Westinghouse
Hanford Company

P.O. Box 1970 Richland, WA 99352

March 1, 1988 8701604 R2

Mr. J. R. Patterson, Director (3)
Nuclear and Occupational Safety
Division
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352

Dear Mr. Patterson:

EMPLOYEE SAFETY AND HEALTH COMPLAINT - ASBESTOS IN 284 EAST AND WEST POWERHOUSES

References: (1) Letter, W. J. Schlauder to J. R. Patterson, "Employee Safety and Health Complaint-Asbestos in 284 East and West Powerhouses, " November 4, 1987

As discussed in reference (1), a formal asbestos management plan for the 284 East and West Powerhouses was to be developed and included in the 200 Areas Asbestos Management Plan by March 1, 1988. This letter reports completion of that action and transmits for information the 200 Area Asbestos Management Plan.

Please contact Mr. G. A. Stanton, 373-2467, of my staff for additional information.

Very truly yours,

R. G. Slocum, Manager
200 Area Support Services

pay

Attachment (1)

DOE-RL - A. W. Kellogg, AMO Operations Officer (w/o attachments)

200 AREA SUPPORT SERVICES

ASBESTOS MANAGEMENT PLAN

Plan
Compiled by

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1.0 EXECUTIVE SUMMARY

The 200 Area consists of 428 buildings and 82 trailers. Seventy-four (74) buildings are free of friable asbestos, 106 have asbestos in areas, and 248 buildings are scheduled to be inspected for asbestos content. The trailers are considered to be free of asbestos since the were brought on site after 1978. These buildings are located in Purex, East and West Powerhouses (including steam distribution), East and West Tank Farms, B-Plant, Landlord, 222-S Laboratory, U03 Plant, Plutonium Finishing Plant and Surplus Facilities. The cumulative backlog of insulation work is estimated at in excess of 100,000 man-hours.

There is no friable asbestos situation which is posing a hazard to the employee or the environment. Instances where friable conditions existed are under physical and administrative control.

The insulator work backlogged at Purex, The Plutonium Finishing Plant, the East and West Powerhouses and Tank Farms, U03 Plant and B-Plant needs to be studied and planned in much greater detail than presented due to the complexity of accomplishing insulator work in these facilities.

Associated cost estimates will be prepared for these facilities and submitted in the Annual Work Plan and crosscut budgets. The primary basis for the plan submittal would be that the backlog for each facility would be reduced significantly at the end of 5 years.

2.0 INTRODUCTION

This document describes the planning requirements for asbestos control within the perimeter fences of the Hanford 200 East Area and 200 West Areas. Control will include: encasement, encapsulation, removal, or maintenance and repair depending on the circumstances and the environment at the location of incidence. Inspection, sampling and analysis, surveillance, sampling and removal documentation, and cost control are discussed. Repair, encapsulation and removal are stressed as methods to pursue for asbestos abatement.

2.1 PURPOSE

The purpose of the 200 Area Asbestos Management Plan (AMP) is to provide Facility Plans of Action for asbestos abatement, surveillance, control and record keeping by organization responsibility. Actions performed in response to this plan will be consistent with: Federal, State and local regulations, DOE and DOE-RL Orders, and Westinghouse Hanford Company Policy.

2.2 BACKGROUND

This plan provides the detail of the FY 1988/89 Hanford 200 Area Facility Plans for asbestos abatement management in the Hanford 200 Areas. In addition, it supports associated needs identified in letters 8701604 R1,"Employee Safety and Health Complaint-Asbestos in the 284 East and West Powerhouses" and 52610-MSE-87-115, "Preliminary 200 Area Asbestos Management Plan Outline. The Fiscal Year 1988 Operations Directive, Item C.1.U contains the requirement to; "Develop a site wide Asbestos Encapsulation and Removal Plan for the Westinghouse Hanford Company Facilities. This Plan also provides detail for the site plan.

2.3 SCOPE

This Plan establishes asbestos management requirements within the 200 Area Support Services Function. Geographically the plan includes buildings or facilities within the perimeter fences of the 200 East, 200 West and 600 Areas that are maintained by 200 Area Support Services personnel. Plan requirements include: Federal, State and local regulations, orders, internal work authorization and control, surveillance, training, work performance, record keeping and periodic assessment.

* Approval of the job shall be by the use of the Hazardous Work Permit.

* Pre-job safety planning and the Hazardous Work Permit shall reflect the presence of multiple hazards, or hazards which could be encountered, and the precautions to be observed..

* Informing the workers of the hazards and protective measures shall be properly documented on the permit.

* Permits shall be maintained consistent with DOE-RL requirements.

2.4.2.3 Requirement: The communication of toxic material health hazard and monitoring results shall meet the requirements of OSHA 29 CFR 1926.58(F) and (k),for asbestos, DOE-RL 5480.10, WISHA WAC 296-62, 65 and 155, and OSHA 29 CFR 1910.1200, Hazard Communication.

* Employees shall be notified:
  1. In writing of monitoring results.
  2 Any personnel exposure in excess of action levels.
  3. Hazards of the toxic material.

* Employees shall be permitted to observe the toxic material monitoring and know the purpose of the monitoring.

* Employees with a potential exposure to toxic materials that exceed the action levels shall be provided medical surveillance; i.e. asbestos, 29CFR 1926.58(M), and WISHA 296-155-175.

