NRC FORM 464 Part I (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

FOIA/PA	RESPONSE NUMBER
2000-0013	1

RESPONSE TYPE ☑ FINAL ☐ PARTIAL

REQUESTER: Peter Ippolito

DATE: FEB 08 2000

PART I. -- INFORMATION RELEASED

- ☐ No additional agency records subject to the request have been located.
- ☐ Requested records are available through another public distribution program. See Comments section.
- ☐ APPENDICES: Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- ☑ APPENDICES: A,B — Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- ☐ Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.
- ☑ APPENDICES: A,B — Agency records subject to the request are enclosed.
- ☐ Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- ☐ We are continuing to process your request.
- ☐ See Comments.

PART I.A -- FEES

AMOUNT * $ 48.30
* See comments for details

- ☑ You will be billed by NRC for the amount listed.
- ☐ You will receive a refund for the amount listed.
- ☐ None. Minimum fee threshold not met.
- ☐ Fees waived.

PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

- ☐ No agency records subject to the request have been located.
- ☑ Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- ☑ This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

PART I.C COMMENTS (Use attached Comments continuation page if required)

The fees for processing your request are:

1 hr. clerical search @ $18.00 per hr. = $18.00
10 minutes clerical review $18.00 per hr. = $3.00
15 minutes professional review @ $36.93 per hr. = $9.30
Duplication of 90 pages @ $0.20 per page = $18.00

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Carol Ann Reed for Kenneth L. Pugh

NRC FORM 464 Part II (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

FOIA/PA 2000-0013

DATE FEB 08 2000

PART II.A -- APPLICABLE EXEMPTIONS

APPENDICES B

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- ☐ Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- ☐ Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- ☐ Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
  - ☐ Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
  - ☐ Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
  - ☐ 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- ☑ Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
  - ☑ The information is considered to be confidential business (proprietary) information.
  - ☐ The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
  - ☐ The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- ☐ Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
  - ☐ Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
  - ☐ Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
  - ☐ Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- ☐ Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- ☐ Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
  - ☐ (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
  - ☐ (C) Disclosure would constitute an unwarranted invasion of personal privacy.
  - ☐ (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
  - ☐ (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
  - ☐ (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- ☐ OTHER (Specify)

PART II.B -- DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL EDO	SECY	IG
William Kane, Director	**Office of Nuclear Material Safety and Safeguards**	**Appendix B**	☑		

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

APPENDIX A
RECORDS BEING RELEASED IN THEIR ENTIRETY

NO.	DATE	DESCRIPTION/(PAGE COUNT)
1.	9/24/93	Letter to M Cillis, NRC from M Landis, ORISE enclosing Draft Report, Radiological Survey of the General Atomics SVA Facility, San Diego, California (44 pages)

APPENDIX B
RECORDS BEING WITHHELD IN PART

NO.	DATE	DESCRIPTION/(PAGE COUNT)/EXEMPTIONS
1.	3/29/91	Letter to R Bernero, NRC from K Asmussen, General Atomics, Subject: Docket Nos. 50-89, 50-163 and 70-734, License Nos. R-38, R-67 and SNM-696 Respectively; Submittal of Revised Financial Statements re: Financial Assurance for Decommissioning with enclosures (25 pages) EX. 4
2.	3/30/93	Letter to R Bernero, NRC from K Asmussen, General Atomics, Subject: Docket Nos. 50-89, 50-163 and 70-734, License Nos. R-38, R-67 and SNM-696 Respectively; Submittal of Revised Financial Statements re: Financial Assurance for Decommissioning with enclosures (21 pages) EX. 4

September 24, 1993

Mr. Michael Cillis
U. S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

DOCKET # 70-734

SUBJECT: DRAFT REPORT—RADIOLOGICAL SURVEY—SAN DIEGO, CA

Dear Mr. Cillis:

Enclosed are three copies of the subject document for your review and comment. ESSAP will incorporate any comments you may have into the final report.

