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PREPARED BY/DATE

A. W. Graves

MASTER
DEPT MAIL ADDR

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APPROVALS

DATE

W. F. Heine *W. F. Heine* D. F. Higgins *D. F. Higgins*

A. W. Graves *A. W. Graves* M. E. Remley *M. E. Remley*

B. F. Ureda *B. F. Ureda* C. R. Johler *C. R. Johler*

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DISTRIBUTION

* NAME	MAIL ADDR
R. W. Buckles	T030
A. W. Graves	LA16
W. F. Heine (10)	LA16
W. R. McCurnin	T020
C. R. Johler	LA38
G. W. Meyers	LA10
M. E. Remley	NB08
W. J. Roberts	LB14
A. A. Wilson	LA20
G. P. Streechon	LA16
R. J. Tuttle	NB13
B. F. Ureda	LA16
J. H. Walter	T009
H. C. Wieseneck	LB13
E. G. Andrews	KB45

ABSTRACT

The Program Plan represents the top level guidance document for stating and performing the objectives of the D&D Program. The program objectives, historical data, and program description are presented, along with the top level planning. The planning includes a statement of the funding basis and the corresponding first and second level activity network schedules. The management plan is included which describes the procedures to be used for cost and schedule control and reporting, purchasing and subcontract control, and program and engineering data control. The requirements for the quality assurance plan, operational safety plan, and training plan are presented.

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REV	SUMMARY OF CHANGE	APPROVALS AND DATE
A	<p>Added Appendix as Section IX, includes current schedules, organization charts, and Work Breakdown Structure. Added references to Appendix in text. Changed procurement computer program (PARTS) to an option instead of a requirement. Changed the Program Data Management status report from three parts to two parts. Added a quarterly update requirement for the configuration summary.</p> <p>Added Test Plans to the Engineering Data Control requirements. Updated the External Program Correspondence List. Reduced the Training Plan content to an abstract of scope and a reference to the Training Plan Document.</p>	<p>8-14-75 A.W. Grove W. Leind (9/14/75) M. E. Remley 20 Aug 75 M. E. Remley E. G. Andrews C. E. Johler B. F. Ureda 8-16-75 REL DATE: 8/21/75 L.S.</p>

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DECONTAMINATION AND DISPOSITION OF FACILITIES PROGRAM PLAN

SECTION I PROGRAM CURRENT OBJECTIVES

There are eight inactive, ERDA-owned nuclear facilities at the Atomics International Santa Susana Nuclear Development Laboratory. These facilities include completed reactor experiments, hot cave facilities, and waste disposal facilities which contain extensive amounts of radioactive materials in the form of activated or contaminated structures and components. The facilities presently pose potential hazards associated with the release of radioactive materials and require continuing surveillance, including the operation of protective systems. The facilities included in the Decontamination and Disposition of Facilities (D&D) Program are: Sodium Reactor Experiment (SRE), Bldg. 143; the Hot Cave in Bldg. 003; Kinetic Energy Water Boiler (KEWB), Bldg. 073; Shield Test Irradiation Reactor (STIR), Bldg. 028; SNAP 8 Experimental Reactor (SER) Facility, Bldg. 010; SNAP Experimental Test Facility (SETF), Bldg. 024; SNAP 8 Development Reactor (S8DR) Facility, Bldg. 059; and the Radioactive Materials Disposal Facility (RMDF). The SRE, and Buildings 028, 010, 024, and 059 were partially dismantled during the SRE Deactivation and SNAP Close-out programs. The inactive Hot Cave has been left intact. The KEWB has been left intact except for removal of the fuel and control room. The RMDF continues to be used to support the surveillance of the above inactive facilities.

The program objectives will now extend beyond surveillance or activities to upgrade surveillance, and expand into activities associated with the dismantling of each of the facilities, with funding from the ERDA Division of Waste Management and Transportation. The proposed dismantling will culminate in the release of the facilities from all requirements for

radiological control, licensing, or monitoring. All radioactive waste generated during the program will be packaged and transported to a licensed ERDA burial site for disposal by land burial.

An additional objective requires that the SRE Core I and Core II fuel, presently stored in the RMDF, be declad in the AI Hot Laboratory and the fuel be shipped to Savannah River for reprocessing.

SECTION II
PROGRAM HISTORICAL DATA

Radiological Surveillance and Industrial Safety Requirements

The use of radioactive materials in California is licensed and regulated by the U.S. Energy Research and Development Administration (ERDA) in the case of source and special nuclear materials or by the State of California, Bureau of Radiological Health (BRH) in the case of byproduct materials. The SRE, Building 003 Hot Cave, KEWB, Building 028, Building 010, Building 024, Building 059, and the RMDF, as ERDA-owned facilities, have all been exempt from such licensing requirements. This status will extend as long as these facilities are ERDA-owned; however, in the event the facilities and the associated ERDA-optioned land were to revert to AI, the BRH regulations would apply. For this reason, the facilities must be decontaminated to a level which is acceptable to the State of California.

Industrial safety requirements at AI-owned facilities are defined by the California OSHA regulations, as administered by the California Division of Industrial Safety. Industrial Safety requirements at ERDA-owned facilities are defined by ERDA Immediate Action Directive No. 0504-33, as administered by ERDA-OSHA.

Facility Background Data

SRE The facility containing the Sodium Reactor Experiment has been "stored in place" since the experiment was retired in GFY 1968. The facility has been maintained in this stored condition pending approval of funding and plans for complete dismantling. The safety of the facility during this period has been assured by means of a surveillance and maintenance program directed at evaluating the condition of contaminated components, maintaining the required cover gas, and monitoring the environment surrounding the facility.

SRE FUEL DECLADDING The irradiated fuel from SRE Cores I and II has been stored in the irradiated fuel storage vault at the RMDF since its removal from the SRE reactor (1959 for Core I and 1964 for Core II). The fuel is contained in stainless steel and carbon steel canisters with threaded end caps. The fuel is bonded to the cladding with a liquid metal (NaK) bond, a fact which, when combined with ruptured cladding and the absence of welded closures on the canisters, poses a potential for a NaK or uranium fire and associated release of uranium and contained fission products. Because of the NaK bonding, the reprocessing of this fuel will require special head-end pre-reprocessing treatment. Since the Division of Production does not currently have this capability, the fuel cannot be returned for reprocessing in its present condition. The decladding of the fuel and the removal of the NaK, which will be performed at the Atomics International Hot Laboratory, will place the fuel in an acceptable condition for reprocessing at the Savannah River Reprocessing Plant.

A description of the SRE fuel follows:

- 1) Core I fuel is unalloyed uranium metal, 2.8% ^{235}U , clad with Type 304 stainless steel and NaK bonded.

The fuel assemblies consist of seven stainless steel clad fuel rods, about 8 ft long, containing slugs of uranium metal, each 0.75 in. in diameter. The fuel rods contain 12 slugs, each 6 in. long, which make up an active fuel column length of 6 ft. The fuel rods are attached at each end to form the fuel assembly and wire wraps are used to space the rods.

The Core I fuel was removed from the reactor in 1959 after an incident which resulted in the overheating and failure of one or

more fuel rods in a number of fuel assemblies. The undamaged fuel assemblies were shipped to Oak Ridge National Laboratory and were reprocessed. The assemblies having damaged rods, and miscellaneous fuel pieces which were retrieved from the reactor, were placed in 34 stainless steel canisters $3\frac{1}{2}$ inches in diameter by 120 inches long. During GFY 1972, the fuel canisters were examined and limited repackaging was performed which reduced the number of canisters to 26. The Core I fuel remaining in the RMDF at AI is estimated to comprise about 1300 kg of uranium, including 35 kg of ^{235}U .

- 2) The SRE Core II fuel is NaK bonded, Type 304 stainless steel cladding, U-Th alloy and experimental fuel consisting of the following assemblies:
 - a) Sixty 5-rod assemblies of Th - 7.6% U; containing approximately 138 kg of uranium of 92.5% ^{235}U , 1016 gm of ^{233}U , and 1717 kg of thorium.
 - b) Three 7-rod assemblies of Th - 7.6% U; containing approximately 9.9 kg of uranium of 93.1% ^{235}U , 4 gm of ^{233}U and 123 kg of thorium.
 - c) Two 6-rod assemblies of Th - 5.4% U; containing approximately 4 kg of uranium of 93.1% ^{235}U , 19 gm of ^{233}U , and 70 kg of thorium.
 - d) One 7-rod assembly of Th - 5.4% U; containing approximately 2.3 kg of uranium of 93.1% ^{235}U and 41 kg of thorium.
 - e) One 6-rod assembly of U - 10% Mo alloy; containing approximately 28 kg of uranium 6% ^{235}U and 22 gm of plutonium.

- f) Two assemblies of uranium carbide; containing approximately 44.3 kg of uranium of 9.8% ²³⁵U and 15.3 gm of plutonium.

SRE Core II and experimental fuel elements are presently stored in sixty-eight 3½-in. diameter, 120-in. long carbon steel canisters.

HOT CAVE The Hot Cave in Building 003 has been inactive since the close out of the SNAP program in GFY 1973. Prior to that time it had been used for the analysis of SNAP fuel burnup samples. The inner surfaces of the cave are grossly contaminated with mixed fission products. Containment of this high level contamination requires the continued operation of the radioactive exhaust system and associated filters and sampling systems. Removal of the Hot Cave will permit consideration of alternate uses or removal of Building 003, as well as eliminate the potential for release of the fission product contamination contained in the cave. Current D&D Program plans place the SRE vessel mockup for the cut-up manipulator in the excavated site of the removed Hot Cave.

KEWB The KEWB reactor facility has been stored in place since the KEWB program was terminated in GFY 1967. All control consoles and reactor instrumentation were removed from the facility at that time. The fuel was removed from the fuel storage tank and shipped to a recovery plant during GFY 1969. There remains at the facility a number of moderately contaminated or activated structures which include: (1) the reactor core vessel, (2) the graphite reflector, (3) the recombiner and gas handling system, (4) the fuel storage tank, and (5) contaminated underground lines and tanks including the exhaust and liquid waste systems. The excavation of the underground lines and tanks will eliminate the potential for soil contamination. Removal of the balance of the contaminated system will eliminate the need for a difficult surveillance program in relatively inaccessible areas.

STIR Building 028 has been inactive since the Shield Test Irradiation Reactor was partially dismantled in June, 1973. At that time, the reactor was defueled and the fuel, including that which was removed from the fission plate, was shipped to a reprocessing plant. Also, at that time, the control consoles and reactor instrumentation were removed and the pool water was drained. There remains at the facility a number of activated and contaminated structures including: (1) the core structure, (2) portions of the reactor pool tank, (3) portions of the concrete biological shield, (4) the thermal column, and (5) the fuel storage cells. Other reactor related systems which are not activated or contaminated, such as the heat exchangers, the cooling water systems, and the shield test carriage must also be dismantled.

BUILDING 010 The nuclear portion of Building 010 has been inactive since the removal from the facility of the SNAP 8 Experimental Reactor in GFY 1966. At that time, all control consoles and reactor instrumentation were removed. During the SNAP close-out period in GFY 1973, additional contaminated support systems, such as cooling water systems, were dismantled and removed from the facility. There remains at the facility extensive activated and contaminated materials including steel containment vessels and concrete biological shielding, most of which is located below grade.

