate. A docket is to include the items discussed above and

Certification Docket

- (A) Introduction to the Docket
 - (1) Purpose and Contents of the Docket
 - (2) Property Identification (general description and drawings of property being certified)
- (B) Exhibit I - Summary of Activities at the Specific Site
 - (1) Site History (MED/AEC use; ownership history and use; and FUSRAP activities at site)
 - (2) Site Description (past and current)
 - (3) Radiological History and Status (survey and monitoring information, and criteria for determining need for remedial action)
 - (4) Selection of Remedial Action (option selected; criteria for the remedial action; cost-benefit analysis; and health effects evaluation, where appropriate)
 - (5) Summary of Remedial Action (what was done; how it was done; waste volume and waste types; disposal location; cost breakdown; and occupational and public exposures)
- (C) Exhibit II - Documents Supporting the Certification of the Site

These include but are not limited to:

 - (1) Decontamination or Stabilization Criteria
 - (2) Designation or Authorization Documentation
 - (3) Characterization Report
 - (4) NEPA Documents
 - (5) Agreements (with owner, state, and so forth)
 - (6) Post Remedial Action Survey and Monitoring Report
 - (7) Verification report and interim verification letter to the owner
 - (8) State, County, and Local Comments On Remedial Action (and others as appropriate)
 - (9) Recommended Restrictions and Actions Taken to Implement Them
 - (10) Federal Register Notice
 - (11) Approved Certification Statement
- (D) Exhibit III - Diagrams and/or Figures or Tables Supporting the Certification
- (E) Relevant Documents

Figure 5. Certification Docket Contents and Outline

listed in Figure 5. The final Federal Register notice, and approved Certification Statement will be included in the docket and any required changes will be made to the text summaries at the time of DOE DFSD review of the draft docket.

The certification statement will be forwarded by the field office (OR/TSD) to the property owner and the state in which the property is located. A notice will also be published by DOE headquarters in the Federal Register. The state or local government as appropriate will be requested to have the land records annotated to indicate completion of the remedial action and to establish a public record of the certification that the remedial action criteria, guidelines or standards have been achieved or that restrictions are required for continued use of the site. Upon publication of the Federal Register notice, the certification docket containing a complete historical record of the remedial action, including the certification statement and the final project reports, will be placed in the DOE public document room at Washington, D.C., and the Field Office locations for a suitable period of time before it is permanently archived.

APPENDIX I

Procedure for Independent Verification of Remedial Action and Correction of Discrepancies at FUSRAP and Vicinity Properties

INTRODUCTION

Independent verifications will be carried out for FUSRAP sites and vicinity properties in order to provide additional assurance for certification that the authorized limits for the remedial action have been achieved. The FUSRAP remedial action activities are managed by the DOE Oak Ridge Operations Technical Services Division (OR/TSD). Onsite verification surveys will be carried out for some vicinity properties and for all sites. Heavily contaminated vicinity properties, or properties where independent surveys are requested by the owner, local or State officials, will have onsite verification surveys. The procedure for conducting and reporting the independent verification is described below.

INDEPENDENT VERIFICATION PROCEDURE

The Independent Verification Contractor (IVC) will perform all or some of the following verification activities: (1) review the site characterization survey, the remedial action plan, available progress reports, and data for the remedial action and restoration of each property or site; (2) schedule a visit to the selected property or site immediately following remedial action, without significantly delaying or interrupting the restoration efforts or some time after the restoration of the site; (3) perform gamma scans for selected locations where excavation has occurred; (4) perform discrete gamma measurements at specific grid locations for comparison with remedial action authorized limits; (5) perform beta-gamma and alpha measurements as required to verify decontamination of structures and/or equipment; (6) perform independent soil sampling and analysis of excavated areas for comparison with remedial action authorized limits; (7) perform independent environmental sampling and analysis as required to confirm that radionuclides in air and water are within required limits for the specific remedial action; (8) perform independent analyses of soil samples selected from the contractor's archives for the vicinity properties at which independent gamma surveys or soil sampling were not performed; the selection of the archive samples for independent analysis will be based on statistical guidelines as determined by the IVC; (9) prepare a verification letter.

The number of these activities and the detail to which they are conducted will depend on the type of verification activity being implemented. Type A verifications in general will include the review of the radiological and remedial action contractor results and, in some cases, an analysis of split samples. Where necessary to confirm results after the restoration, a visit to the site may be warranted. Type B verification will be more thorough and may include all of the nine activities depending on the site conditions and magnitude of the action. The verification letter and report are prepared for both type of surveys.