Sincerely,

Michele R. Landis

Michele R. Landis
Project Manager
Environmental Survey and
Site Assessment Program

MRL:rde

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PMDA, 6E6
File/213

CENTRAL FILE

A11

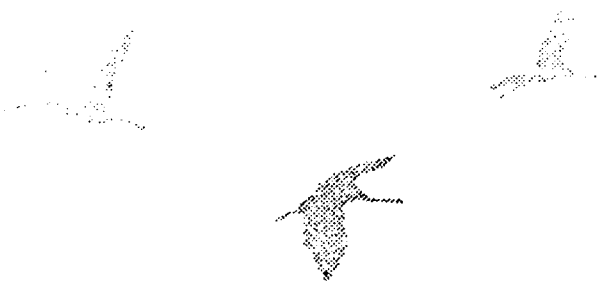
DRAFT REPORT

RADIOLOGICAL SURVEY OF THE GENERAL ATOMICS SVA FACILITY SAN DIEGO, CALIFORNIA

[DOCKET 70-734]

M. R. LANDIS AND M. A. HENKE

Prepared for the
U.S. Nuclear Regulatory Commission
Region V Office



ORISE
OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION
Environmental Survey and Site Assessment Program

RADIOLOGICAL SURVEY OF THE GENERAL ATOMICS SVA FACILITY SAN DIEGO, CALIFORNIA

Prepared by

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Prepared for

U.S. Nuclear Regulatory Commission
Region V Office

Sponsored by the

Office of Nuclear Materials
Safety and Safeguards

September 1993

DRAFT REPORT

This report is based on work performed under an Interagency Agreement (NRC Fin. No. A-9076) between the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy. Oak Ridge Institute for Science and Education performs complementary work under contract number DE-AC-05-76OR00033 with the U.S. Department of Energy.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the significant contributions of the following staff members:

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ABBREVIATIONS and ACRONYMS

ASME	American Society of Mechanical Engineers
CAS	Central Alarm System
cm^2	square centimeter
cpm	counts per minute
DOE	Department of Energy
dpm/100 cm^2	disintegrations per minute/100 square centimeters
EML	Environmental Measurements Laboratory
EPA	Environmental Protection Agency
ESSAP	Environmental Survey and Site Assessment Program
ft	foot
GA	General Atomics
GM	Geiger-Mueller
HEPA	High Efficiency Particulate Air
kg	kilogram
m^2	square meter
MDA	Minimum Detectable Activity
NaI	sodium iodide
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
pCi/g	picocurie per gram
SAS	Secondary Alarm System
SNM	Special Nuclear Material
SVA	Sorrento Valley "A"
ZnS	zinc sulfide

RADIOLOGICAL SURVEY
OF THE
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

INTRODUCTION AND SITE HISTORY

General Atomics (GA) operated the Sorrento Valley "A" (SVA) fuel fabrication facility under U.S. Nuclear Regulatory Commission (NRC) License SNM-696 and State of California Source and Byproduct license 0145-80 beginning in 1959. Activities conducted included:

- Development of fuel fabrication processes,
- Fabrication of new fuel for several reactors and other fuel utilization programs,
- Design of coated particle fuel, and
- Design, construction and qualification of manufacturing equipment.

Radioactive materials used in these manufacturing operations included highly enriched uranium and thorium. Operations resulted in the contamination of process equipment and some internal surfaces of the facility.

Large production processes were discontinued in April of 1985; small fuel fabrication operations and demonstrations continued until 1990. The SVA Decommissioning Plan was submitted to the NRC in April 1990 and revised August 1990. Final NRC approval was given in October 1990. Additionally, changes to the release criteria specified in the plan were requested per GA letter dated April 14, 1992 and approved by NRC letter dated May 1, 1992.[1,2]

Decommissioning activities are being conducted in two phases. Phase I was the decontamination and radiological survey of the facility; Phase II is facility dismantlement, with areas not decontaminated to be disposed of as low-level radioactive waste.