* Labels and signs shall be properly installed.

* HEHF provides the Westinghouse Hanford Company with monitoring reports.

* Documentation will address:
  1. Summary, introduction, conclusion, and discussion of the work
  2. Findings as related to the performed work.
  3. Discussion of the observations made on the job.
  4. Methods used for sample monitoring and analysis.
  5. Description of physical and environmental conditions.
  6. Relevant pictures or diagrams.
  7. Monitoring equipment calibration.

2.4.2.4 Requirement: An asbestos competent person as required in OSHA 29 CFR 1926.58(b) and (e) and WISHA, WAC 296-155 shall be identified and trained for all large scale asbestos removal or encapsulation work.

1. Environmental safety and personnel protection consistent with the requirements listed above and that:

2. All areas and buildings known to contain asbestos are inspected at least annually to assure that asbestos and insulation is not in disrepair.

2.4.3.4 Employee orientation will include asbestos safety awareness training.

2.4.3.5 Periodic Safety Meetings will stress asbestos awareness, hazards, precautions and safety. Employees will be assured at these meetings that the environment in which they work does not contain unsafe levels of asbestos fibers.

3.0 CURRENT SITUATION

The current 200 Area situation is presented for erected buildings, main supply trunk lines, yard piping, and outdoor facilities within the fence lines and subdivided into control groups. These groups are: 1) Tank Farms, 2) Purex, 3) B-Plant, 4) Steam and Water Utilities, 5) UO3 Plant, 6) Plutonium Finishing Plant, 7) 222-S Area, 8) Landlord, and 9) Surplus Facilities. Summary discussion is presented for each group using detail from Facility Plans.

3.1 TANK FARMS

3.1.1 The condition of the insulating materials in the East & West Tank Farms and T-Plant are established by surveillance inspection performed to Preventive Maintenance Procedures; 2E11001, 2W11001 and 2T11001. Corrective maintenance is performed by Work Authorization and usually involves re-encapsulation or replacement. Existing equipment is adequate to do small jobs of less than 10 sq. ft. Occasionally larger jobs are encountered. Funds are committed for a portable decontamination facility to be available during this fiscal year to support large jobs. The presently available shops are adequate to meet the needs of the assigned insulators.

3.1.2 Additional surveillance for asbestos hazards is performed in the Tank Farms and T-Plant. All personnel receive awareness safety training which results in direct reporting to supervision of potentially hazardous situations.

3.1.3 Air sampling is presently performed by the Hanford Environmental Health Foundation (HEHF) by request through Industrial Safety and Fire Protection (IS&FP). IS&FP maintains the analysis records as received from HEHF, reports the results to the requesting organization, and keeps a copy of the sample records.

3.1.4 The assigned insulators and selected Tank Farms Operations personnel are trained as certified asbestos workers and three supervisors are "competent persons". Nuclear operators, radiation protection technologists, riggers, and carpenters are planned for selected training.

3.1.5 Currently there is no backlog of asbestos abatement work at either Tank Farms or T-Plant. There is, however, insulation replacement required where asbestos or other insulation has been removed. This amounts to approximately 5500 man-hours in the Tank Farms and 1100 man-hours in T-Plant.

3.1.6 Asbestos related activities are consistent with the requirements of paragraph 2.4

3.2 PUREX

3.2.1 The PUREX Facility has been under continuous insulation repair since 1982 in readiness for startup and subsequent operations. The scope of this plan includes buildings 202-A, 211-A, 212-A, 291-A, 293-A, and the minor buildings adjacent to these larger structures. Assigned certified asbestos workers are performing encapsulation and repair activity. Presently there is a large backlog of insulator work at PUREX, some of which is friable.

3.2.2 Asbestos related activities are consistent with the requirements of paragraph 2.4.

3.2.3 All Insulation and lagging is inspected annually (25% of the Facility quarterly) using Preventive Maintenance Procedure, PM 2A11001, "Insulation/Lagging Inspection-PUREX Complex".

3.2.4 Corrective maintenance is initiated as a result of the inspection findings and through craft awareness to the hazards of asbestos insulation. This awareness is promulgated from periodic safety meetings on the subject of fibrous materials hazards. Asbestos work at PUREX is performed using the 200 Area Work Authorization Tracking System (WATS). WATS is used to record asbestos work uniquely and to maintain historical records from which all asbestos work can be recalled for detail or accountability.

3.2.5 HEHF-qualified personnel obtain, analyze, document and report results of all air samples obtained at PUREX.

3.2.6 PUREX Maintenance personnel have been provided all of the necessary shop tools and equipment required to safely comply with WISHA and DOE-RL regulations when removing asbestos material.

3.2.7 Asbestos awareness training has been presented to all PUREX Plant Personnel. This training is ongoing and reaffirmed periodically at safety meetings.

3.2.8 The PUREX backlog of repair work is approximately 140 work orders estimated at 19,700 man-hours. Some of these work authorizations have noted friable asbestos involved. These will be repaired and encapsulated in Fy 1988.

3.3 B-PLANT

3.3.1 B-Plant insulating materials are inspected annually by Preventive Maintenance Procedure PM-2B11001. Inspections in fiscal year 1986 resulted in placing more emphasis on encapsulation, repair and replacement of asbestos. A resident crew of insulators was established at that time and asbestos abatement started.