BUILDING 024 The nuclear portion of Building 024 has been inactive since the removal of the SNAP 10FS3 reactor in 1965, except for intermittent periods during which SNAPTRAN experiments were performed in one of the test vaults. During the SNAP close-out period in GFY 1973, all control consoles and reactor instrumentation were removed from the facility. Also, at that time, the SNAPTRAN machine and other contaminated items were removed from the test vaults, and the vaults were decontaminated. There remain in the facility activated components and structures, including the SNAP 10FS3 vacuum vessel, the test vault liners, and portions of the concrete biological shielding.

BUILDING 059 Building 059 was inactive from the time of the removal from the facility of the SNAP 8 Development Reactor in GFY 1970 until the SNAP close-out period in GFY 1973. During the SNAP close-out period, all control consoles and reactor instrumentation were dismantled and removed. Also, at that time all contaminated items were removed from the test vault. There remain at the facility, extensive below-grade activated structures, including steel containment vessels and vacuum lines, concrete biological shielding, and sand fill. The facility, including the test vault, is now being used for the Large Leak Test Rig, a program in which the effects of leaks in sodium-water steam generators are being evaluated. The Large Leak Test Rig (LLTR) program is scheduled for completion in GFY 1977, and actual dismantling of the facility will be delayed until the program is completed or integrated with non-testing periods of the LLTR program.

RMDF The RMDF is an active facility principally devoted to the support of the SNAP and SRE surveillance program. The SRE Cores I and II are stored in the RMDF fuel storage vault. There also remain at the facility contaminated waste processing facilities including equipment, storage tanks, exhaust filter systems, and below-grade piping. This facility will not be dismantled until dismantling of the other facilities is complete.

Criteria for Decontamination and Disposition of Facilities

The overall requirements for the Decontamination & Disposition (D&D) Program provide for the removal of all hazardous or dangerous materials or equipment from each of the above facilities and to place the facilities in a condition acceptable for unrestricted use.

These requirements have resulted in establishing criteria for removing the dangerous and hazardous material as follows:

- 1) All surfaces which remain following completion of the dismantling and all material released for unrestricted use will be decontaminated to levels which are as low as practical. Allowable residual levels will be established for each facility considering the specific hazards and materials present. These levels will be stated in the respective approved Dismantling Plans.
- 2) Radioactive solid waste will be prepared for commercial transport to the Nevada Burial Grounds at Beatty, Nevada.
- 3) The facilities will be made usable by repairing or replacing in kind any structure or flooring removed or destroyed in the decontamination process. Existing vaults or cavities that can be economically decontaminated will not be altered except to make them safe. Buildings that have no further useful function will be completely dismantled and the site returned to the condition of the natural surroundings.
- 4) Liquid radioactive waste will be processed in the Radioactive Material Disposal Facility (RMDF), at the Santa Susana Site. The liquids will be concentrated by evaporation, solidified, and packaged for shipment to the burial site.

- 5) Idle non-contaminated equipment in working order will be cycled into the equipment utilization system. Unusable, contaminated, hazardous, or dangerous materials or equipment will be scrapped or disposed of as required.

Major Changes to the D&D Program Plan

Future modifications, if any, will be reported in this section of the Program Plan for documentation purposes. The most recent Activity Network Schedules and any charges to the AI management organizations affecting the D&D Program will be included in the appendix to this Program Plan (Section IX). The Appendix will be updated at least annually. ✓

SECTION III

PROGRAM DESCRIPTION

SCOPE

The partially dismantled reactor facilities (Sodium Reactor Experiment, KEWB, and Buildings 010, 024, 028, and 059), the inactive Hot Cave in Building 003, and the Radioactive Materials Disposal Facility (RMDF), all of which are located at the Santa Susana Nuclear Development Laboratory, contain extensive radioactive materials in the form of activated or contaminated structures and components. All of these facilities, with the exception of portions of the RMDF, are inactive and "stored in place." The RMDF is used in support of the surveillance of the inactive facilities. The irradiated fuel from SRE Cores I and II is stored in a below-grade storage vault at the RMDF. The facilities have been inactive and stored in place for varying periods of time ranging up to almost ten years.

The facilities pose potential hazards associated with the release of radioactive materials, and require continuing surveillance and operation of protective systems.

Priorities for the sequence of the dismantling of these facilities have been established on the basis of (1) degree of hazard potential, (2) program utilization of existing facilities, (3) cost effectiveness, (4) funding limitations, and (5) special planning and tooling development requirements. The planning in all cases assumes the complete dismantling and disposal by land burial of all activated structures or components, and the dismantling or decontamination of all contaminated structures or components.

OVERALL D&D SCHEDULE

The overall schedule for the D&D Program is shown in Figure 4.1 in Section IV. The schedule depicts the sequence of dismantling the various facilities. The entire D&D Program will be accomplished over a five-year period. The SRE activities will occur during the first four years. The Hot Cave and KEWB will be dismantled during the first year, while Building 028 effort will occur in the second year. Planning for Building 010 will be accomplished in the third year, while the dismantling of Buildings 010 and 024 will occur in the fourth year. The planning for Building 059 and the RMDF will also occur in the fourth year, and the dismantling of Buildings 010, 059, and the RMDF will be completed in the fifth year. A brief chronological description of the major activities for each facility is provided below.

Schedule of Major Tasks

SRE - The SRE Dismantling Plan will be completed in the third quarter of GFY 1975, Activity Requirements will be prepared as required through GFY 1976, and Detailed Working Procedures for dismantling operations will be prepared as required through GFY 1977. The dismantling operations will be continued through GFY 1978. Design, acquisition, fabrication, and checkout of special tooling for remote disassembly of the reactor vessels will be performed during GFY 1975. Actual dismantling during the balance of GFY 1975 will be limited to the removal and disposal of the primary sodium; removal of the secondary sodium systems external to the SRE building; removal of the airblast heat exchangers; removal of the kerosene cooling systems; and removal of the gallery cooling system.

During GFY 1976, the mockup operations for the vessel cut-up remote tooling will be accomplished, starting with the checkout of the manipulator/plasma torch/control console systems. The operating parameters

for the cut-up and removal of the vessel internals, core tank liner, core tank, thermal rings, outer tank, insulation, and cavity liner will be developed. Also during GFY 1976, the residual sodium in the reactor and primary piping will be reacted; the primary system piping will be dismantled; the portable hot cell will be disposed; work will begin on removing the storage and wash cells; and special one-way shipping and burial containers will be designed and partially acquired.

The first half of GFY 1977 will be used to remove the secondary system sodium piping inside the building; complete the removal of the storage and wash cells; and remotely remove the internals from the reactor vessel. The second half of GFY 1977 will see the removal of the waste tanks and lines; the completion of acquisition of shipping containers; the initiation of some site backfill and repair; the dismantling of the fuel-handling machine; and the initiation of the remote reactor vessel underwater vessel cut-up and removal.

The remote removal of the reactor vessels will be completed during the third quarter of GFY 1978, and the cavity liner and biological concrete shielding will be removed during the balance of GFY 1978. The moderator handling machine will be dismantled in the first half of the year; the retention pond will be removed and the structures will be razed or repaired the second half of the GFY; and the site will be backfilled as required during the entire year. The final radiation survey and final dismantling report will be performed during the last two quarters of GFY 1978. The radioactive waste disposal and health physics monitoring will be performed throughout the entire four-year program as required.

SRE Fuel Declad - Preparations for decladding and cleaning the NaK from SRE Cores I and II fuel will be initiated during the first half of GFY 1975. The preparations will include safety studies; planning; tooling design, fabrication and testing; intrasite transfer cask design

and fabrication; set up of hot cell operations, tooling, and processing arrangements in the AI Hot Laboratory; design of shipping canisters for fuel slugs; design of waste containers; and arrangements for shipping casks.

Following completion of the preparations, planning, and approvals, the fuel will be transferred from the RMDF to the AI Hot Laboratory and the actual decladding, cleaning, and repackaging will be initiated in the third quarter of GFY 1975. The cleaned and repackaged Core I fuel will be returned to the RMDF, where it will be shipped to the Savannah River Reprocessing Plant. The first shipment will occur in the second quarter of GFY 1976. The Core II fuel will be declad and shipped the last half of GFY 1976.

Some schedule and funding uncertainty exists regarding the impact of the physical protection requirements for the SRE Core II fuel for compliance with 10CFR73. Core I is exempt from these requirements due to its low U-235 enrichment. Initially, the Core II fuel would have been declad first, since that fuel is intact while the Core I fuel is fragmented. This sequence would have allowed for the development of the operational processes on the easier fuel to handle. The security requirements for Core II will force the declad of Core I first to avoid schedule slips. A schedule slip into GFY 1977 should be considered as a possibility if added operational funding for 1975 is not available.

Building 003 Hot Cave - The Dismantling Plan will be prepared in the first quarter and Detailed Working Procedures will be prepared for the Hot Cave during the second quarter of GFY 1975. Subject to the approval of the Plan, the cave will be decontaminated and dismantled during the second and third quarters of GFY 1975. The Hot Cave and Building 003 exhaust and liquid waste systems will begin dismantling and disposal

during the third quarter and be completed in the last quarter of GFY 1975, along with the required backfilling and facility repair. Packaging and shipping of the radioactive waste for burial will occur as required and will be completed during GFY 1975.

Building 073 KEWB - The Dismantling Plan for the KEWB facility will be prepared the first quarter and Detailed Working Procedures will be prepared during the second quarter of GFY 1975. Subject to approval of this plan, the removal of all contaminated systems will be completed during the second and third quarters of GFY 1975. The removal of the auxiliary systems and buildings will be initiated in the third quarter, and will be completed in the fourth quarter, along with the performance of all required facility backfill and repair. Packaging and shipping of the radioactive waste for land burial will occur as required, and will be completed during GFY 1975.

Building 028 STIR - The Dismantling Plan for the STIR will be prepared during the second half of GFY 1975. Effort on the Activity Requirements and Detailed Working Procedures will be initiated during the fourth quarter of GFY 1975 and continue as required through the first half of GFY 1976. Subject to the approval of the Plan, the auxiliary system dismantling will be performed during the first quarter of GFY 1976 on the fuel storage wells, the heat exchanger, and the cooling system. Removal of the shield carriage system, core structure, thermal column, and activated vessel will begin in the second quarter and be completed in the third quarter of GFY 1976. Removal of the activated concrete will begin in the third quarter and be completed in the fourth quarter; along with the dismantling of the exhaust and liquid waste systems, the remaining non-radioactive portions of the facility, and the required backfilling and facility repair. The radioactive waste will be packaged and shipped for land burial as required during GFY 1975 and 1976.

Building 010 (S8ER) - During GFY 1977, the Dismantling Plan, Activity Requirements, and Detailed Working Procedures will be written and approved. The tooling design, fabrication, development, and checkout for Building 010 will occur during the first half of GFY 1978. The dismantling operations will begin the second quarter of GFY 1978 and continue through the fourth quarter. The building will be demolished and the site backfilled and regraded in the last quarter of GFY 1978. The final radiation survey will be performed and the final report written during the first quarter of GFY 1979.

The major effort in the dismantling activity will be the removal of the activated steel reactor containment vessel and the biological shielding, all located below grade. The concrete was poured around the vessel and attached cooling coils, leaving a steel lined, activated, concrete monolith below grade. Tooling will be required to excavate the structure with some shielding required. The choice of entry from the inside or outside of the structure remains to be determined. The sheet metal building enclosing the facility will be demolished.