Phase I began about October 1990 and continued to February 1993; the following activities were included:

- Approval of the Plan by the NRC.
- Removal of all equipment and internal structures.
- Packaging of radioactive waste.
- Pre-survey of the facility after removal of flooring, equipment and internal structures (i.e., mezzanines, wallboard, tile).
- Decontamination of accessible surfaces.
- Conducting detailed surveys of the facility surfaces.
- Decontamination of "hot spots" identified during the survey.
- Re-survey of the "hot spots" and identification of all exceptions (locations which could not be decontaminated and/or surveyed and will be disposed of as radiological waste or decontaminated to meet the release guidelines during the dismantlement of the building).
- Application of fixative to selected surfaces to contain/control surface contamination during dismantlement.
- Shipment of radioactive waste to DOE disposal sites.
- Submittal of Phase I report to NRC.

Phase II activities, to be completed upon authorization from the NRC and State of California, will include the following:

- Dismantlement of the building; items identified as exceptions will be disposed of in a controlled manner as contaminated low-level radioactive waste or decontaminated to meet release criteria.
- Clean portions of the building will be disposed of at a nearby landfill.
- Removal of all underground drain lines.
- Soil remediation (as needed).
- Post-remedial action soil sampling, analysis and documentation.
- Submittal of a Phase II (post-dismantlement) report to the NRC summarizing the activities completed in Phase II.
- NRC concurrence that the open land site meets the criteria.
- Removal of the site from GA's NRC and State licenses.

In February 1993, GA submitted the Phase I report to the NRC.[3] The final survey consisted of surface scans for alpha and beta activity, smears for removable activity and exposure rate measurements.

At the request of the NRC Region V Office, the Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) conducted confirmatory activities and additional radiological measurements at the General Atomics SVA Facility. This report describes the procedures and results of those activities.

SITE DESCRIPTION

The SVA facility is located in the north half of Building 37 (SVA facility) in Sorrento Valley at 11222 Flintkote Avenue, San Diego, California. Figure 1 illustrates the location of the GA Sorrento Valley Complex in relation to other GA facilities. Figure 2 illustrates the location of Building 37 (and the north end of Building 37) in relation to other structures at the GA Sorrento Valley complex.

Approximately 3700 m^2 (41,000 ft^2) housed fuel fabrication processing equipment, offices, change rooms, laboratories, storerooms, a machine shop and stockroom. For project control and tracking, the facility was divided into 14 zones which are described below and shown in Figure 3.

- Zone 1 North Tunnel Annex
- Zone 2 China Wall
- Zone 3 CAS (Central Alarm Station)
- Zone 4 West Vault
- Zone 5 Hot Machine Shop (North End) and Stockroom (South End)
- Zone 6 Vault Office and Assay Room
- Zone 7 Soot Filter Pads Located Outside North of Building 37
- Zone 8 Production Floor (Section 1-4)
- Zone 9 North and South Ends of the North Tunnel

- Zone 10 East Mezzanine
- Zone 11 North Annex
- Zone 12 West HEPA Room
- Zone 13 SAS (Secondary Alarm Station)
- Zone 14 Outside Walls of Building

BUILDING CONSTRUCTION

The report facility consists of the following:

- Main Building (zones 1, 2, 6, 8, 9 and 10) - Concrete tilt-up panel construction. The panels are attached to a structural steel framework and rest against the edge and footings of the concrete floor and has a composition roof. A storage tunnel is located under the east edge of the main floor.

- West Vault (Zone 4) - A heavily reinforced concrete storage structure with numerous shield walls forming storage aisles.

- Hot Machine Shop and West HEPA Room Buildings (Zones 5 and 12, respectively) - Consist of metal siding and roofs attached to structural steel framework with concrete floors. These structures abut the main building, west vault and north annex.

- CAS (Zone 3) - A concrete block structure with a cast-in-place roof located within the West HEPA Room Building (Zone 12).

- Soot Filter Pads (Zone 7). Concrete pads located outside and north of Building 37.

- North Annex (Zone 11) - A metal structure similar to those previously described, south wall of which is the north wall of the main building.

- Secondary Alarm System (SAS) (Zone 13) - A reinforced concrete structure consisting of four rooms and two hallways. One of the hallways extends south along the north annex.

The floors consist of about 20 cm of reinforced concrete. Concrete walls are about 18-30 cm thick. Metal walls and roofing are of standard corrugated metal stock.