3.3.2 B-Plant asbestos abatement activities are consistent with the requirements of paragraph 2.4.The plant plans to continue with an aggressive encapsulation and repair program consistent with past practices. Recent accomplishments involve work in the AMU, Pipe & Operating Gallery Cells, Canyon & Operating Gallery Fans, the East PRV Station, 211-B tankage, and some outside line work.

3.3.3 Repair maintenance is initiated by the Work Authorization as a result of the Preventive Maintenance Inspection or through the safety awareness program in place by The Westinghouse Hanford Co. New and permanent employees are oriented to the hazards of asbestos fibers and are requested to report the presence of or suspected presence of friable asbestos.

3.3.4 The in-plant shops and equipment at B-Plant are acceptable to the needs of the insulator craft.

3.3.5 Air sampling at B-Plant is performed by HEHF and the records are maintained by Industrial Safety & Fire Protection.

3.3.6 Assigned Insulators and selected supervision are certified asbestos workers and/or "competent persons." Periodic plant safety training is used to increase awareness to the hazards of asbestos fibers.

3.4 STEAM and WATER

3.4.1 The Steam and Water asbestos activities of the 200 East and 200 West Areas are consistent with the requirements of Paragraph 2.4 Annual inspections are performed in the Powerhouses to Preventive Maintenance Procedures 2P11001 (East)and 6P11001 (West).

3.4.2 A recent sample analysis of 41 bulk samples taken from the 284-East and 284-West powerhouses produced 39 samples containing asbestos. These samples were taken selectively from items such as: feed water lines, blowers, drums, valves, gaskets, feed pump exhaust and flash tanks. Work is in process to encapsulate or remove asbestos where it is friable. This work is ongoing repair maintenance with work authorization cost rollup to one principal work authorization.

3.4.3 Personnel assigned to the powerhouse have been appraised of the hazards of asbestos and that it is present and being abated in the work area. Air samples are routinely taken in the work area and found to be consistently below the action level.

3.4.4 There are only small general work shops in the powerhouses. This means that General Area Services imports all portable equipment and materials or pre-fabricates parts in the 2101-M or 275UR Insulator shops which are approximately 1/4 mile from the powerhouse.

3.4.5 Insulator personnel are trained as Certified Asbestos Workers and/or Competent Persons as appropriate to their assignment. Safety films are provided and viewed at periodic safety meetings showing the hazards of asbestos and the precautions to be taken.

3.4.6 The backlog of asbestos repair work in the Powerhouse Facilities is in excess of the present fiscal year funding.

3.4.7 Planning and scheduling insulator repair work in the Powerhouses is complicated by the high operational demands for steam for process operations at the operating facilities. This allows for limited downtime for repairs that require a system cooldown, since a significant portion of the asbestos insulation is on piping and components common to the main steam distribution system and auxiliaries required for operation of any one of the five boilers.

3.4.8 Asbestos is routinely being removed from the Steam and Water Facilities concurrent with corrective maintenance to equipment.

3.6 Plutonium Finishing Plant (PFP)

3.6.1 The condition of the insulating materials in the Plutonium Finishing Plant was last evaluated and documented by inspection in August 1987. Selected repair, removal and encapsulation of friable and damaged insulation was recommended in Buildings 291-Z, 2735, 236-Z, Hot Laboratory, 241-ZA, 234-5Z duct level and Rooms 321, 325, 336, 337, 302, 303, 308, 260, 262, 263, 264, and 265. Areas of friable insulation exist and are isolated or are under limited access, or have been encapsulated.

3.6.2 Insulation inspection is performed annually to Preventive Maintenance Procedure, 2Z11001. Discrepancies noted from this inspection or through employee awareness are brought to the immediate attention of management for disposition. The Work Authorization Tracking System (WATS) is in place at PFP which will categorize asbestos insulation work as safety/hazardous once dispositioned to the system.

3.6.3 PFP asbestos related activities are consistent with the requirements of paragraph 2.4. Access is controlled to locations where friable insulation exists or the insulation is repaired or encapsulated.

3.6.4 Air samples for particulate contaminants are obtained by HEHF on request.

3.6.5 Insulator support is provided from General Area Services. Limited budget and manpower support results in very slow repair progress rates while working in a complex environment.

3.6.6 Insulators supporting the Plant are certified asbestos workers and three Supervisors are competent persons. Future asbestos worker training is planned for selected personnel. Personnel including; Nuclear Operators, Radiation Protection Technologists, Carpenters, Riggers, and Electricians will receive additional selected training to support PFP. Asbestos awareness training is provided periodically to all employees during safety meetings.

3.6.7 The estimated current backlog of insulator repair work at the PFP Facility is 21,914 man-hours

3.8.2 Industrial Safety performed a building sampling survey in 1985 and found acceptable asbestos containment. Facility Utilization is continuing to surveil these buildings and Area Services maintenance personnel are making necessary repairs. Presently the asbestos is under control and is not a safety or direct health risk to employees in the 200 Area general purpose buildings.

3.8.3 Maintenance and surveillance is being performed and is consistent with the requirements of Paragraph 2.4.

3.8.4 Facilities Utilization has a Preventive Maintenance Insulation Inspection Procedure in place which is on an annual recall cycle. The PM number is 6G11001.