Building 024 (SETF) - During the first half of GFY 1978, the Dismantling Plans, Activity Requirements, and Detailed Working Procedures will be written for Building 024. A minimal tooling effort will be required, and the tooling and dismantling operations will be accomplished during the second half of the GFY. The final radiological survey and final report will be completed in the last quarter of GFY 1978.

The effort in Building 024 will consist mainly of removing and disposing of the activated SNAP 10FS3 vacuum vessel located in one of the vaults, removing the test vault aluminum liners, excavating some of the adjacent concrete biological shielding, and possibly removing portions of the exhaust and liquid waste holdup systems.

Building 059 (S8DR) - The Dismantling Plan will be prepared during the third quarter of GFY 1978 for Building 059, and the Activity Requirements and Detailed Working Procedures during the last half of GFY 1978 and the first half of GFY 1979. The tooling effort will be accomplished during the last half of GFY 1978 and first quarter of GFY 1979, while the dismantling operations will occur during the last quarter of GFY 1978 through GFY 1979. The final radiation survey and final report will be completed during the last quarter of GFY 1979.

Extensive below-grade activated structures remain in Building 059, including steel containment vessels and vacuum lines, concrete biological shielding, and sand fill. Some schedule flexibility must be maintained to integrate the D&D task with the operation of the Large Leak Test Rig Program in the same building.

RMDF - The Dismantling Plan, Activity Requirements, and Detailed Working Procedures will be written during the last half of GFY 1978 and the first quarter of GFY 1979. The tooling effort will occur in the first quarter of GFY 1979, while the dismantling operations will be accomplished during the last three quarters of the GFY. The final radiological survey and final report will be completed the last quarter of GFY 1979.

The SRE Core I and II fuel will have been declad and shipped to Savannah River in GFY 1976. The major effort will involve the decontamination and disposal of the waste processing facilities, including equipment, storage tanks, exhaust filter systems, and below-grade piping. This facility will not be dismantled until all the other facilities in the D&D Program have been dismantled.

AVAILABLE TECHNOLOGY

The remote plasma-arc reactor vessel cutting manipulator design, developed by Oak Ridge National Laboratory (ORNL) for the Elk River Reactor dismantling, will be used by AI for the SRE vessel cut-up. The design drawings will be obtained from ORNL and modified as required to fit the SRE requirements. The actual manipulator and cutting apparatus was too contaminated to clean, and was subsequently buried. The control console is still available and is being obtained from ORNL for the SRE task. A skip loader and concrete drill have also been obtained for use on the D&D Program from the Elk River job. ORNL personnel involved in the design of the Elk River manipulator remote tooling will be utilized on an as-available consulting basis. Extensive remote tooling expertise also exists at Atomics International from experience gained on the SRE, Hallam, Piqua, and SNAP reactor programs.

Explosive demolition techniques developed and used for the Elk River Reactor dismantling program will also be utilized on this program. Detailed procedures have been obtained from the Elk River staff which document that effort. Additionally, commercial contractors will be employed for the explosive phase of the program.

SECTION IV

PROGRAM ACTIVITY PLANNING

GENERAL APPROACH

The overall schedule for the D&D Program was established by determining the optimum sequence for dismantling the various facilities based upon the degree of hazard potential, program utilization of existing facilities, cost effectiveness, funding limitations, and special planning and tooling development requirements. Several general activity categories were identified to provide sufficient detail for the overall program activity schedule and to establish a common base for developing the more detailed individual facility activity network schedules and dismantling plans. The general categories were identified as: (1) program management, (2) planning, (3) tooling and equipment, (4) decontamination and dismantling, (5) waste disposal, (6) radiological survey, and (7) documentation. All of the efforts involved in the D&D Program will fall into one of these categories. A description of each category will be given in subsequent paragraphs.

A Dismantling Plan will be prepared and approved for each of the facilities prior to commencing the dismantling efforts. The plan will define the scope of the dismantling effort, provide a brief description of the facility and background data, expand upon the specific applications of the general activity categories listed above, and identify the major tasks which will require the preparation of separate Activity Requirements documentation.

Activity Requirements will be written for each of the major tasks involved in each of the facilities, except for the Building 003 Hot Cave

and the Building 073 KEWB. Due to the less complex nature of these two facilities, the Detailed Working Procedures will be prepared directly from the tasks defined in the Dismantling Plans and the intermediate Activity Requirements document will not be utilized. For the remaining facilities, the Activity Requirements will define the scope, proposed methods and sequence for accomplishing the task, tooling requirements, overall health and safety requirements, and technical guidelines for the preparation of the Detailed Working Procedures.

Detailed Working Procedures will be written where required to supplement existing approved in-house working procedures. These procedures will describe the details of the decontamination and dismantling operations, the associated radiation safety and industrial hygiene requirements, the use of special tooling, and any special handling requirements.

The following paragraphs describe the details of the general activity categories used in developing the activity network schedules for the overall D&D Program; for preparing the detailed schedules and manpower estimates for the individual facilities; and for preparing the specific Dismantling Plans.

Program Management The program management activity includes the efforts involved in directing the overall performance of the program objectives; interfacing with the appropriate offices of the ERDA, internal AI management, and outside suppliers and contractors; obtaining the services of the internal functional organizations, and monitoring the subsequent performance; and performing administration support functions such as reproductions, data management, cost and schedule monitoring, and purchasing activities. The Program Office will perform the major portion of the effort identified in the program management activity in the course of accomplishing the D&D Program requirements and meeting the AI responsibility to ERDA-SAN and the ERDA Division of Waste Management and Transportation.

Planning The planning activity includes the efforts involved to establish schedules and projected costs for each facility which will provide a tool for measuring progress and controlling costs; to prepare the Dismantling Plans, Activity Requirements, and Detailed Working Procedures for each facility; to prepare an overall Quality Assurance Plan, an Operational Safety Plan, and a Training Plan for the Program; and to establish and prepare the D&D Program Plan. The general content for the schedules and dismantling plans will be organized according to the general activity categories.

Tooling & Equipment Design & Fabrication The tooling activities involve the establishment of the functional and operational requirements for tooling and equipment to support the decontamination and dismantling operations; the preparation of detailed designs for tooling and equipment not available off-the-shelf; the fabrication and/or procurement of the identified tooling and equipment; the design, fabrication, and operation of a mockup facility where required for remote operational checkout; and checkout operations, and operational parameter development of remote tooling and equipment in the mockup facilities. The SRE will require the greatest amount of tooling effort. A remote manipulator system will be utilized to cut up the reactor vessels while submerged underwater for radiation shielding. A vessel mockup will be used to develop and check out the remote manipulator operating parameters prior to installation in the SRE. An existing ORNL manipulator design used for the Elk River dismantling program will be modified to meet the SRE geometric requirements, and the resulting configuration will be fabricated from stainless steel for ease of decontamination. The vessel mockup facility will be designed and built in an existing building at AI. An existing manipulator control console will be obtained from ORNL and modified for added versatility of operation. The remaining facilities in the D&D Program will require less extensive tooling, consisting

mainly of decontamination grappling devices. The two SNAP 8 test facilities (Buildings 010 and 059) will require some remote tooling for dismantling the vessels, which will be an adaptation of the SRE tooling.

Decontamination and Dismantling This activity involves all the effort associated with the actual decontamination and dismantling of equipment, hardware, systems, and facilities. This activity does not include the processing, packaging, shipping, or burial of the radioactive waste, which is a separate activity category. Each of the facilities will involve substantial decontamination prior to and in conjunction with the dismantling operations. The Detailed Working Procedures for each facility will identify the extent of decontamination operations expected for those activities involving activated or contaminated materials and/or equipment. The decontamination will be performed when required to aid in the dismantling operations, to reduce levels to acceptable values for packing and shipping, or when a piece of equipment has a salvage value commensurate with the cleaning costs. The dismantling operations will be performed in a sequence that reduces the radioactive hazards as quickly as possible. AI personnel trained in radioactive material handling will perform all tasks involving removal of high-level radioactive material. AI personnel or specially qualified contractor personnel supervised by AI personnel will be used to handle low-level radioactive material and other hazardous materials. Contractor personnel will be utilized as much as possible to remove nonradioactive materials, especially where the salvage value of the material will partially defray the removal costs. Excavation techniques developed for the Elk River dismantling and concrete removal will be used wherever practical. Demolition contractors will be used extensively in the concrete removal activities.

Some of the decontamination operations will require the use of secondary enclosures to isolate access control areas utilized to prevent the

spread of contamination products. Other operations will be performed with the use of portable shielding, and in the case of the SRE vessels, the initial cut-up operations will be performed underwater. The radioactive waste will be processed through the AI RMDF operation.

The dismantling activities will include such operations as disconnecting and removing non-radioactive equipment, piping, and facility services; cutting apart piping systems containing hazardous, contaminated, and radioactive materials; removing equipment and structural material that is contaminated or radioactive; dismantling building block structures which form the shielded walls for hot cells; remote torch cutting of the reactor vessels; removal of the concrete biological shielding by mining techniques; and back-filling and repairing the sites as required. The Detailed Working Procedures will identify the specific dismantling tasks required for each facility.

Waste Disposal This activity involves all of the effort associated with the preparing, packaging, and shipping for burial of the radioactive waste generated by the D&D Program. All radioactive, activated, and contaminated materials will be processed through the AI RMDF. Solid waste will be packaged to meet shipping and burial requirements. Liquid waste will be solidified before burial. Special shipping containers meeting ERDA and Department of Transportation (DOT) requirements will be fabricated, obtained on loan, or rented from commercial sources. The overall D&D Program radioactive waste disposal effort will be coordinated by the RMDF to minimize the overall shipping and burial costs. ERDA equipment that is not contaminated or has been decontaminated will be processed through the equipment utilization system. Salvage material will be made available to the outside contractors in fair consideration for operating costs on a bid basis. Clean scrap will be disposed of in land fill sites.

Radiological Survey Initial radiological surveys will be made in each facility to provide input to the planning efforts. Continuous radiological surveillance will be performed at each facility for personnel and

environmental safety; to determine the extent of decontamination required; and to segregate the radioactive waste. A final radiological survey will be made at each facility at the conclusion of the dismantling activity to certify that the site meets the required ERDA and California BRH limits for unrestricted access.

Documentation The documentation effort consists of the recording, traceability, and certification of the performance of certain tasks and events in the D&D Program. All documents generated in support of the planning and engineering activities will have release and revision control. The Quality Assurance, and Health, Safety, and Radiation Services records for the Program duration will be maintained for permanent traceability. Photographic documentation will be used for tracing progress, recording pertinent developments, future informational or training aids, and for historical purposes. A final report will be written for each facility to document the actual effort, schedule, and costs expended compared to the original estimates; any special problems encountered and the methods used for resolution; any tooling or process developments that would be useful to future programs; and the final radiological status of the site. The radiological levels remaining after the D&D process will be certified, and approval for release for unrestricted use will be obtained from the ERDA: while confirmation of acceptance will be obtained from AI and California BRH. These approvals will be included in the final report.

Funding Basis

The funding basis for planning the D&D Program schedule was originally contained in Schedule 189A No. 13492 for the SRE dismantling and SRE fuel decont tasks, and in Schedule 189A No. 13130 for the other facilities in the D&D Program. (Both 189A forms were dated 5-31-74.) The original estimates anticipated a four-year program, and the costs were as shown in Table 4.1, which were based on 1975 dollars with no escalation.