Composite roofs are metal decking with insulation and tac coverings. The roof of the SVA main building consists of ribbed steel decking topped with a layer of rigid insulation, multiple layers or roofing and a bituminous top dressing. The sheets of metal span supporting roof trusses and purlins to which they are welded. The roof is contaminated. Fixative has been applied to the inside ceiling and trusses to bind the contamination in place and facilitate the safe removal of these portions of the building during dismantlement. The roof will be disposed of as radioactive waste; or, if feasible, portions may be decontaminated.

OBJECTIVES

The objectives of the ESSAP activities were to provide independent document reviews and radiological data, for use by the NRC in evaluating the adequacy of the licensee's radiological status report, relative to established guidelines. This report describes the procedures and results of the survey.

DOCUMENT REVIEW

ESSAP reviewed the licensee's documentation associated with the decommissioning survey.[3-11] Analytical procedures and methods utilized by the licensee and its contractor were reviewed for adequacy and appropriateness. The final-status survey results and supporting data were reviewed for accuracy, completeness, and compliance with guidelines.

PROCEDURES

During the period of April 23-30, 1993, ESSAP performed confirmatory and radiological surveys of the General Atomics SVA Facility. Confirmatory survey activities included surface scans for alpha and beta activity and smears for removable activity. In addition, ESSAP performed measurements for total alpha and beta surface activity; these data are not sufficient to meet the recommendations of NUREG/CR-5849 for final-status surveys, but may be used by the NRC to supplement the licensee's data and assist the NRC in evaluating the radiological status of the facility. The survey was in accordance with a plan submitted to and approved by NRC Region V.[5] The licensee's classification of areas as having low or high potential for contamination was used to develop the ESSAP survey plan. Area and surface classifications are given in Table 1.

SURVEY PROCEDURES

Reference Grid

The reference grid systems established by the licensee were utilized. Individual grid blocks (1 m × 1 m) were identified by their southeast coordinates. Measurement locations on ungridded surfaces were referenced to prominent building features or the existing grid.

Surface Scans

Surface scans for alpha, beta, and gamma activity were performed using large-area gas proportional and NaI scintillation detectors, coupled to ratemeter-scalers with audible indicators. In areas classified as low potential zones, 50 to 100% of the floor surfaces were scanned for alpha, beta, and gamma activity. In high potential zones 50 to 100% of the floor surfaces were scanned for alpha, beta, and gamma activity and 25% of the wall and ceiling surfaces were scanned for alpha and beta activity. Locations of elevated direct radiation, identified by surface scans, were marked for further investigation.

Surface Activity Measurements

Measurements to determine total alpha and total beta surface activity were performed on randomly selected grid blocks. In the gridded areas the measurements were made at the approximate center of the selected grids. The number of direct measurements taken was based on a measurement frequency of 1 per 25 m^2 for high-potential floors, 1 per 100 m^2 for high-potential walls and ceilings, and 1 per 200 m^2 for all low-potential surfaces. Total alpha and total beta measurements were taken at 30 locations on the combined low-potential surfaces and at 225 locations on the combined high-potential surfaces. These measurements were taken using ZnS scintillation and thin-window GM detectors, coupled to ratemeter-scalers. A smear sample for determining removable activity was obtained at each direct measurement location. Direct measurements were also performed at locations of elevated direct radiation identified by the surface scans.

SAMPLE ANALYSIS AND DATA INTERPRETATION

Samples and survey data were returned to the ESSAP laboratory in Oak Ridge, Tennessee, for analyses and interpretation. Smears were analyzed using a low-background alpha/beta counter to determine gross alpha and gross beta activity. Direct measurements and smears were reported in units of dpm/100 cm^2. Additional information concerning major instrumentation, sampling equipment, and analytical procedures is provided in Appendices A and B. Results were compared to the NRC guidelines which are provided in Appendix C.