3.8.5 Facilities Utilization contracts to Operations Support Services for Maintenance and Surveillance and therefore is not qualified to address equipment or shops adequacy.

3.9 Surplus Facilities

3.9.1 The surplus facilities plan includes all 200 Area buildings, tanks, stacks and vaults currently on the Surplus Facilities Listing.

3.9.2 It is assumed that all of the surplus facilities contain asbestos because of the dates in which they were built. These facilities are not occupied and are locked to prevent unauthorized entry.

3.9.3 Routine periodic surveillances are performed and documented by trained nuclear operators.

3.9.4 Off-normal conditions including friable or damaged asbestos are noted and reported to management for review, assessment, and corrective action.

3.9.5 The surplus facilities will eventually be decontaminated and decommissioned at which time the asbestos will be removed for disposal.

4.0 EVALUATION AND ACTION PLANS

4.1 This section addresses the current situations of paragraph 3.0 to the requirements of paragraph 2.4. The requirements resolve into the following listed tasks which need to be performed by each participating group. This will assure order and control while at the same time maintaining records to satisfy the requirements of other auditing or investigative units such as DOE-RL or Westinghouse Quality Control.

Implementation of the planning and control process should be performed by either the Operations Support Services, Maintenance Integration Unit or under the direction of a Cognizant Project Engineer. The planning, implementation and proposed work will be authorized and funded by the Program Offices using the Annual Work Plan Process.

TASK

4.1.1 INSPECTION-Characterize for asbestos by location, building, room, hall, frequency of occupancy, condition of asbestos, asbestos known and marked, unknown, bulk sample required, corrective action, abatement method.

4.1.2. SAMPLE AND ANALYSIS-The building construction records coupled with the above inspection will initiate, air sampling where friable insulation is found, bulk sampling where unknown product is found and analysis for both.

4.1.3 WORK AUTHORIZATION-All asbestos work and related administrative level, and if appropriate at the program level. Work order control is needed for traceability and accountability from finding to disposition.

4.1.4. Write corrective maintenance work orders for all discrepancies noted from tasks 1 and 2.

4.1.5. Prepare Plant Forces Work Reviews for all work authorizations which may require performance in accordance to Management Requirements and Practices 4.6 and Davis-Bacon Law.

4.1.6. Prioritize insulator work and obtain or prepare and document cost estimate by work authorization for the work area.

4.1.7. Authorize work performance as: removal and disposal of asbestos material, identify repaired area as non-asbestos (written or color code to procedure) and maintain a record of the volume removed or 4.1.8.

4.1.8 Repair, encapsulate and identify repaired area appropriately as a hazardous material.

4.1.9. Prepare A 200 Area Support Services Procedure on Asbestos Management
This item is proposed as a milestone.

4.1.10 Continue insulation surveillance within the 200 Areas using the Preventive Maintenance Procedure and the Preventive Maintenance Program.

4.1.11 Define building personnel asbestos awareness training requirements for occupants. new employees, certified asbestos workers, visitors, and competent persons.

4.1.12 Develop emergency procedures for building occupants where friable asbestos is found and action is required.

4.1.13 Develop and demonstrate a traceable record keeping system from asbestos found by inspection, to identification, to work authorization, to removal and burial and for sampling records, hazardous work permits, associated welding permits and burial permits.

Implementation of the above tasks should be the FY 1988/89 goals of 200 Area Support Services in addition to the following short term work accomplishment by each facility.

4.2 TANK FARMS ACTION PLAN

4.2.1 Provide support to the implementation of paragraph 4.1.

4.2.2 Prepare and publish the Tank Farms Asbestos Management Schedule and provide periodic reports.

4.2.3 Remove and replace approximately 120 sq. ft. of asbestos outside 242-T Evaporator.

4.2.4 Remove and replace approximately 120 sq. ft. of asbestos at the CR Vault.

4.2.5 Remove and replace asbestos at the 242-T evaporator.

4.3 PUREX ACTION PLAN

4.3.1 Provide support to the implementation of paragraph 4.1.

4.3.2 Prepare and publish the Purex Asbestos Management Schedule and provide periodic reports.

4.3.3 Provide .4 man-month level of effort to insulator Preventive Maintenance. This task is ongoing.

4.3.4 Work on 19,786 man-hour repair backlog assuming an increased Fy 1989 budget.

4.3.5 Repair and encapsulate Laboratory Equipment Room, East Change Room, Service Room, & 211-A outside lines.

4.4 B-PLANT ACTION PLAN

4.4.1 Provide support to the implementation of paragraph 4.1.

4.4.2 Prepare and publish the B-Plant Asbestos Management Schedule and provide periodic reports.

4.4.3 Continue to repair insulation in the Pipe & Operating Gallery, 271-B, 211-B, 291-B, and 212-B

4.5 STEAM and WATER ACTION PLAN

4.5.1 Provide support to the implementation of paragraph 4.1.

4.5.2 Prepare and publish the Steam and Water Asbestos Management Schedule and provide periodic reports.

4.5.3 Continue to repair and encapsulate deteriorated insulation or replace where necessary until a window is available wherein steam demand is reduced so that East Powerhouse sequential boiler shut down can be obtained for approximately 2 months at a time. This occurs following the completion of the East/West tie-line in about a year. West Powerhouse upgrade schedules will be established based on the demand schedule for steam above what the tie-line can provide to the West Area. Maintain encapsulation with the two insulator LOE budget presently in place during the remainder of FY 1988 unless a budget revision can be obtained sooner.