TABLE 4.1
AI Decontamination & Disposition of Facilities Program
Task 8, 701 Contract

	<u>Prior</u>	<u>GFY-75</u>	<u>GFY-76</u>	<u>GFY-77</u>	<u>GFY-78</u>	<u>Total</u>
189A #13130	---	195	200	580	985	1960
189A #13492	<u>785</u>	<u>680</u>	<u>3300</u>	<u>3350</u>	---	<u>8115</u>
Total Task 8	785	875	3500	3930	985	10,075

Subsequent funding guidance for GFY 1976 was received from the ERDA (R. L. Westby, Director, Safety & Nuclear Materials Division, ERDA-SAN to W. F. Heine, Program Manager, D&D Program, AI, "Decontamination and Disposition (D&D) of Facilities, Task 8, Contract AT(04-3)-701," 10-4-74, 7900AT). This guidance reduced the funding level planned for GFY 1976 from \$3,300K to \$2,000K for the total Task 8 effort, and requested revised schedules reflecting the reduction in work scope for that year. The new schedules identified a requirement for some added funding for GFY 1975 over that requested in 189A No. 13492 to allow for tooling costs, and an overall extension of the program to five years.

The resulting funding requirements estimated for the entire D&D Program are shown in Table 4.2 on the following page. The estimates in the table are also based on GFY 1975 dollars, which are not projected to future values; and the cost of added physical protection requirements for the enriched SRE Core II fuel declad operation are not included. The projected costs through GFY 1979 using the current AI Pricing and Estimating Manual for cost escalation were estimated and are shown in Table 4.3.

TABLE 4.2
D&D PROGRAM COST SUMMARY
(GFY 75 DOLLARS)

		\$K					TOTALS
		GFY 75	GFY 76	GFY 77	GFY 78	GFY 79	\$K
SRE	AI LABOR	470	1,220	1,750	1,320	0	4,760
	OUT OF PLANT	205	255	550	1,035	0	2,045
	TOTAL	675	1,475	2,300	2,355	0	6,805
DECLAD*	AI LABOR	210	310	0	0	0	520
	OUT OF PLANT	15	40	0	0	0	55
	TOTAL	225	350	0	0	0	575
HOT CAVE	AI LABOR	80	0	0	0	0	80
	OUT OF PLANT	20	0	0	0	0	20
	TOTAL	100	0	0	0	0	100
KEWB	AI LABOR	40	0	0	0	0	40
	OUT OF PLANT	15	0	0	0	0	15
	TOTAL	55	0	0	0	0	55
STIR	AI LABOR	15	120	0	0	0	135
	OUT OF PLANT	0	40	0	0	0	40
	TOTAL	15	160	0	0	0	175
SER	AI LABOR	0	0	70	365	25	460
	OUT OF PLANT	0	0	0	75	0	75
	TOTAL	0	0	70	440	25	535
SETF	AI LABOR	0	0	0	115	0	115
	OUT OF PLANT	0	0	0	20	0	20
	TOTAL	0	0	0	135	0	135
S8DR	AI LABOR	0	0	0	195	430	625
	OUT OF PLANT	0	0	0	0	125	125
	TOTAL	0	0	0	195	555	750
RMDF	AI LABOR	0	0	0	25	80	105
	OUT OF PLANT	0	0	0	0	60	60
	TOTAL	0	0	0	25	140	165
SURVEILLANCE (NON-SRE)		25	15	10	10	5	65
TOTALS	AI LABOR	840	1,665	1,830	2,030	540	6,905
	OUT OF PLANT	255	335	550	1,130	185	2,455
	TOTALS	1,095	2,000	2,380	3,160	725	9,360
PRIOR GFY 75 EXPENDITURES							785.0
TOTAL*							\$10,145 K

*Does not include proposed additional security costs
for SRE Fuel Declad on Core II

TABLE 4.3
D&D Program Cost Projection
 \$K (Escalated)

	<u>GFY 75</u>	<u>GFY 76</u>	<u>GFY 77</u>	<u>GFY 78</u>	<u>GFY 79</u>	<u>Total</u>
AI Labor	840	1,665	2,315	2,557	939	8,282
Out of Plant	255	335	666	1,504	271	3,065
Totals	1,095	2,000	2,981	4,061	1,210	11,347

Prior GFY 75	<u>785</u>
Total*	12,132

*Does not include proposed additional security costs for SRE fuel declad on Core II.

The activity network schedules included in this plan were developed based on the funding levels shown in Table 4.2. Substantial variations in the Table 4.2 funding level for GFY 1975 will result in the deferral of near-term tasks into GFY 1977, since a funding ceiling of \$2,000K has been assumed for GFY 1976. Task flexibility for GFY 1975 is somewhat limited due to the smaller percentage of total funding scheduled for the year. The major tasks are the tooling for the SRE, the SRE fuel declad, the SRE primary sodium disposal, and the Hot Cave and KEWB facility dismantling. The SRE tooling effort will have the greatest overall program cost and schedule impact if not accomplished as proposed in GFY 1975.

The difference in the Table 4.1 and Table 4.2 funding for GFY 1975 is due primarily to the added anticipated cost for decladding the SRE fuel and for a greater SRE remote tooling effort in the initial phase of the program. A comparison of the current program authorized funding and the revised estimate is shown in Table 4.4. The activity network schedules

TABLE 4.4
REVIEW OF GFY 75 TASK FUNDING REQUIREMENTS FOR DECONTAMINATION
AND DISPOSITION OF SRE

Task	Current Program Letter (\$000)	Revised Funding Requirement (\$000)	Remarks
SRE Surveillance	25	15	Lower estimated cost and extend to to GFY 1976 (-10)
Declad & Ship SRE Fuel	160	*225	Declad more difficult Core I fuel first due to added Core security requirements (+65)
Remove A/B HTX & Kerosene Cooling System	50	10	Lower contractor costs for salvage (-40)
Update 1970 Conceptual Plan	25	0	Update not required (-25)
Prepare Dismantling Plan	80	50	Lower estimated completion cost (-30)
Dismantle Portable Hot Cell	10	0	Defer task to GFY 1976 (-10)
Prepare Specs & Procedures	100	80	Partially defer to GFY 1976 and extend to GFY 1977 (-20)
Design & Procure Shipping Containers	10	0	Defer task to GFY 1976 and 1977 (-10)
Design & Procure Tooling	70	**405	Accelerated schedule to complete in GFY 1975 & 1976 (includes 154K component costs). Total tooling and vessel removal program costs unchange (+335)
Package, Transport, and Bury Rad Waste	10	0	Defer task and extend through GFY 1978 (-10)
Prepare Final Reports	5	0	Defer task and extend through GFY 1978 (-5)
Obtain Reviews, Approvals, and Authorizations	25	5	Partially defer and extent through GFY 1977 (-20)
Other Tasks	<u>110</u>	<u>110</u>	
Total	680	900	
Added Cost GFY 75		220	

*Includes \$15 K equipment costs

**Includes \$154K component procurement

and the five-year program are based on the revised estimate, which indicates a \$220K increase over current authorization. The areas where sequence of operations or estimated costs could be changed are shown and described. The major net changes for GFY 1975 are \$50K operations and \$15K for equipment in the SRE fuel declad task, and \$154K for fabricated component needs in the SRE remote tooling effort.

The impact of alternate funding resolutions are shown in Table 4.5. The plan designated as A follows the present development of the activity network schedules, as shown in Figures 4.1, 4.2, and 4.3. Plans B, C, and D are the options identified as a function of added funding availability. Table 4.6 depicts the impact of the four options on schedules for the major tasks involved in the SRE D&D effort. The A, B, C, and D end points on the task bars indicate the revised completion dates. The A points are coincident with the corresponding points on the schedules of Figures 4.1 and 4.2.

Activity Network Schedules

The overall schedule for the entire D&D Program is shown in Figure 4.1. The four-year base for the SRE dismantling is shown, along with the five-year total program schedule. The dismantling of the various facilities is sequenced to meet established priorities based on degree of potential hazard, utilization of existing facilities, cost effectiveness, funding guidance, and special planning and tooling requirements. A chronological description of the schedule was presented in Section III.

Figure 4.1 represents the first level of detail necessary to develop the budgetary and schedule requirements for the program. Overall task sequencing is determined from these networks. Figures 4.2 and 4.3 represent the second level of detail for the SRE task; and for the KEWB,

TABLE 4.5

POTENTIAL SCHEDULE EXTENSIONS FOR ALTERNATE FUNDING PLANS

ACTIVITY	PLAN			
	A	B	C	D
DECLAD AND SHIP SRE FUEL	-	3 MO	4 MO	6 MO
DESIGN AND PROCURE SRE TOOLING	-	-	3 MO	8 MO
REMOVE SRE VESSELS	-	-	3 MO	8 MO
REMOVE ACTIVATED CONCRETE	-	-	3 MO	8 MO
REMOVE AND DISPOSE PRIMARY SODIUM	-	-	8 MO	8 MO

PLAN A - INCREASE FUNDING \$50K FOR FUEL DECLAD OPERATIONS AND 169K FOR DECLAD & TOOLING COMPONENTS

PLAN B - INCREASE FUNDING \$169K FOR COMPONENT PROCUREMENT ONLY

PLAN C - NO FUNDING INCREASE - CONVERT \$169K FROM OPERATIONS TO COMPONENT PROCUREMENT

PLAN D - NO FUNDING INCREASE - NO FUNDING CONVERSION

TABLE 4.6

IMPACT OF ALTERNATE PLAN ON MAJOR MILESTONES

LEGEND

PLAN A - INCREASE FUNDING \$50K FOR FUEL DECLAD OPERATIONS AND \$169K FOR DECLAD & TOOLING COMPONENTS

PLAN B - INCREASE FUNDING \$169K FOR COMPONENT PROCUREMENT ONLY

PLAN C - NO FUNDING INCREASE - CONVERT \$169K FROM OPERATIONS TO COMPONENT PROCUREMENT

PLAN D - NO FUNDING INCREASE - NO FUNDING CONVERSION

Building 003, and Building 028; respectively. The second level schedules are required to effectively monitor cost and work progress at each facility. In the case of the SRE, the second level activity network schedule identifies the major tasks which will require the preparation of Activity Requirements documentation and the development of third level schedules to aid in the detailed task planning and control. One example of an area requiring a third level schedule will be the remote tooling activity, including the manipulator design and fabrication vessel mockup design and fabrication, mockup operations, and vessel cut-up.

Figures 4.1, 4.2, and 4.3 describe initial program planning. Some of the actual milestone dates will differ from those presented due to accelerated progress, shifts in priorities, unexpected complications, and other unforeseen events. Significant changes in planning will be documented by revised activity network schedules. Actual work progress will be charted on the current network schedules as the milestones are completed. The milestone completions, percent completions, and accumulated costs will be provided in the monthly reports, as described in Section V. The revised schedules will be provided as separate transmittals, and will also be included in the annual revision of the Appendix to this plan. The schedules presented in this section of the Program Plan will not be revised, but will be used as a historical record against which actual performance can be measured.