FINDINGS AND RESULTS

DOCUMENT REVIEW

The decommissioning plan and Phase I reports were reviewed and comments provided.[3,4,6] Concerns raised included the procedure for measurements of total surface activity and the interpretation and application of the thorium surface activity guidelines. The licensee's responses to these comments were also reviewed and comments provided.[7-10]

Surface Scans

Surface scans for alpha, beta, and gamma activity identified seven areas of elevated direct radiation. These areas are listed in Table 2.

Surface Activity Levels

Results of total and removable activity levels, from randomly selected locations are summarized in Table 3. Total activity levels ranged from <69 to 180 dpm/100 cm^2, for alpha, and <740 to 1500 dpm/100 cm^2, for beta. Removable activity levels were less than the minimum detectable activity of the procedure, for alpha, which is <12 dpm/100 cm^2, and ranged from <17 to 25 dpm/100 cm^2, for beta.

Results of total and removable surface activity levels at locations identified by surface scans are summarized in Table 2. Total alpha activity levels ranged from <73 to 5100 dpm/100 cm^2 and total beta activity levels ranged from 1700 to 17,000 dpm/100 cm^2.

COMPARISON OF RESULTS WITH GUIDELINES

Guidelines for acceptable surface contamination levels, used by the NRC to determine whether a facility may be released for unrestricted use, are summarized in Appendix C. The contaminants at the SVA facility were uranium and thorium.

For alpha activity the guidelines established are:

Total Activity

1,000 dpm/100 cm^2, averaged over 1 m^2

3,000 dpm/100 cm^2, maximum in 100 cm^2

Removable Activity

200 dpm/100 cm^2

For beta activity the guidelines established are:

Total Activity

5,000 dpm/100 cm^2, averaged over 1 m^2

15,000 dpm/100 cm^2, maximum in 100 cm^2

Removable Activity

1,000 dpm/100 cm^2

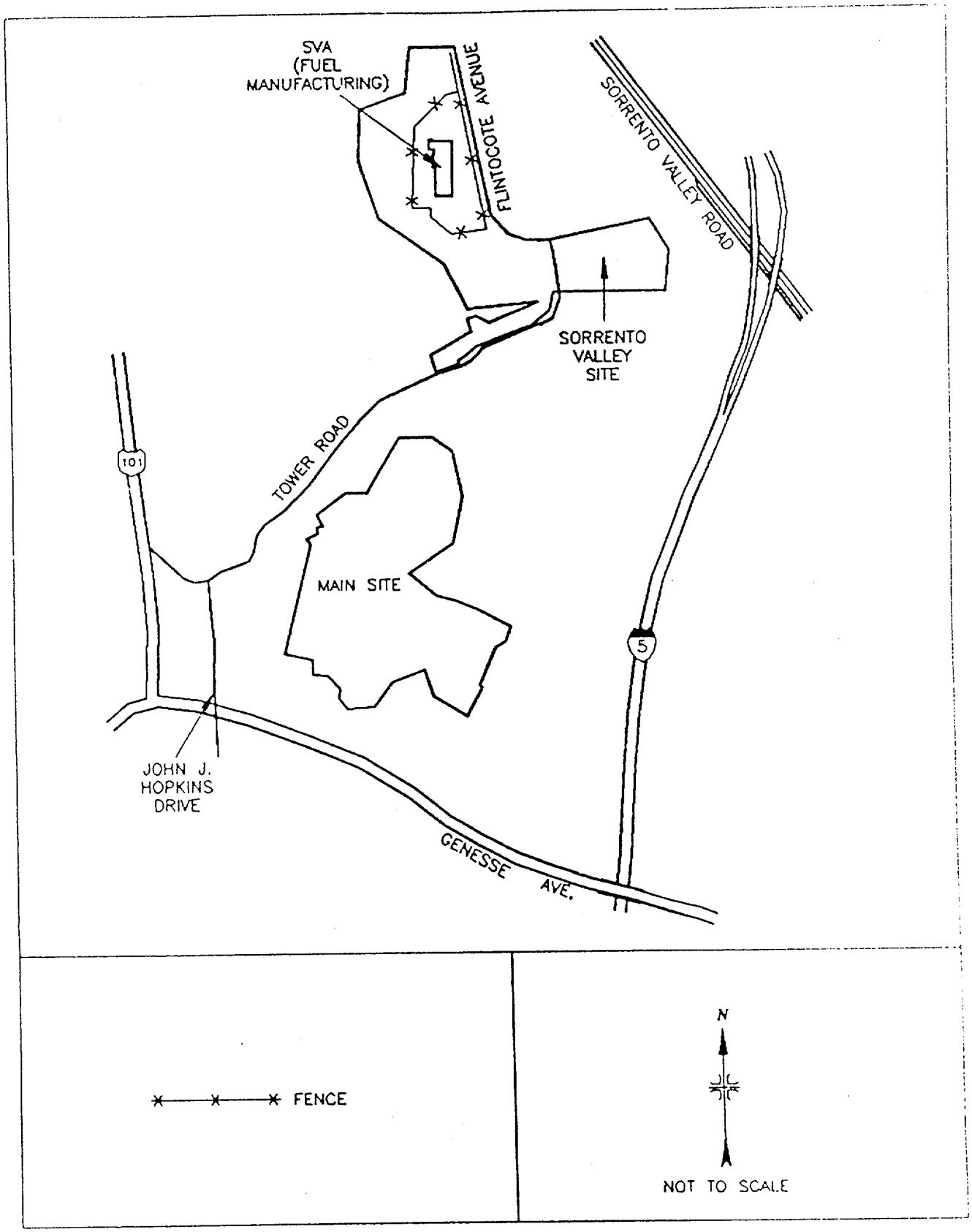
All the measurements performed at randomly selected locations were within the guidelines.