4.5.4 Prepare Plant Forces Work Reviews for all work scheduled in the powerhouses during FY 88 and 89 and obtain resolution by June 1, 1988. This will improve forward visibility for the FY 1989 task planning, headcount planning and budget distribution for asbestos abatement in the Powerhouses by 200 Area Support Services.

4.5.5 Increase FY 1989 budget for additional asbestos abatement activity both by plant forces and construction forces. The proposed FY 1989 abatement work needs to be planned and estimated for cost during the next four month period so that the Program Offices can plan accordingly. It is proposed that the plant forces insulator support to the powerhouses be increased. The Plant Forces budget needs for FY 1989 in the Powerhouses is estimated at $500,000 and about the same amount in addition for Construction refurbishment.

4.5.6 Prepare a detailed five year asbestos abatement plan and schedule for the East and West Area Powerhouses.

4.5.7 Provide routine surveillance and maintenance support to Buildings: 282E, 283E, 284E, 282W, 283W and 284W and the steam distribution lines.

4.6 UO3 PLANT ACTION PLAN

4.6.1 Provide support to the implementation of paragraph 4.1.

4.6.2 Prepare and publish the UO3 Plant Asbestos Management Schedule and provide periodic reports.

4.6.3 Identify and label asbestos materials by April 15, 1988.

4.6.4 Continue asbestos abatement at the 211-U Tank Farm, 224-UA Tower, D Cell in 224-U, Calciner cover replacement, re-seal acid lines 224-UA, ventrooms in 224-U/UA, sprayseal all outside lines or install metal jacket. Remove asbestos from the pot room and the old powder tower.

4.6.5 Buildings maintained by this effort include: 224-U, 224-UA, 272-U, 272-UA, 2715-U, 2715-UA, 2714-U, 211-U, and 207-U.

4.7 PLUTONIUM FINISHING PLANT ACTION PLAN

4.7.1 Provide support to the implementation of paragraph 4.1.

4.7.2 Prepare and publish the Plutonium Finishing Plant Asbestos Management Schedule and provide periodic progress.

4.7.3 Perform the annual inspection of all asbestos currently in PFP using the Preventive Maintenance Inspection Procedure and perform passive air sampling in those areas to determine if there is an exposure level hazardous to the safety of personnel.

4.7.4 Budget permitting complete repairs to 850 ft. of asbestos insulated lines in Room 321, Building 234-5Z; repair 200 ft of insulation in Building 291-Z; repair 100 ft.of asbestos insulation at 2735-Z; repair 200 ft. of piping insulation in Building 236-Z, 3rd and 4th floors; procure needed support materials including: insulation, clothing adhesives, plastic wrap, glove bags, plastic, disposal bags and boxes, labels, encapsulants, and surfactants. Budget permitting procure equipment including: HEPA vacuums and filters, water filters, scaffolding, tools, air vacuum machines, spray equipment and tools, decontamination equipment, and air sampling equipment.

4.8 222-S LABORATORY ACTION PLAN

4.8.1 Provide support to the implementation of paragraph 4.1.

4.8.2 Prepare and publish the 222-S Laboratory Asbestos Management Schedule and provide periodic reports

4.8.3 Near term work involves the abatement of friable asbestos in the 222-S duct level and pipe tunnel, identify all asbestos material in the facility, and support piping renovation in Building 219-S.

4.8.4 Support Preventive Maintenance Surveillance Inspection, PM S11001, and perform routine insulation repairs.

4.8.5 Provide insulator support to Buildings 219-S, 222-S, 222-SA,222-SB, 222-SC, 222-SF, and 2716-S. Only 219-S and 222-S contain asbestos.

4.9 LANDLORD FACILITIES ACTION PLAN

4.9.1 Provide support to the implementation of paragraph 4.1

4.9.2 Prepare and publish the Landlord Asbestos Management Schedule and provide periodic reports.

4.9.3 Perform inspection and sampling of facilities to complete Phase 1 & 2 which characterize the Landlord buildings.

4.9.4 Complete work plan and prepare budget request for FY 1989/90. activities. This completes Phase 3 of the planning process.

4.9.5 Budget permitting perform general abatement activity to repair and encapsulate friable conditions found during or subsequent to the 4330.1 inspection.

4.9.6 Budget permitting complete shingle drop test, training for Plant Engineers, demolish 2704-E and the graphite facility.

4.10 SURPLUS FACILITIES ACTION PLAN

4.10.1 Maintain strict access control to surplus facilities.

4.10.2 Post all building entrances with signs advising of possible asbestos hazards.

4.10.3 Assure that surveillance operators recognize the importance of reporting changes in the condition of the insulation which might release asbestos fibers.

4.10.4 Engineering will establish the most suitable method to abate an identified asbestos problem.

4.10.5 Asbestos removal will be addressed at the time of decontamination and decommissioning.

4.10.6 Surplus Facilities will maintain and remove asbestos in accordance with Decommissioning Operations Procedure DO-18, "100 & 200 Area Asbestos Removal".