Review of Remedial Action

All site designation and characterization reports, remedial action plans, progress reports, and survey data pertaining to the specific site of interest will be made available to the IVC for review. These reviews will be conducted as part of Type A verifications and to plan the Type B verification surveys and to determine whether the remedial action plans were changed during the course of remedial action in a manner which would affect the site conditions or the conduct of the verification survey. Post-remedial action data will also be provided to and reviewed by the IVC for both Type A and Type B surveys. The post-remedial action data will be provided to the IVC in a timely manner such that review of the information can be completed and the verification letter sent within 3 months of the completion of remedial action.

Site Visits

A visit will be scheduled to a selected vicinity property or site undergoing remedial action prior to restoration or immediately following the remedial action. Every effort will be made to establish an open communication by both the IVC and the remedial action contractor to avoid interruption or delay of the construction schedule. The IVC will notify OR and/or the PMC of those vicinity properties and site areas which will be sampled or surveyed for verification prior to closure. OR or PMC, as appropriate, will notify the IVC at least 72-hours prior to closure of these selected sites. The notice may be given on the basis of a group of properties, not necessarily for each vicinity property. The IVC is responsible to accomplish any verification survey and sampling without interference with the construction schedule providing at least a 72-hour advance notice is given.

Gamma Scanning and Discrete Measurements

A gamma scan and possibly a set of discrete measurements will be performed on either excavated vicinity properties or site areas. The survey will be performed to the site characterization and remedial action survey grids and will be performed in accordance with

ORNL/TM-8600*, its equivalent, or other guidance provided through the field office and approved by DFSD. The exposure rates will be recorded on a map of the property or site area for comparison with the data taken by the remedial action contractor. This map will be compared with the authorized limits.

Other Direct Measurements

Beta-gamma and alpha measurements performed, as required, in areas, structures, and/or equipment affected by the remedial action or decontamination, will be tied to previous remedial action related surveys. These measurements and scans will be performed in accordance with procedures in ORNL/TM-8600 or its equivalent. The results will be recorded on maps, drawings, or tables of the structures, equipment, or areas and compared to authorized limits.

Soil Samples

About five verification soil samples will be taken from a selected excavated vicinity property or site area on a systematic pattern. This number may change according to the size of the vicinity property or site area and the contamination pattern. The soil samples will be obtained from the surface (15 cm depth) or subsurface (15 cm depth) of the decontaminated area. These soil samples will be analyzed by the IVC for the radionuclides specified in the remedial action plan and will be compared with the authorized limits. If no soil sample is taken from a property or area by the IVC, an independent analysis will be performed by the IVC using selected soil samples taken from the remedial action contractor's archive. The samples will be selected and analyzed in accordance with the procedures in ORNL/TM-8600, its equivalent, or other guidance provided through the field office and approved by DFSD.

Air and Water Samples

Representative verifications samples of air or water will be collected and analyzed when determined necessary through reviews of the site data. Sufficient samples will be collected at discrete locations by the IVC to confirm the remedial action contractors results and verify compliance with the appropriate criteria. The samples will be collected and analyzed in accordance with procedures in ORNL/TM-8600, its equivalent, or other guidance provided by the field office and approved by DFSD.

*ORNL/TM-8600, "Procedure Manual for the ORNL Remedial Action Survey and Certification Activities (RASCA) Program"

Comparison of Results

Procedures for comparison of IVC results to those of the radiological contractor will be discussed in the IVC's generic plan. In general, comparison of split samples will be done on a sample to sample basis. The IVC and remedial action contractors results should agree within the expected statistical deviations of the analysis methods used. IVC survey results (direct measurements, sampling and analysis) should be compared to the remedial action contractor results on the basis of the criteria, taking into account averaging requirements as well as sampling and analysis considerations.

Corrective Action for Discrepancies

If the IVC verification survey or sample analyses show that any result is above authorized limits for the remedial action (a discrepancy), a corrective action to resolve this discrepancy must be taken by OR. The IVC will notify DFSD (NE-23) and OR of the discrepancy as soon as possible. OR will determine and instruct the remedial action contractor whether additional cleanup action will be taken or an exception will be requested as specified in the FUSRAP/Remote SFMP Guidelines. The IVC will re-verify the property or site area after corrective action. The corrective action and any exception will be recorded in a corrective action section of the final report or closeout report prepared by the remedial action contractor.