TASK	ACTIVITY	CY 74		CY 75		GFY 1976		CY 76		GFY 1977		CY 77		GFY 1978		CY 78		GFY 1979	
		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J		J A I S O N D J F M A M J J J A S O N D J F M A M J J J A S O N D J F M A M J			
PROGRAM MGMT & SUPPORT	AGENCY INTERACTIONS																		
	AEC SAN																		
	DIV WASTE MGMT																		
	DIV OF PROD																		
	DIV OPER SAFETY																		
	AEC REQ																		
	DEPT OF TRANS																		
	CAL BUR RAD HLTH																		
	SEE (BLDG 020)																		
	ACTIVITY MGMT																		
	HEALTH & SAFETY																		
	DISM'TL PLANS																		
	REOMT'S & PROCD'S																		
	QA ADM																		
	TOOLING/EQUIP																		
	DISMANTLE/DISPOSE																		
	SURVEY & REPORT																		
	SEE (BLDG 021)																		
	ACTIVITY MGMT																		
	HEALTH & SAFETY																		
	DISM'TL PLANS																		
	REOMT'S & PROCD'S																		
	QA ADM																		
	TOOLING/EQUIP																		
	DISMANTLE/DISPOSE																		
	SURVEY & REPORT																		
	SEE (BLDG 022)																		
	ACTIVITY MGMT																		
	HEALTH & SAFETY																		
	DISM'TL PLANS																		
	REOMT'S & PROCD'S																		
	QA ADM																		
	TOOLING/EQUIP																		
	DISMANTLE/DISPOSE																		
	SURVEY & REPORT																		
	SEE (BLDG 023)																		
	ACTIVITY MGMT																		

LEGEND	
▽	MILESTONES
▽	START PRIMARY SODIUM DISPOSAL
▽	PROGRAM Q/A PLAN OUTLINE SUBMITTED
▽	PHUQUAM ACTIVITY PLAN DROUK
▽	FUEL DECLAD SCHEDULE SUBMITTED
▽	TASK ACTIVITY SCHEDULE SUBMITTED
▽	PROGRAM Q/A PLAN SUBMITTED
▽	DISMANTLING PLAN SUBMITTED
▽	SUBCONTRACT AWARD
▽	START REMOVAL OF TEMPERAL SYSTEM
▽	START PRIMARY SODIUM DISPOSAL
▽	START SECONDARY SODIUM SYSTEM DISMANTLE
▽	START REMOVAL OF STORAGE AND WASH CELLS
▽	START REMOVAL OF REACTOR INTERNALS
▽	START REMOVAL OF REACTOR VESSELS
▽	START REMOVAL OF RAD CONCRETE
★	ADDITIONAL MILESTONES, ACTIVITIES AND RESTRAINTS WILL BE IDENTIFIED IN THE SECOND LEVEL ACTIVITY NETWORK
35.00.78	% COMPLETION OF REMOVAL & DISPOSAL /DECLAD OPERATIONS

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SRE

LEGEND

- ▽ MILESTONES
- ▼ RESTRAINTS
- ▽ ACTIVITY SCHEDULE SUBMITTED
- ▽ DISMANTLING PLAN SUBMITTED
- ▽ SUBCONTRACT AWARD
- ▽ ADDITIONAL MILESTONE, HIGHLIGHT, RESTRAINTS AND ACTIVITY DETAILS WILL BE IDENTIFIED DURING PREPARATION OF DISMANTLING PLAN

EP EQUIVALENT PERSONNEL

**KEWB, BUILDINGS 003, AND 028
DECONTAMINATION AND DISPOSITION
ACTIVITY NETWORK & MANPOWER LOADING**

LEGEND

- ▽ MILESTONES
- ▽ RESTRAINTS
- ▽ ACTIVITY SCHEDULE SUBMITTED
- ▽ DISMANTLING PLAN SUBMITTED
- ADDITIONAL MILESTONES, HOLDPOINTS, RESTRAINTS AND ACTIVITY DETAILS WILL BE IDENTIFIED DURING PREPARATION OF DISMANTLING PLANS.
- ⊗ COORDINATE FLOOR EXCAVATION WITH BRE MOCKUP REQUIREMENTS
- ▽ SUBCONTRACT AWARD
- 25-50-75 % COMPLETION OF REMOVAL & DISPOSAL
- EP EQUIVALENT PERSONNEL

REVISED: 11-4-78

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Fig. 4.3

**Atomics International Division
Rockwell International**

SECTION V

MANAGEMENT PLAN

SCOPE

The management plan establishes a basis for the efficient management, control, and execution of the AI Decontamination and Disposition of Facilities Program.

RESPONSIBILITIES OF MAJOR PARTICIPANTS

Atomics International, through the D&D Program Office, will assume the full responsibility for performing the authorized dismantling activities, including all aspects for health and safety. After ERDA approval of the individual facility Dismantling Plans, AI will execute each in an efficient and economical manner.

ERDA will be responsible for monitoring all contract activities, health and safety practices, and dismantling operations; including the administration of AI cost and schedule performance. ERDA-SAN will provide official notice to AI of ERDA approvals for the Dismantling Plans, Quality Assurance Plan, Operational Safety Plan, Program Plan, and other actions requiring ERDA approval. ERDA-SAN will also provide comments where appropriate for AI incorporation into documents reviewed by the ERDA.

The ERDA Division of Waste Management and Transportation (WMT) will provide the required funding, programmatic and contractual requirements, and overall technical guidance for the D&D Program.

PROGRAM MANAGEMENT ORGANIZATION

This section presents the Atomics International management organization as related to the D&D Program. Updated charts, as required, will be included in the Appendix to this Plan. The Appendix will be revised at least annually. *change*

The management organization at Atomics International is shown in Figure 5.0.

A Program Manager has been established for the D&D Program. The Program Manager, who will report to the Director, FFTF and Fuel Products (see Figure 5.1. AI FFTF and Fuel Products Organization Chart), will have overall programmatic responsibility for all efforts associated with the decontamination and disposition of ERDA facilities at the Santa Susana Field Test Laboratory.

An Engineering Project Manager will report directly to the Program Manager. This Project Manager will be responsible for the engineering efforts associated with the D&D Program, including the development of Dismantling Plans and Activity Requirements, and the development of special tooling and containers. Project engineers will assist the Engineering Project Manager with specific areas of the D&D engineering.

A Dismantling Activities Project Manager will report directly to the Program Manager. This Project Manager will be responsible for the physical dismantling activities being performed by AI, Rocketdyne, and subcontractor personnel. Project engineers will be established for major dismantling tasks within this project. Personnel with specialized skills, e.g., remote handling and explosive demolition, who are assigned within the program organization will also report to this Project Manager.

Rockwell International

Atomsics International Division
North American Aircraft Operations

DECEMBER 16, 1974

APPROVED:

D. D. Myers
D. D. MYERS
PRESIDENT
NORTH AMERICAN AIRCRAFT OPERATIONS

Figure 5.0
CHART NO. 1

Rockwell International

Atoms International Division

FFTF & FUEL PRODUCTS

G.W. Meyers

G. W. MEYERS
DIRECTOR

S.F. Jacobellis

APPROVED

S. F. JACOBELLIS

Figure 5.1

The interface relationships between the D&D Program organization and the Atomics International support functional departments are shown in Figure 5.2. These relationships are further described below.

The AI Research and Engineering Division (see Figure 5.3, AI Engineering Organization Chart) will provide support to the D&D Program in the form of design of special remote handling equipment and casks (Design Engineering), in the performance of structural analysis where required (Structural & Process Engineering), and in dismantling operations, radioactive waste disposal (RMDF), and fuel decladding operations in the AI Hot Laboratory (Development and Test). Also, support will be provided to the D&D Program for chemistry, materials, and physics technology as required to perform analysis or develop processes for such tasks as the reaction or residual sodium (Research and Technology). This division will interact with subcontractors, such as the Oak Ridge National Laboratory, through the D&D Program Office, for the development and fabrication of special tooling and equipment. The Dismantling Plans, Activity Requirements and Detailed Working Procedures will be released and controlled by the Engineering Division (Engineering Systems Management).

Product Operations will provide support to the D&D Program for quality assurance and the fabrication of tooling. A Quality Assurance Manager will be assigned to the program to audit operations and perform overall duties described in the Program Quality Assurance Plan (see Figure 5.4, AI Product Operations Organization Chart).

Figure 5.2

Rockwell International

Atomics International Division

RESEARCH AND ENGINEERING

H. C. Wieseneck

H. C. WIESENECK
DIRECTOR

S. F. Jacobellis

APPROVED

S. F. JACOBELLIS
PRESIDENT

Figure 5.3

Atomic International Division
Rockwell International

PRODUCT OPERATIONS

A. C. Crawford

A. C. CRAWFORD
DIRECTOR

S. F. Iacobellis

APPROVED

S. F. IACOBELLIS
PRESIDENT

Figure 5.4

OCTOBER 1, 1974
CHART NO. 4
PRODUCT OPERATIONS

Program Administration support will be provided by the Program Business Management Department (see Figure 5.5, AI Finance and Administration Organization Chart). This support will interface with the D&D Program at the program manager level to assure effective control of funding, schedules, and program data. Work packages and control systems will be utilized which are consistent with the overall AI system for Program Administration.

The Health, Safety, and Radiation Services Department will provide health physics, industrial hygiene, industrial safety, and nuclear materials management support to the D&D Program. In addition, any required review and approval of D&D activities by the AI Management Safety and Hazard Review Committee, or by the Nuclear Safeguards Review Panel, will be coordinated by the Health, Safety, and Radiation Services Department. Safety review and approval will interface with the D&D Program at the program manager level to assure that safety inputs to program management are maintained separate from inputs from actual dismantling operations.

The Facilities and Material Department will provide support to the D&D Program in the coordination of subcontractor activities and the activities performed by Rocketdyne Maintenance personnel under Interdivision Work Authorizations (IDWA's). All subcontracts and the purchase of all equipment and materials will be arranged through this department. The Packaging Engineering Function of this department will provide design support for the packaging of radioactive materials for shipment to disposal sites.

The Rocketdyne Division Maintenance Department will provide personnel and equipment for facility maintenance and for certain tasks associated with dismantling activities. The IDWA's for the funding of these activities will be coordinated by the Facilities and Material Department.

Atoms International Division
Rockwell International

FINANCE AND ADMINISTRATION

R G JONES
VICE PRESIDENT & CONTROLLER

APPROVED
S F IACOBELLIS
PRESIDENT

Subcontracts will be prepared for the performance of explosive demolition tasks, for radioactive waste disposal, and for the development of special equipment and containers. It is anticipated that a subcontract will be given to Oak Ridge National Laboratory for technical assistance in the adaptation of the equipment developed for the Elk River dismantling to the requirements of the D&D Program.

PROGRAM COST AND SCHEDULE CONTROL

The Program Business Management Department will provide support to the D&D Program Office in the planning, budgeting, administration, and control of the program costs and schedules.

The budgetary cost estimate of the activities described in Section IV of this plan was developed by the preparation of detailed manloaded activity networks. Equipment, material, subcontract, consultant and other direct expenses associated with an activity were also estimated and priced at the currently predicted rates to determine the total predicted activity costs. The activity networks for each facility, which were used to provide the basic cost data, are presented in Section IV in Figures 4.1, 4.2, 4.3. The Work Breakdown Structure for the entire D&D Program appears in Table 5.1, which shows the cost accounting structure by general activity category and facility. This accounting structure will provide the expenditure visibility required to effect prompt cost control actions and to measure budgetary performance.

An internal monthly cost report and cost analysis will be performed by the Program Business Management Department utilizing AI's computerized cost reporting system as a means of monitoring costs vs forecast at each of the general activity levels. The tabulated results of the monthly analysis for each facility being dismantled will be transmitted to the D&D Program Office to determine the monthly and accumulated expenditures.