Measurements performed at areas of elevated direct radiation identified by surface scans are in Table 2. In Zone 7, alpha activity on a concrete pad exceeded the maximum allowed in a 100 cm^2 area. In Zone 11, beta activity behind an I-beam exceeded the maximum allowed in a 100 cm^2 area. Both of these areas were remediated and resulting surface activity levels were within the guidelines. At a foundation/wall junction in Zone 7, alpha and beta activity levels were between the average and maximum guideline values. Due to the access limitations at this location which prevented additional measurements, this area was added to the list of exceptions. Alpha and beta activity exceeded the maximums allowed in a 100 cm^2 area on an interior roof in Zone 6. This area was also added to the list of exceptions. Three areas with slightly elevated gamma levels, approximately twice background, were identified in Zone 8. These three areas were added to the list of exceptions.

SUMMARY

In April 1993, ESSAP performed a radiological survey of the General Atomics SVA Facility in San Diego, California. Activities performed included document review, surface scans and

Document reviews raised several concerns regarding guidelines and survey methodology; these concerns were resolved between the NRC and licensee. With exception of the identification of several small areas of residual activity, the results of the ESSAP radiological survey supported the conclusions of the licensees survey, relative to satisfying the guidelines established for this project.


SVA
(FUEL
MANUFACTURING)
FLINTOCOTE AVENUE
SORRENTO VALLEY ROAD
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VALLEY
SITE
TOWER ROAD
101
MAIN SITE
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HOPKINS
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GENESSE AVE.
FENCE
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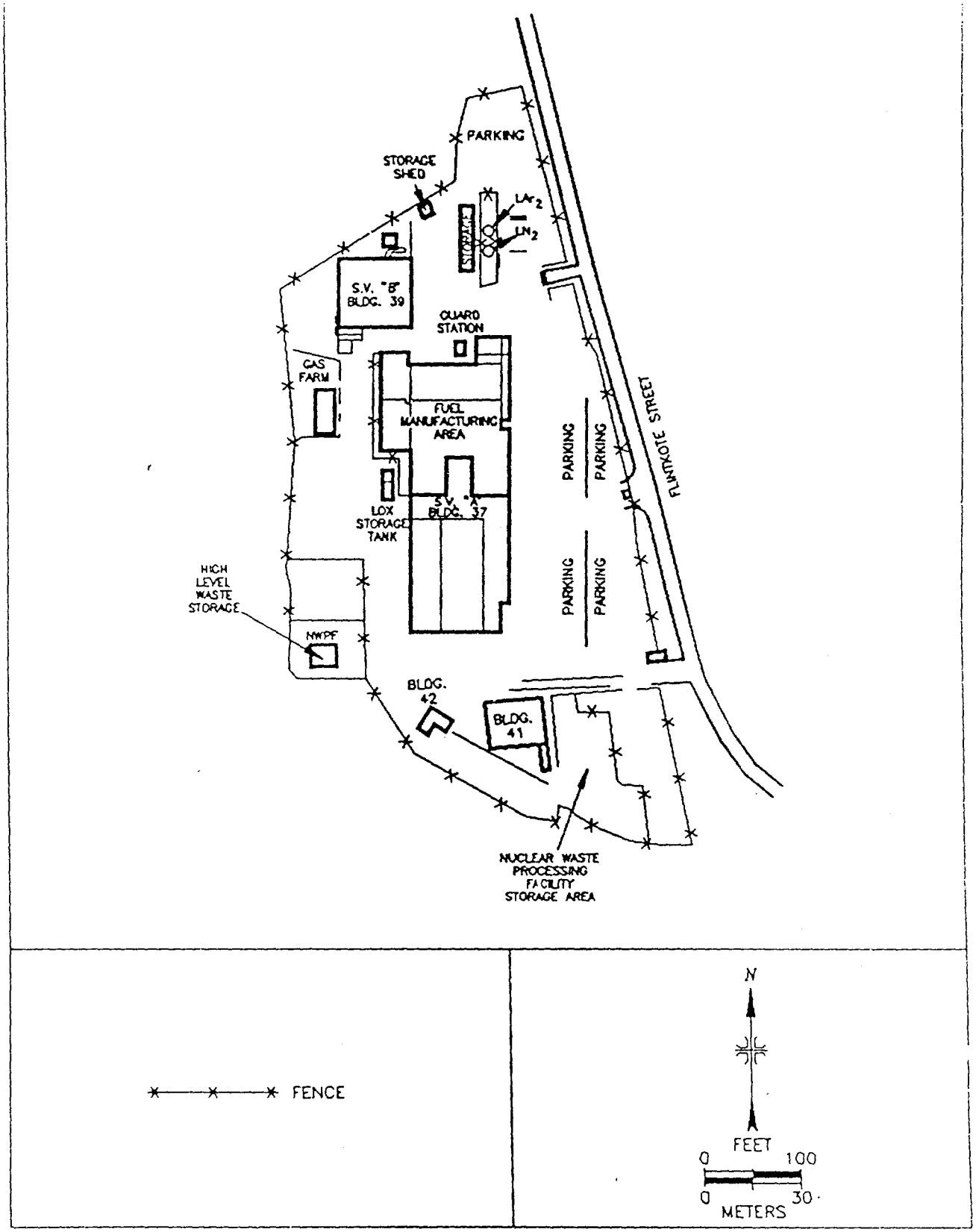