Verification for Post-Remedial Action Report

After the completion of the post-remedial action, verification survey or review, radiological survey and laboratory analyses of soil samples, a verification letter and report will be prepared by the IVC for each vicinity property or site. The authorized limits and the background levels of radiation will be compared to the verification results. The verification letter will address the comparative results of the verification activities and include a statement of verification. The verification report will include the field and laboratory analyses results and any anomalies that were noted during independent verification survey and any reverification survey. Appropriate tables and a listing of results will be included as well as illustrations of the areas surveyed; i.e., soil sample locations and identifications, gamma levels, etc. In the case of the Type A verifications the report will summarize the basis for the IVC's finding of the adequacy of the action (or discrepancy) and reference supporting data or reports. The conclusion of the verification report, whether Type A or B verification, will be a finding of whether the authorized limits for the remedial action were met and a statement of any exceptions.

Where data are available, the post-remedial action report will include (summarize) the findings of the verification report or, as appropriate, reference the verification report and/or letter.

APPENDIX II

Certification and Verification Sample Maintenance and Archiving Process

All samples collected by the remedial action contractor and the DOE Independent Verification Contractor for the purposes of certifying a specific site or property will be logged and maintained by them until the certification process is complete.

Six months following the issuance of the Federal Register notice of certification and the availability of the docket in the public document room, the certification/verification sample archival process will be initiated. At that time or thereafter, the IVC will assemble, log, and archive a representative number (as defined below) of certification or verification samples (at least 500g/sample, if possible) to be maintained over a 5-year period. These samples will be held as evidence of the adequacy of the remedial action and to backup the certification docket. All other samples may be disposed of (in an appropriate manner) by the contractors following the establishment of the sample archives for the particular site and/or vicinity properties.

The majority of the archival samples are expected to be derived from the IVC collection of samples; however, the IVC will review his samples and those of the remedial action radiological contractor to determine if any of these samples should be consolidated into the archives.

The IVC will provide the remedial action contractor with guidelines and specific directions regarding samples required for the archive from his inventory. The remedial action contractor will be responsible for the correct labeling, packaging, and transmittal of these samples to the IVC and for providing information accurately identifying the locations where the samples were derived. Guidance with regard to sample collection, handling, labeling, and storage is available in documents prepared or referenced in the generic verification plan by the IVC.

The IVC will take similar actions with their samples and will consolidate the two sets of samples into one group with common keys and legends identifying the sampling locations. These samples will then be archived by the IVC. The IVC may then take steps to appropriately dispose of any excess samples and will notify the remedial action contractor that they are free to do the same. The archived samples will be held for a minimum period of five years and the IVC will notify DOE and obtain approval prior to disposal of the archived samples.

SAMPLE SELECTION

The selection of samples for the archives will be done in a systematic manner. Approximately 10 percent, but not less than five samples, of all certification or verification samples taken for each site, vicinity property, or each group of properties will be archived. Proper care shall be taken to ensure that adequate samples are taken for each site. Grouping of vicinity properties for the purpose of sample archiving is permissible in cases where many small vicinity properties are located near one another, contamination removed from the area were of a similar nature, or the remedial actions were completed during the same construction period or season without any significant interruptions. Samples from a site and vicinity properties which are contiguous with the site and were decontaminated during the same period may also be included in the same sample selection process and archived together.

In general, samples will be selected out of the total sample population with the only restriction being that the samples should provide a representative areal cross section of the site or properties being certified.

For cases where some special circumstances exist, a greater number of samples may be selected to better represent the post-remedial action conditions at the location of interest. Examples of such locations include:

- Areas that had exceptionally high concentrations of radionuclides prior to remedial action.

- Areas that were the subject of some conflict, question, or discrepancy between DOE and other groups, including owners, states, other Federal agencies, or local groups.

- Areas at which the IVC and the radiological contractors data initially disagreed or areas where the independent verification survey identified discrepancies that had to be resolved.

- Areas for which exceptions to the designated site criteria were requested.

The number of samples archived will be proportional to the area of the site. If the area of concern covered a large area (several hundred square meters) and was very non-uniform in nature (varied isolated depths, varied concentrations and nuclide make-up) extra samples should be preserved.