TABLE 5.1

COST ACCOUNTING WORK BREAKDOWN STRUCTURE

GENERAL ACTIVITY CATEGORY	SRE B/143	FUEL DECLAD	HOT CELL B/003	KEWB B/073	STIR B/028	S8ER B/010	SETF B/024	S8DR B/059	RMDF B/021 B/022
Project Management & Support (Each Facility)	10000	11000	13000	14000	15000	16000	17000	18000	19000
Dismantling Plans , Activity									
Reqmts, Working Procedures, & Final Reports	10100	11100	13100	14100	15100	16100	17100	18100	19100
Facility & Indus. Engr./Contractor Liaison	10200	11200	13200	14200	15200	16200	17200	18200	19200
Health & Safety/Quality Assurance	10300	11300	13300	14300	15300	16300	17300	18300	19300
Manufacturing Support	10400	11400	13400	14400	15400	16400	17400	18400	19400
Design & Develop Tooling & Equipment	10500	11500	13500	14500	15500	16500	17500	18500	19500
Decontaminate & Dismantle	10600	11600	13600	14600	15600	16600	17600	18600	19600
Package & Ship Radioactive Waste	10700	11700	13700	14700	15700	16700	17700	18700	19700
Photographic Documentation	10800	11800	13800	14800	15800	16800	17800	18800	19800
Spare	10900	11900	13900	14900	15900	16900	17900	18900	19900
Program Management & Support (Overall D&D Program)	12000								12000
Facility Surveillance	20000								20000

These expenditures, along with the physical progress of the activities, will be compared to the forecasts contained in the activity networks by the D&D Program Office. The results of the comparison will be transmitted to the ERDA in the monthly progress report for the D&D Program.

The cost and schedule forecast to complete the program tasks will be systematically updated to meet the annual and midyear funding review requirements. In the event that interim program activity and cost changes are identified which differ significantly from the current forecast, a revised cost and schedule forecast to complete will be submitted to ERDA-SAN for review and approval. The revision will contain the total cost figures to date, the current authorized estimate to complete, the revised forecast to complete, the schedule impact, the difference between the forecast and authorized cost figures, and a narrative explanation of the significant cost and schedule differences.

PROGRESS REPORTS

A monthly progress report will be prepared and submitted to ERDA-SAN which will contain a narration of the month's progress and the appropriate progress charts that track the current and accumulated costs, forecast to complete, and milestone status. A separate chart with the format of Figure 5.7 will be prepared for each of the major tasks in the D&D Program, and an overall chart will be prepared with the format of Figure 5.8 for the total program costs. Initially, the individual cost and schedule progress charts will be prepared for (1) the Hot Cave dismantling, (2) the KEWB dismantling, (3) the SRE fuel decladding,

FIGURE 5.7
GFY 1975
ATOMICS INTERNATIONAL
D & D PROGRAM
MONTHLY COST REPORT

MONTH OF _____
ACTIVITY 13000
BLDG 003 Hot Cell

PAGE _____
189 NO. 13130
AEC B&R NO. RY-04-02-05.0
CONTRACT AT (04-3)-701
TASK 8

COST (\$000)													
INCREMENTAL	FORECAST	1.5	5.6	5.4	14.5	9.3	8.0	10.2	9.9	12.2	13.3	12.6	12.5
	ACTUAL												
CUMULATIVE	FORECAST	1.5	7.1	12.5	27.0	36.3	44.3	54.5	64.4	76.6	89.9	102.5	115.0
	ACTUAL												
MANPOWER	FORECAST	0.3	1.4	1.4	2.3	1.8	1.7	2.0	2.0	2.8	2.4	2.4	0.7
	ACTUAL												

Milestones:

1. SUBMIT SCHEDULES
2. SUBMIT DISMANTLING PLAN
3. REACTIVATE CAVE SYSTEMS

4. DECONTAMINATE CAVE
5. DISMANTLE CAVE
6. EXCAVATE FLOOR, EXHAUST, & LIQUID WASTE SYSTEM

7. COMPLETE REPAIR, FINAL RAD SURVEY & FINAL REPORT

FIGURE 5.8

GFY 1975

G.O. 07704-99070

CONTRACT AT(04-3)-701

ATOMICS INTERNATIONAL

PROJECT COST SUMMARY

(Dollars in Thousands)

PAGE 1

189 NO. 13130

TITLE Decontamination & Disposition of Facilities

AEC B&R NO. RY-04-02-

	PRIOR YEAR	JUL (192)	AUG (160)	SEP (152)	OCT (200)	NOV (144)	DEC (128)	JAN (176)	FEB (160)	MAR (160)	APR (200)	MAY (152)	JUN (160)	ACT. PLUS FORECAST	BUDGET
E.P.'s Forecast		6.1	6.1	6.1	8.7	10.1	11.1	13.1	15.1	16.1	16.1	17.4	18.5	144.5	
E.P.'s Actual															
OPER. COSTS Forecast		20.8	36.9	34.9	64.9	55.8	54.8	87.4	88.4	91.7	122.3	105.6	111.5		
OPER. COSTS Actual															
Forecast Cum		20.8	57.7	92.6	157.5	213.3	268.1	355.5	443.9	535.6	657.9	763.5	875.0		875.0
Act Cum															
Oper. NOC's (Incl. Gen. Exp.) Equip.

COST DETAIL				
	CURRENT MONTH	CUMULATIVE	BUDGET	BALANCE REMAINING
LABOR				
MATL & SERV.				
TRAVEL				
COMPUTER				
GEN. EXPENSE				
IDWA				
TOTAL OPERATING				
FEE				
TOTAL				
EQUIPMENT				

PROJECT Decontamination & Disposition of Facilities

TASK 8

PROG MGR W. F. Heine D/713 LA16

DATE

(4) the SRE remote tooling design, procurement, and fabrication efforts, and (5) the SRE planning and dismantling tasks. The above five charts will provide visibility for effective cost control of all activities occurring during GFY 1975. Additional charts will be incorporated as required to include new activities as the program progresses, or as added visibility may become necessary for specific tasks. The total program cost, as shown in Figure 5.8, will provide the top level status in a convenient format on a single chart.

PURCHASING AND SUBCONTRACT CONTROL

General Procurement for the D&D Program will be performed by the Materials Department (Purchasing) located at the Santa Susana Test Site. The overall procurement objective is to purchase the required materials and services in a way most advantageous to the D&D Program and the Energy Research and Development Administration with regard to cost, quality, and schedule. Appropriate consideration will be given to the implementation of the government's Small Business, Labor Surplus Area, and Equal Opportunity Programs. Basic ERDA procurement policies will be adhered to as called out in the ERDA Procurement Regulations. Competitive purchases will be used in all cases, except where it is deemed to be in the best interest of the D&D Program to buy on a noncompetitive basis. Several examples of this would be: single source of supply, small dollar value, an emergency order, replacement parts procurement, or the technical nature of services performed, i.e., Architectural and Engineering (A&E) services.

It is anticipated that the majority of the buys will be contracted on fixed-price orders; AI's purchase order form sent to vendors reflect ERDA-approved terms and conditions, which are periodically updated and approved by the ERDA San Francisco Operations Office.

A Material Procurement Representative will be assigned to this program who will report functionally to the D&D Program Manager and administratively to the management of the Materials (Purchasing) Department. The D&D Procurement Representative will provide overall coordination for the procurement activities including interface liaison between program management and various component, material, and service buyers.

Type of Items Procured The following presents a general listing of the various items or services to be contracted for or bought for the D&D Program: (1) raw materials; (2) construction contracts such as the SRE mockup facility in Building 003, demolition, and salvage/scrappage; (3) services such as radioactive material handling and shipping, crane services, ORNL consulting engineering on the remote SRE manipulator system; and (4) components for the tooling systems such as drive motors, plasma arc cutting systems, oxy-acetylene cutting systems, remote handling systems, and portable hoists.

Procurement Plans Procurement plans will be developed as major procurement items are specifically identified. In addition, any subcontracted items which meet one or more of the following conditions will receive special management attention: (1) when the item will require unusually heavy participation by organizations outside the responsible Material Department to assure successful performance by the subcontractor; (2) when the task is judged to be of high risk or which taxes the state-of-the-art; (3) when the item has a critical interface to company equipment, to prime contract end items, or to scheduled milestones; or (4) is of such a dollar value that there may be a substantial impact on the financial status of the overall program.

These procurement plans will be developed by the D&D Program Office, Material Procurement Representative, Engineering, and other individuals selected from disciplines which are involved with the program. The following outline presents the general approach for developing a procurement plan to meet the requirements of the D&D Program:

1) Industry Survey for Concept Formulation

Prepare Technical Questionnaires
Submit to Industry
Technical Briefings with Potential Bidders
Plant Surveys of Potential Bidders
Assessment of Technical, Management, and Financial Capability

2) Prepare Subcontract Statements of Work
(Bidders Package or an RFQ)

Drawings, Specifications, Performance Criteria
Reliability Statement of Work
Quality Statement of Work
Configuration Management Requirements
Maintainability Requirements
Acceptance Criteria, Test Plans
Reporting Requirements
Terms and Conditions (Including Warranty Clauses)
Schedules

3) Invitation to Bid (ITB)

Issuance of the ITB
Bidder's Conference (Preparation for and Holding Conference)

4) Evaluate Bids

Receive Formal Bids for Suppliers
Bidder Evaluation Team
Technical Evaluation
Reliability, Quality, and Materials Evaluation
Review with Management, as Required
Review with ERDA, Obtaining Approval, as Required

5) Subcontract Award

Negotiations
Announcement - Issuance of Purchase Order
Post Award Review with Successful Bidder
Indoctrination and Technical Review of Preliminary Plans

6) Subcontract Monitoring and Quality Surveillance

Establish Resident Team
 Quality
 Material
 Engineering
 Manufacturing
Establish Reporting Cycle for Subcontract
 Report Analysis and Review with Project Manager
Baselining
 Design Review and Approval (Supplier Designed Items)
 Process Review and Approval
 Procedure Review and Approval
 Operator Instruction Review and Approval
 Inspection Instruction Review and Approval
Periodic Technical Review
Procurement Tracking Status and Reporting
Financial Reporting

7) Article Acceptance

Acceptance Criteria

Demonstration or Inspection of Article

Sequence of Purchase The normal sequence of activities involved in the procurement activity for the D&D Program:

- 1) Upon release of design(s) and specifications of an item or system and corresponding approval, the procurement activity will be initiated.

A Request for Quote (RFQ) will be signed by the Program Manager and will form the basis for Purchasing to prepare and let to the appropriate supplier an Invitation to Bid (ITB). The ITB requests from the supplier a cost and schedule quotation per the documentation included therein.

- 2) The formal bids are received by Purchasing from the suppliers and an analysis will be conducted between the bids in regard to price and compliance to specification and delivery. The buyer will request a technical evaluation be performed when any technical decisions are required.
- 3) When the supplier who meets the above-stated criteria has been selected, a Purchase Requisition (25R) is initiated which authorizes Purchasing to place a purchase order with the supplier who was the low bidder, complied technically with the specification requirements, and satisfied the delivery need date. When the supplier acknowledges the purchase order with his signature and returns it to the Purchasing Department, a contract then exists in accordance with the terms of the purchase order, (quality, delivery schedule, price, specification, and basic terms and conditions).