5.0 RECOMMENDATIONS

The Facility Plans provided as support to the development of this plan indicate a level of asbestos abatement during the next 5 years which, with further planning and analysis, will demonstrate the probable need for additional insulator support. These personnel would work almost entirely asbestos abatement repair & encapsulation. Additional insulator personnel would best support the needs of the Action Plans through assignment to General Area Services from which they could be assigned daily to report to specific facilities when asbestos work at that specific facility is scheduled.

Prepare detailed 5-year work plans and cost estimates for the 200 Areas which show a significant reduction in the backlog of insulator repair work. Detail planning is needed for the Powerhouses (including steam distribution), PUREX, PFP, The Tank Farms, UO3 Plant and B-Plant due to their complex operational interaction which provides little time for the Powerhouse work.

The 5-year plans need to be developed in parallel to support the Annual Work Plans and FY 1989 budget development.

ASBESTOS CONTROL
STANDARD C-3

1.0 SCOPE

This standard provides the requirements and responsibilities for controlling airborne asbestos fibers.

2.0 REQUIREMENTS

Management shall assure that:

1. Asbestos which has become damaged or deteriorated is repaired, enclosed, encapsulated, or removed.

2. Pre-job safety planning is conducted prior to commencing each asbestos removal job including completion of a "Hazardous Work Permit" (54-5700-148) in accordance with Standard A-7, "Hazardous Work Permits."

3. Asbestos-free products are used; however, if an asbestos-free product cannot be found, the asbestos-containing product is approved by Industrial Safety and Fire Protection.

4. Large scale (>10 lin. ft. or >11 sq. ft.) asbestos abatement activities are conducted under the supervision of Washington State-recognized "competent person."

5. Employees do not exceed the permissible exposure limit for asbestos (1.0 fiber/cm^3 of air during any 15-minute period or 0.2 fiber/cm^3 of air for an 8-hour time-weighted average).

6. If it is suspected that a material contains asbestos, a determination for asbestos shall be made by laboratory analysis prior to commencing work activities, unless the material is assumed to contain asbestos and all requirements of this standard are followed.

7. A regulated area is established around a work area where airborne concentrations of asbestos exceeds or can reasonable be expected to exceed 0.1 fiber/cm^3 of air.

   a. The regulated area is marked with warning signs in such a way as to limit the number of employees within the area and protect persons outside the area from exposure.

   b. Employees entering a regulated area are supplied with and required to wear protective clothing and appropriate respirators.

   c. Employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in a regulated area.

8. Before removal, demolition, or renovation activities begin, a negative pressure enclosure having a minimum of four air changes per hour is established, except where proper glovebag or mini-enclosure techniques are utilized.

9. Monitoring is performed, to accurately determine the airborne concentration of asbestos to which employees may be exposed.

   a. Pre-abatement monitoring is performed prior to the start of any asbestos removal activity.

   b. Initial monitoring is performed at the beginning of each job unless historical data is available to determine the airborne concentration of asbestos to which employees may be exposed.

   c. Daily monitoring is performed within regulated areas, unless full-facepiece supplied-air respirators which are operated in the pressure-demand mode and equipped with backup are used.

   d. Periodic monitoring is conducted in areas adjacent to negative pressure enclosures.

   e. Post-removal monitoring is conducted in enclosures to demonstrate that airborne fiber concentrations are below 0.1 fiber/cm^3 or, at or below the level existing prior to start of the project; whichever is lower.

   f. Hanford Environmental Health Foundation or a "competent person" conducts all monitoring activities.

   g. Employees are notified in writing or by posting of monitoring results, as soon as possible, following receipt of monitoring results.

10. Engineering controls and work practices are used to the extent feasible to control development and spread of airborne asbestos fibers.

    a. Local ventilation exhaust systems are equipped with approved high efficiency particulate air (HEPA) filters.

    b. Vacuum cleaners are equipped with HEPA filters (see No. 21).

    c. Potential fiber-producing activities are enclosed or isolated from the rest of the facility.

    d. Wet methods, wetting agents, or removal encapsulants are used.

    e. Asbestos-contaminated wastes are promptly disposed of.

    f. Encapsulants are applied where asbestos has been removed, to lock down fibers which may remain.

11. Respiratory protection is provided.

    a. Powered air-purifying respirators (PAPRs) are supplied as minimum protection for any asbestos removal project, providing they furnish a sufficient degree of protection.

    b. Employees in negative pressure enclosures or engaged in dry removal of asbestos wear full-facepiece supplied-air respirators which are operated in the pressure-demand mode and equipped with an auxiliary positive-pressure self-contained breathing apparatus (SCBA) (5-minute escape bottle) or a HEPA filter unless historical air monitoring data is available to be used predictively for selecting respiratory equipment from table 1.

    c. Respirators are fit-tested,in accordance with Standard PP-3, "Respiratory Protection," WHC-CM-4-3, Volume 3, "Respiratory Protection Manual."

Table 1. Respiratory Protection Requirements

Concentration of asbestos	Required Respirator
Not in excess of 20 f/cc	a. Powered air-purifying respirator (PAPR) which is equipped with a HEPA Filter b. Full-facepiece supplied-air respirator which is operated in a continuous flow mode.
Not in excess of 200 f/cc	Full-facepiece air-line respirator which is operated in the pressure-demand mode.
Greater than 200 f/cc	a. Full-facepiece supplied-air respirator which is operated in a pressure-demand mode with either an auxiliary positive-pressure SCBA or a HEPA filter. b. Full-facepiece positive-pressure SCBA.