- 4) At this time of the sequence, a purchasing liaison man will follow the purchase order through to completion. This entails coordinating of supplier documentation; coordinating source inspection requirements and visits; and monitoring supplier's progress until delivery of the item.
- 5) Receiving, a function of the Purchasing Department, logs the delivered item and Receiving Inspection verifies compliance to the purchase order. When the item completes inspection, it is delivered to the requestor for use, or it may be entered into the warehousing system for storage until needed for use.
- 6) Payment and closing out of the purchase order is initiated upon the completion of the receiving inspection function.

In the case of items which are considered straightforward with regard to cost and technical requirements, the RFQ steps described above are deleted. This enables Purchasing to solicit ITB and to contract with the supplier immediately within the limits of the 25R, based upon the analysis of the price and delivery information submitted.

The sequences described in steps 1) through 6) above will be tracked for the Program Office by the Material Procurement Representative, and any problems relative to technical, manufacturing, cost, or schedule will be identified and appropriate action taken at the direction of the Program Manager.

Change Control During the life of a D&D Program purchase order, any change in the purchase order quantities, terms, designs, drawings, or specifications will be authorized by Purchasing by means of a purchase order change notice issued to the supplier. The supplier may request an adjustment in cost, or schedule, or both, within 30 days after receipt of the change notice. All such changes will require Program Management approval prior to processing.

ERDA Interface Requirements (Purchase Order Action Approvals) It is anticipated that prior written approvals by ERDA-SAN will be required for the following types of procurement actions:

- 1) Original fixed-price purchase orders over \$100,000.
- 2) Original fixed-price construction contracts over \$100,000 provided the file contains evidence from the Contracting Officer concerning the applicability of the Davis-Bacon Act. If the file does not contain evidence of Davis-Bacon applicability, approval will be required if over \$2,000.
- 3) Cost-type, time and material, or labor-hour contracts over \$500.
- 4) Leases or rentals of personal property over \$1,000.
- 5) Subcontracts providing for the purchase of patents or patent licenses, or for the direct payment of patent royalties.
- 6) Subcontracts containing any restriction on the use or dissemination of supplies or technical information called for under the contract.
- 7) Consultant or architect-engineer subcontracts.
- 8) Subcontracts involving correction of an alleged mistake in a bid where the mistake exceeds \$50 and is not an obvious clerical error.

Changes to subcontracts approved in accordance with 1) through 8) above shall be subject to written approval, if said change increases the current contract price more than 10%, or causes the current contract procurement action price to exceed \$100,000.

ERDA approval will be obtained in cases where there is:

- 1) Any correction which could cause the bid or contract price to exceed that of the second low bid or displace one or more low acceptable bids.
- 2) Any correction, other than obvious clerical errors, where Commission approval of the procurement action is required.
- 3) Any correction of mistakes disclosed after award which exceed \$1,000.
- 4) Any recession of a contract.

Procurement and Receival Tracking Status (PARTS) Program This computerized program provides current procurement status with forward-looking schedule estimates, and is available as an option to a manual status report. The PARTS Program starts tracking with the 25R (purchase requisition) release to Purchasing from the Program Office and follows the item through to delivery to the user or storage warehouse. Potentially behind-schedule items are "flagged" out for management attention and corrective action. The D&D Material Procurement Representative will provide overall coordination of the status report for either the PARTS Program or a manually prepared report. It should be noted that inputs from various organizations will be required for the report.

Each of the organizations will provide input for the computerized PARTS Program or a manual report as the line item paperwork or hardware item

is processed in their area of responsibility. Printouts of this status report will be distributed on a weekly basis to the D&D Program Office, buyers, supplier liaison personnel (follow-up), and management, as required. Ideally, this will provide a central administration of the D&D procurement activities.

PROGRAM DATA MANAGEMENT

To maintain cognizance over the program directives, correspondence, action items, reports, and schedules for the D&D Program, the Program Data Management function within Program Business Management Department will be assigned the responsibility of maintaining and controlling the status of these elements of program data. The term "data," as used here, applies to written material, either technical or nontechnical, prepared in support of the D&D Program. Existing computer systems and guidelines for handling these data will be implemented to form the Data Management Plan. This plan will result in the compilation and maintenance of a two part status and action report to be utilized for data control by the Program Office.

The first section of the report will contain the status of all open internal and external correspondence. This report will provide: transmittal information for traceability; "information only," agreement and commitment, or action status; the action assignment responsibility; due dates for action; the actual date for completing the action; and the correspondence that closes the action with traceability data. The initial report will contain all the preceding correspondence for the D&D Program, beginning with January 1974. The succeeding issues will only contain the open items requiring action, including the new items added from the previous report; and all the items that were open in the previous report but that were closed during the current report period. Items dropped from the action list will be added to an archive list, which will form the permanent record for the program correspondence.

The second section of the report will contain a tabular listing of the current status of the major program activity network milestones for each facility. The status will consist of: the scheduled start and completion dates of an activity; the estimated start and completion dates if modified from the original schedule; the actual start and completion dates as accomplished; and the subordinate or following interfacing activities.

The correspondence status data will be recorded as the information is received on a daily basis, and input to the computer on a periodic basis. The milestone status will be updated and input on a periodic basis. The combined report will be issued to the Program Office with the updated data on a biweekly schedule initially. An effective report reissue frequency will be established based on system cost and rate of generation of new data, and revisions made to the biweekly schedule if warranted.

A Program Office file and index will be prepared and maintained which will provide a complete document listing including: the revision status of Engineering Data released documents, non-released program documents, ORNL drawings, ORNL photos, and AI photos. This index will serve mainly as a convenient single source listing of the current program documents.

ENGINEERING DATA CONTROL

The Engineering Release Plan of Action for the D&D Program (RPA-704-990-001) will establish the requirements for governing the preparation and release of engineering documentation to support this program.

Engineering documents will be prepared in accordance with the Engineering Management Procedures Manual (EMP) and other applicable procedures as specified below. The following documentation will be controlled by the Engineering Data Release system.

- 1) The Program Plan shall be prepared by the Program Manager in accordance with EMP 2-2.
- 2) The Quality Assurance Program Plan shall be prepared by the QA Program Administrator in accordance with QAM N1.21.
- 3) The Operational Safety Plan will be prepared in accordance with applicable SOP Section B procedures and EMP 3-26.
- 4) The Facilities Dismantling Plan for each facility will be prepared in accordance with EMP 3-26.
- 5) Activity Requirements will be prepared in accordance with EMP 3-26 to identify specific tasks within major activity categories.
- 6) The Detailed Working Procedures will be prepared in accordance with EMP 3-26 for each specific activity task.
- 7) Test Plans will be prepared where applicable using EMP 4-3 as a guide.
- 8) The Training Plan will be prepared in accordance with EMP 3-26.
- 9) Work Packages will be prepared in accordance with SOP G-44. Work Releases will be prepared in accordance with SOP G-46 to define AI supporting department task authorizations and scope of work. Applicable procedures, codes, and policies required shall be referenced in the documents.

- 10) Experimental Drawing Release System (equipment, mockup and packaging) will be used because of the single application of tooling designed for this program. Experimental drawings shall comply with EMP 3-3. The \$5,000 limit on the use of experimental drawings shall not apply in this case. However, this exception requires that the Program Manager sign all work releases (see EMP 3-3 paragraph 2.2). Numbering and revisions shall comply with EMP 3-3.1.
- 11) Activity Networks will be used for scheduling the program as described in Sections IV and V of this Program Plan (see EMP 1-6).

EMP 3-37 designates the approval signatures necessary for the various areas of the Program. Specific approvals necessary for this particular Program are listed in Table 5.2.

Statements of work to supplement specifications and/or drawings will be written to cover the Subcontractor's/Supplier's work. The statements of work will define the scope of the work and the interfaces, scheduling, and data required for the job. All subcontracting will be processed by the Facilities and Material Department.

A Configuration Summary will be prepared for this program to record the latest revision status of the engineering documents (SOP M-20). The Summary will be updated at least quarterly, and will be issued to all supporting functional managers to assure that the latest revised applicable procedure is being used.

TABLE 5.2
SIGNATURE AUTHORIZATIONS

APPROVAL REQ. DOCUMENTS	PROGRAM MGR.	QA PROG. ADM.	PROJECT MGMT.	HEALTH & SAFETY	OTHER	ERDA
ERPOA	W.F. Heine		A.W. Graves B.F. Ureda		W.B. Haigler	
PROGRAM	W.F. Heine	E. G. Andrews	A.W. Graves B.F. Ureda	M.E. Remley	Prog Data Mgmt Contract Adm. C.R. Johler	X
QA PROGRAM PLAN	W.F. Heine	D.N. Glass R. McDermott	A.W. Graves B.F. Ureda	M.E. Remley		X
OPERATIONAL SAFETY PLAN	W.F. Heine	R. McDermott	A.W. Graves B.F. Ureda	M.E. Remley		
FACILITIES DISMAN. PLANS	W.F. Heine	E. G. Andrews	A.W. Graves B.F. Ureda	M.E. Remley		X
ACTIVITY REQUIREMENTS	W.F. Heine	E. G. Andrews	A.W. Graves B.F. Ureda	M.E. Remley		
DETAILED WORKING PROC.	W.F. Heine	E. G. Andrews	A.W. Graves B.F. Ureda	M.E. Remley		
TRAINING	W.F. Heine	E. G. Andrews	A.W. Graves B.F. Ureda	M.E. Remley	Training C.A. Parker	
EXPERIMENTAL DRAWINGS		E. G. Andrews Manipulator Only	A.W. Graves or B.F. Ureda	M.E. Remley Manipulator Only	G.J. Hallinan or W.R. McCurnin	
WORK STATEMENTS	W.F. Heine		A.W. Graves B.F. Ureda		Facility Engr. L.S. Breese	

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TABLE 5.2 (Continued)

APPROVAL REQ. DOCUMENTS	PROGRAM MGR.	QA PROG. ADM.	PROJECT MGMT.	HEALTH & SAFETY	OTHER	ERDA
EO's		E. G. Andrews Manipulator Only	A.W. Graves		Checking G. Cogswell Manipulator Only	Engineering G. J. Hallinan Manipulator Only
TEST PLANS	W.F. Heine	E. G. Andrews	A.W. Graves or B.F. Ureda		Functional Manager	

added

*who is Heine
in ERDA*

OUTGOING CORRESPONDENCE

All correspondence from AI to ERDA regarding Program matters will be addressed to: Mr. R. L. Westby, Director
Safety and Nuclear Materials Division
Energy Research and Development Administration
San Francisco Operations Office
1333 Broadway
Oakland, California 94612

Copies of the Program correspondence will be addressed to:

Mr. L. Lanni, Assistant Director
Safety and Nuclear Materials Division
Energy Research and Development Administration
San Francisco Operations Office
1333 Broadway
Oakland, California 94612

Mr. G. Daly, Chief
Operations Branch
Division of Waste Management and Transportation
Energy Research and Development Administration
Washington, D. C. 20545

Mr. H. Glauberman
Division of Waste Management and Transportation
Energy Research and Development Administration
Washington, D. C. 20545

Mr. D. B. Campbell, Director
Energy Research and Development Administration
Southern California Energy Program Office
Post Office Box 1446
Canoga Park, California 91304

All correspondence from AI relating to contract matters will be addressed to: Mr. V. A. Magliano, Director
Contract Services Division
Energy Research and Development Administration
San Francisco Operations Office.
1333 Broadway
Oakland, California 94612

Copies of the contract correspondence should be addressed to all the above Program addressees, including Mr. R. L. Westby, Director, Safety and Nuclear Materials Division.