12. Employees working with asbestos wear protective clothing, including coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings.

    Where disposable clothing is not utilized, contaminated clothing is double bagged in polyvinyl acetate (PVA) bags, labeled, and sent to the Westinghouse Hanford Company laundry.

13. Decontamination areas, which consists of a clean room, shower area, and an equipment room, are provided adjacent and connected to the regulated area.

   a. The clean rooms are provided with spare protective equipment, i.e., coveralls.

   b. The shower room is located between the clean room and equipment room, unless it can be demonstrated that this location is not feasible. Where employees must go to a remotely located shower, they shall remove asbestos contamination from their worksuits using a HEPA filtered vacuum, remove their worksuits, don clean worksuits and then proceed to shower.

14. Waste debris is not transported through the decontamination area.

15. Wherever feasible, a waste load-out area (constructed as a two-chamber airlock) is constructed adjacent and connected to the negative pressure enclosure.

16. Asbestos debris and contaminated wastes are disposed of in a sealed, labeled, impermeable bag or other closed, labeled, impenetrable container. Bags are a minimum of 6 mils thick, to avoid breakage. Waste is placed in a second bag/container prior to final disposal.

17. Labels are placed on all asbestos-containing products, including waste containers. Visible labels are placed on installed asbestos-containing products, when possible. Where non-asbestos insulation is identified, the identification is consistant site wide.

18. Training is provided for all employees who may be exposed to asbestos fibers.

   a. Asbestos orientation or equivalent.

   b. Asbestos-removal workers have completed (1) 30-hour asbestos worker certification training class, Class 006D, approved by the State of Washington, (2) a 7-hour requalification class, Class 006E, completed every two years, and (3) on alternate years, training Class 006L.

   c. Supervisors of asbestos workers are trained as asbestos workers and as "competent persons" by taking a Washington State-approved training course.

19. Asbestos workers undergo an annual medical examination by a physician. Prior to each exam, an Asbestos Exposure Profile is completed and forwarded to the medical scheduling clerk.

20. Complete documentation is maintained for each asbestos removal job, including job description, hazardous work permit, personal and work place monitoring, regulated area entry and exit log, and waste disposal volumes. Training records are kept by Computer Based Training.

21. Vacuums used for asbestos are equipped with HEPA filters. Vacuums equipped with HEPA filters are efficiency tested annually, as a minimum, or whenever the filter is changed.

22. An enclosed cylinder/HEPA vacuum system is used for repair/ replacement of asbestos-containing clutch plates and brake pads, shoes, and lining.

    NOTE: Use of this system will keep airborne fibers below the action level. Therefore, exempting these operations from any other requirement of this standard.

ASBESTOS CONTROL
GUIDE C-03

1.0 SCOPE

This guide will provide management with information and ideas for use in implementing the standard requirements. It will also attempt to answer the most frequently asked questions about the standard requirements.

2.0 GUIDANCE

The following guidance correlates to the requirements from the standard of the same number.

1. Asbestos-containing material which is in a condition that does not allow fibers to become airborne does not represent a health hazard. This is the goal of all the regulations which have been promulgated. Any asbestos-containing material which is identified as being able to release fibers when blown on, rubbed against, stepped on or touched must be abated as soon as possible. Identification of this type of asbestos (called "friable") is the first step in asbestos control.

   If friable asbestos is identified, management must determine which abatement method (removal, encapsulation, enclosure, repair) will be used. This determination and justification for choosing one method over another should be documented.

2. Pre-job safety planning is essential to assuring a smooth asbestos abatement job. Planning should include a visit to the job site, identifying the method of abatement and associated equipment needs, determination impact of abatement on facility activities, making arrangements for required respiratory protective equipment and monitoring, and documenting conditions prior to start of the job (photographs work well). Of particular importance is making arrangements for monitoring prior to commencement of the work activity. A minimum of 24 hours notification is needed; however, 48 hours notification is preferred. All arrangements for monitoring should be initiated through IS&FP as the central point of contact with HEHF. To assist management, a job planning checklist and a tool and equipment check list are included as part of this Guide. Not the Hazardous Work Permits for asbestos abatement activities require IS&FP signature approval.

3. If asbestos-containing products are required by an engineering document (drawing, engineering order, etc.), Engineering should provide justification for its use. If a justification cannot be provided, a Material/Parts Substitution Request (Form #BD-6400-099) should be completed identifying a non-asbestos material. Any new application of asbestos-containing material shall have a written justification with signature approval obtained from IS&FP.

4. A "competent person" is a certified asbestos worker who has successfully completed an approved Washington State recognized asbestos abatement "competent person" training course. The duties of a "competent person" include:

   - supervising or setting up the negative pressure enclosure
   - ensuring the integrity of the enclosure
   - supervising all employees exposure monitoring
   - ensuring that all employees within the regulated area wear the required personal protective equipment
   - confirming that all personnel involved in the abatement activity are trained appropriately
   - ensuring that the hygiene facilities are used and that proper decontamination procedures are observed
   - confirming that all engineering controls including HEPA filters are functioning properly

   Glovebag jobs which are used to remove more than 10 linear feet or 11 square feet of asbestos material are considered large scale jobs requiring a "competent person." Competent persons should be at the job site.