Property Disposal

The equipment that remained at each of the facilities at the time of the SNAP Close-out Program and the KEWB and SRE Deactivation Programs was put on an equipment utilization list and surplused at that time. The equipment associated with the SRE was documented in the AI document, TI-599-19-102, "Equipment and Material Inventory - Sodium Reactor Experiment," October 24, 1967. Any equipment presently located at any of the facilities generally is radioactively contaminated or not of further use commensurate with acquisition costs.

The equipment that does remain at any of the facilities will be surveyed to determine if there is any radioactive contamination, and if so, what level is present. If the equipment is contaminated, it will not be cleaned unless the salvage value warrants the cost of cleaning. If the equipment is not contaminated, the salvage value to a contractor will partially defray the cost of removal; or for equipment in good working order, the Equipment Utilization function at AI will determine the usefulness of the equipment to other ERDA programs. The non-contaminated equipment will be disposed of as scrap if no useful purpose can be found for retention.

Final Reports

A final report will be prepared for each facility at the conclusion of the dismantling process. The report will document the radioactive contamination levels present at the beginning of the dismantling effort and certify the levels remaining at the completion of the task. The actual cost and schedule will be discussed and compared to the originally

forecast effort. Details of the costs will be reported to serve as useful tools for future planning. Unusual or troublesome events will be discussed, along with the resolution and recommendations for future avoidance. Photographs, charts, graphs, and other visual aids will be utilized where applicable to more fully describe the scope of work accomplished. A motion picture will be made of the SRE dismantling and of pertinent aspects of the dismantling of the other facilities.

The reports are scheduled to be completed in a timely manner for each facility, and are included as milestones in the activity network schedule.

SECTION VI

QUALITY ASSURANCE PLAN

A separate quality assurance plan will be prepared for the D&D Program, "Quality Assurance Plan for the Decontamination and Disposition of Facilities," PP-704-990-001, which will require ERDA review and approval. A brief description of the scope and responsibility is given below.

SCOPE

The plan describes the Quality Assurance activities to be performed by Atomics International (AI) to assure the development of and compliance with procedures for health, safety, and environmental protection, the safe disposition of hazardous and radioactive materials, and the restoration of decontaminated facilities to conditions which will allow unrestricted use. The Quality Assurance Program Plan (QAPP) is based on the requirements of AEC Manual Chapter 0820 and will include a Quality Assurance Program Procedures Index. The index will list procedures, instructions, and other documents which will be used to implement the specific quality assurance requirements.

RESPONSIBILITY

The Manager, Quality Assurance, is responsible for the establishment of Quality Assurance Policies and provides administrative and technical direction in implementing these policies. He is also responsible for assuring that procedures established by Health, Safety, and Radiation Services (HS&RS) are implemented as applicable. The administration of the QAPP is accomplished through the Quality Assurance Program Administrator (QAPA). Figures 5.0 and 5.2 in Section V depict the independence of operations for the dismantling processes, the quality assurance responsibilities, and the health and safety monitoring. The health and safety efforts on the D&D Program will be described in an Operational Safety Plan.

SECTION VII

OPERATIONAL SAFETY PLAN

A separate operational safety plan will be prepared for D&D Program, "Operational Safety Plan for the AI Decontamination and Disposition of Facilities Program," SRR-704-990-001. A brief description of the scope and responsibilities is given below.

SCOPE

The radiation, industrial hygiene, and industrial safety plan will be prepared for support of all operations at the facilities involved in the D&D Program, as well as for the transfer and handling of irradiated nuclear fuel. The requirements for protective equipment and procedural safeguards will be described, and the limits for radiation and surface and airborne contamination will be established. The methods for disposition of liquid and solid radioactive waste will be described.

RESPONSIBILITY

The Manager, Health, Safety, and Radiation Services (HS&RS) is responsible for establishing standards of safety, examining proposed operations for hazards, determining the safety measures that are necessary, and evaluating the degree of compliance with safety measures, contract safety requirements, licenses, and regulations. Members of the HS&RS staff will prepare the Operational Safety Plan in support of the D&D program, will review all operational procedures documentation, and will provide day-to-day health physics and industrial hygiene and safety surveillance of program activities. They will also review the qualifications of persons assigned to work in the radiologically posted areas and establish that these persons are fully qualified "radiation workers," and that they have sufficient familiarity with the operations in the posted areas to allow them to work safely in these areas.

SECTION VIII

TRAINING PLAN

changed

A separate training plan will be prepared for the D&D Program, "Training Plan for the Decontamination and Disposition of Facilities," PP-704-990-003, which will be submitted to ERDA for information. A brief description of the scope and responsibility is given below.

SCOPE

The Plan describes the training activities to be performed by Atomics International to assure that all employees engaged in D&D activities receive the required radiation and nuclear safety indoctrination, specific facility familiarization, emergency procedure training, and specific training on operation and use of equipment. Formal and informal training is described, as well as attendance and test records requirements.

RESPONSIBILITY

The Training Department is responsible for the formal instruction and orientation of personnel to their particular work duties. A major requirement of Training is to place particular emphasis on safety precautions and procedures necessary for the maximum protection of company employees. Thus, the training function serves as both a formal method of work indoctrination and a means of promoting safe work practices.

SECTION IX

APPENDIX

added

CURRENT ACTIVITY NETWORK SCHEDULES

The Activity Network Schedules for GFY 1976 are presented in Figures 4.1A through 4.3A. Figure 4.1A is the updated overall schedule for the entire D&D Program. Milestones completed in GFY 1975 are shown by solid triangles. Figure 4.2A presents the current schedule for the SRE dismantling activities, including completed milestones for GFY 1975. The Activity Network Schedule for the STIR dismantling is shown in Figure 4.3A.

CURRENT PROGRAM MANAGEMENT ORGANIZATION

The current Atomics International organization charts are presented in Figures 5.0A through 5.6A. Figure 5.0A reflects the change in the Quality Assurance function reporting directly to the President of AI, separate from the Operations function; and the name change for the Fuel and Test Facility Programs. The changes within the Fuel and Test Facilities are shown in Figure 5.1A. These changes reflect new tasks within the Test Facilities and Nuclear Products Programs, with no change in the D&D Program. The changes in Figure 5.2A show Quality Assurance as an independent function, and Facilities and Material moved from Finance and Administration to Operations. There was no change in Figure 5.3A. The details of the change in the Operations Function are shown in Figure 5.4A, where Quality Assurance was deleted and Facilities and Material was added. The deletion of Facilities and Administration from Finance is shown in Figure 5.5A, and the new chart for Quality Assurance is shown in Figure 5.6A.

CURRENT COST ACCOUNTING WORK BREAKDOWN STRUCTURE

The Cost Accounting Work Breakdown Structure is shown in Table 5.1A. The subaccount numbering system has changed to the 20,000 series to indicate the second year of effort. The second digit devotes the specific facility, as set up originally. The last three numbers reflect the task category as before.

DECONTAMINATION & DISPOSITION OF FACILITIES PROGRAM ACTIVITY NETWORK

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SRE DECONTAMINATION & DISPOSITION ACTIVITY NETWORK

LEGEND

- ▽ FORECAST MILESTONES
- ▲ COMPLETED MILESTONES
- ↓ RESTRAINTS
- ▽ ACTIVITY SCHEDULE SUBMITTED
- ▽ DISMANTLING PLAN SUBMITTED
- ▽ SUBCONTRACT AWARD
- * ADDITIONAL MILESTONES, HOLDPOINTS, RESTRAINTS AND ACTIVITY DETAILS WILL BE IDENTIFIED DURING PREPARATION OF DISMANTLING PLANS

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STIR DECONTAMINATION AND DISPOSITION ACTIVITY NETWORK

Rockwell International

Atomsics International Division
North American Aircraft Operations

JULY 1, 1975

APPROVED:

D. D. Myers
D. D. MYERS
PRESIDENT
NORTH AMERICAN AIRCRAFT OPERATIONS

Rockwell International

Atoms International Division

FUEL & TEST FACILITY PROGRAMS

G.W. Meyers

G. W. MEYERS
DIRECTOR

S.F. Iacobellis

APPROVED:

S. F. IACOBELLIS

Figure 5.1 A

JUNE 26, 1975
CHART NO. 8
FUEL & TEST FACILITY PROGRAMS

Figure 5.2 A

Rockwell International

Atomics International Division

RESEARCH AND ENGINEERING

H. C. Wiesebeck

H. C. WIESENECK
DIRECTOR

S. F. Jacobellis

APPROVED

S. F. JACOBELLIS
PRESIDENT

Figure 5.3 A

Rockwell International

Atoms International Division

OPERATIONS

A. C. Crawford
A. C. CRAWFORD
DIRECTOR

S. F. Iacobellis
S. F. IACOBELLIS
PRESIDENT

Rockwell International

Atomics International Division

FINANCE AND ADMINISTRATION

R. G. Jones
R. G. JONES
VICE PRESIDENT & CONTROLLER

APPROVED: *S. F. Iacobellis*
S. F. IACOBELLIS
PRESIDENT

Figure 5.5 A

JANUARY 24, 1975

CHART NO. 2

FINANCE AND ADMINISTRATION

Rockwell International

Atomics International Division

QUALITY ASSURANCE

R. J. McDermott

R. J. McDERMOTT
DIRECTOR

S. F. Jacobellis

APPROVED

S. F. JACOBELLIS
PRESIDENT

Figure 5.6 A

JANUARY 30, 1975
CHART NO. 10
QUALITY ASSURANCE

TABLE 5.1 A

COST ACCOUNTING WORK BREAKDOWN STRUCTURE

GENERAL ACTIVITY CATEGORY (S/A TITLE)	G.O. 07704		G.O. 09070
	SRE	FUEL DCLD	STIR
MANIPULATOR MANUFACTURING	10400	-	-
PRIMARY SODIUM DRAINING	10600	-	-
SAFEGUARDS EQUIPMENT DESIGN	10900	-	-
PROJECT MANAGEMENT	20000	21000	25000
PLANS & DOCUMENTATION	20100	21100	25100
FACILITIES AND INDUSTRIAL ENGINEERING	20200	21200	25200
HSRS/QA	20300	21300	25300
MANUFACTURING SUPPORT	20400	21400	25400
DESIGN & DEVELOP TOOLING & EQUIP.	20500	21500	25500
SRE Tooling - Plasma	20510	-	-
SRE Tooling - Design	20520	-	-
SRE Tooling - Mfg.	20530	-	-
SRE Tooling - Manipulator	20540	-	-
SRE Tooling - Mockup Operations	20550	-	-
SRE Tooling - Documentation	20560	-	-
DECONTAMINATE & DISMANTLE	20600	21600	25600
D&D Primary SRE Piping	20610	-	-
React Residual SRE Sodium	20620	-	-
D&D Support Equipment	20630	-	-
PACKAGE & SHIP RADIOACTIVE WASTE	20700	21700	25700
PHOTOGRAPHIC DOCUMENTATION	20800	21800	25800
PROGRAM MANAGEMENT & SUPPORT	22000	-	22000

Footnote: S/A 13900 - Collect GFY 1975 Hot Cave Costs
S/A 14900 - Collect GFY 1975 KEWB Costs