5. Permissible exposure limits are set for no respiratory protection conditions. Where there is any possibility that the PEL may be exceeded, respiratory protection is required by the Standard.

6. Bulk samples should be collected in 1 oz. poly bottles, labeled as asbestos, and sent to HEHF Analytical Laboratory, B1-61 for analysis.

7. The greenhouse or glovebag will serve as the "regulated" area boundary. It is permissible to set up a control zone around the regulated area to keep other personnel out of the area.

8. Documentation for an asbestos job should include the calculations showing the size of the negative pressure enclosure and the number of air changes based on the flow rate of the exhauster.

   Monitoring has shown that transite and asbestos cement shingles can be removed from the outside of facilities without using enclosures and maintained acceptable fiber levels. Use of the encapsulants and methodical work practices are required to perform this type of work without an enclosure.

9. All monitoring should be coordinated through IS&FP. This will assure a single point-of-contact with HEHF and allow IS&FP to keep an accurate record of asbestos monitoring results.

11. b. Historical monitoring results may be used predictively for reduction of respiratory equipment if the asbestos is on pipes or piping systems. In all other situations, negative pressure enclosure work requires maximum respiratory protection.

12. Gore-Tex used in conjunction with polypropylene underwear is acceptable for asbestos removal work. It is encouraged in areas where high heat stress is a problem.

13. b. It is considered not feasible to place a shower between the clean room and the equipment room when there is not enough room in the facility or there is no water available.

14. If it has been determined that it is not feasible to construct a separate waste load-out area, it is acceptable to transport the waste debris through the personnel decontamination area.

15. A waste load-out area is to be used for preparation of waste and as a temporary storage area. In the first chamber, the waste should be placed in a second container. Then the waste may be moved to the second chamber for temporary storage or removal from the regulated area.

17. Each facility should develop a standard method for identifying installed asbestos containing products. Any labels installed must meet the OSHA specification with respect to wording. Stores carries 3" x 5" labels in quantities of 500 per roll (Stock #37-430-200). Color coding may be used to identify non-asbestos material if it is assumed that all non-labeled/color coded areas are asbestos containing materials. All color coding or labelling should be consistant throughout the Hanford Project.

18. Management is responsible for determining which personnel require training. It is IS&FP's opinion that to meet the intent and requirement of the law, only those persons actually involved in hands-on removal of asbestos-containing materials are required to be certified workers. Specific cases where a judgement has been made include: Removal of asbestos gasket material from flanges, etc., does not require employee certification, but does require employees to have attended an asbestos orientation or equivalent.

19. Persons who routinely work with asbestos (defined as over 30 days per year) are considered to be asbestos workers and require an annual medical examination.

20. The records kept should allow the job to be reconstructed at any time in the future. If this cannot be done then the records are inadequate. The use of an instant photograph camera often makes it much easier to reconstruct the actual situation and respond to auditor's questions. Checklists and a sample log are included as part of this guide.

21. The use of wet/dry vacuums is recommended. This allows for easy clean-out. All purchase requisitions for HEPA filter equipped vacuums require IS&FP approval.

22. Personnel using these systems should be made aware of the hazards associated with asbestos.

JOB PLANNING CHECKLIST

____ Extent of asbestos-containing material defined.

____ Restriction of occupancy of adjacent areas determined.

____ Warning signs and barriers around work areas.

____ Competent person identified for large job.

____ Abatement plan:

* Location of work area in facility
* Drawings of work
* Work area isolation plan
* Description and location of decontamination facilities
* Layout of engineering controls
* Description of stripping, removal, encapsulation and disposal methods to be used.
* Description of final cleanup procedure

____ Air monitoring scheduled through IS&FP.

____ Respiratory protection equipment identified and available.

____ Tools and equipment identified (see Checklist No. 2)

TOOLS AND EQUIPMENT CHECKLIST

___ Saws
___ Blades
___ Back Pack Vac
___ Dry Vacuum
___ Wet Vacuum
___ Vacuum Bags
___ Vac Hose & Acc.
___ Shower
___ Water Hose
___ Water Filter
___ Negative Air Machine
___ Pre-Filters
___ Secondary filters
___ Ductwork
___ Intake Adapters
___ Extention Cords
___ GFCI Boxes
___ Step Ladder 6', 8', 10', 12'
___ Power Hoist

___ Surfactant Type:_____
___ Encapsulant,
___ Bridging
___ Penetrating
___ Lockdown Agent Type:_____
___ Mastic
___ Scaffolding
___ Duct Tape
___ Spray Glue
___ Plastic Sheeting Flame Retardant
___ Waste Bags
___ Cardboard Boxes
___ Warning Signs
___ Barrier Tape
___ Labels
___ Fire Extinguisher
___ PAPR's
___ Airline Respirator

___ Drinking Water
___ Cups
___ Disposal Coveralls
___ Gor-Tex
___ Poly Underwear
___ Rubber Gloves
___ Canvas Gloves
___ Booties
___ Knee Pads
___ Knives
___ Brushes
___ Pliers
___ Scrapers
___ Hand Sprayers
___ Wire Cutters
___ Mops
___ Rags
___ Squeegies
___ Shovels
___ Airless Sprayer
___ Glovebags