FIGURE 2 Plot Plan of Sorrento Valley Facility, San Diego, California

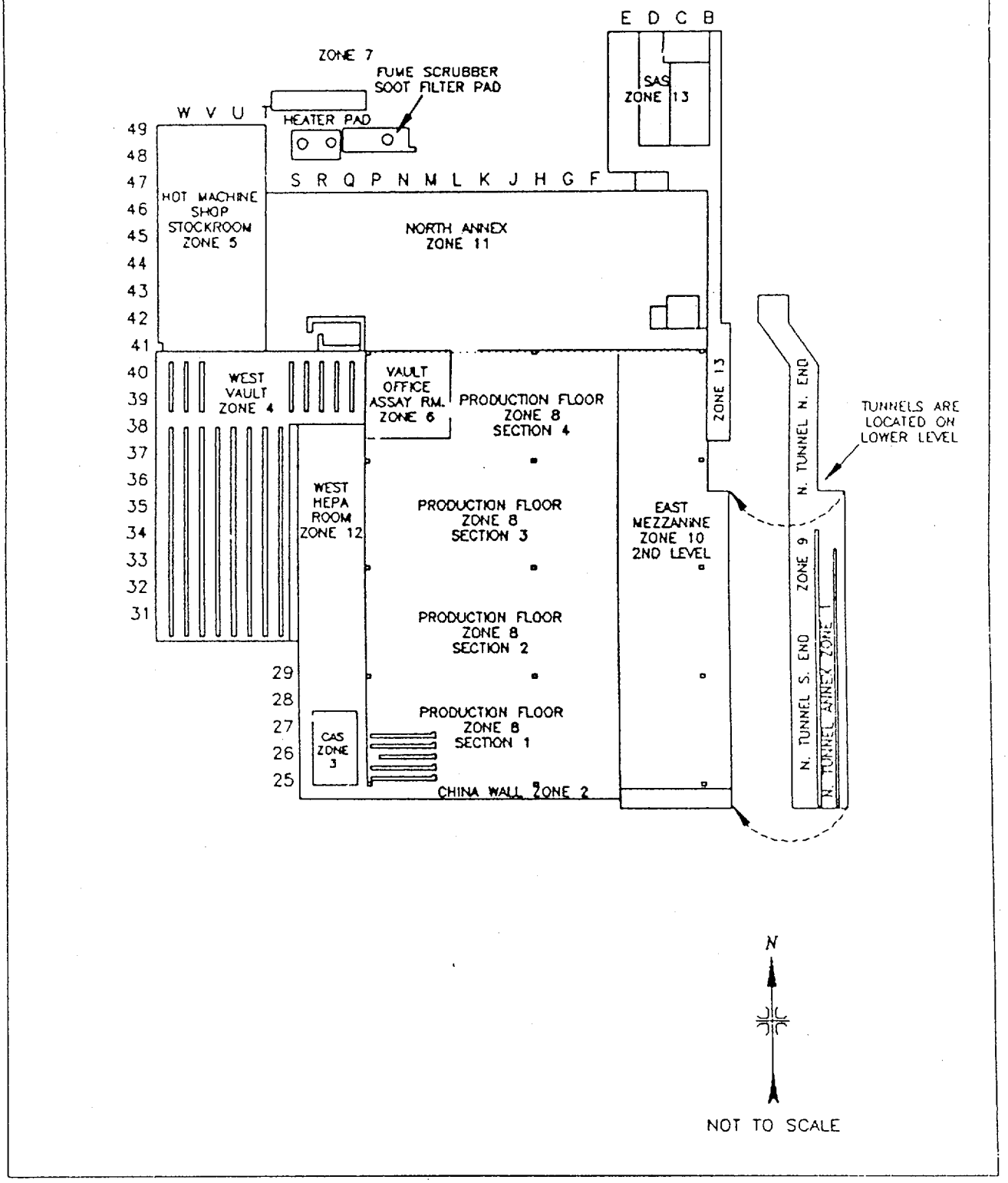
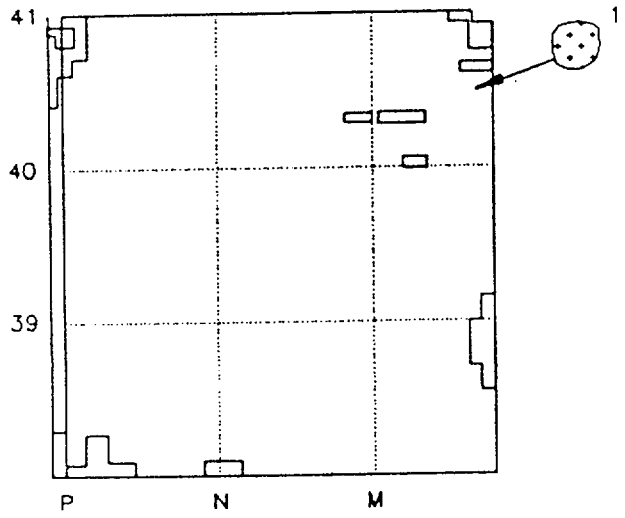


FIGURE 3: SVA Facility Zone Designations



ELEVATED DIRECT RADIATION

NOT TO SCALE

N

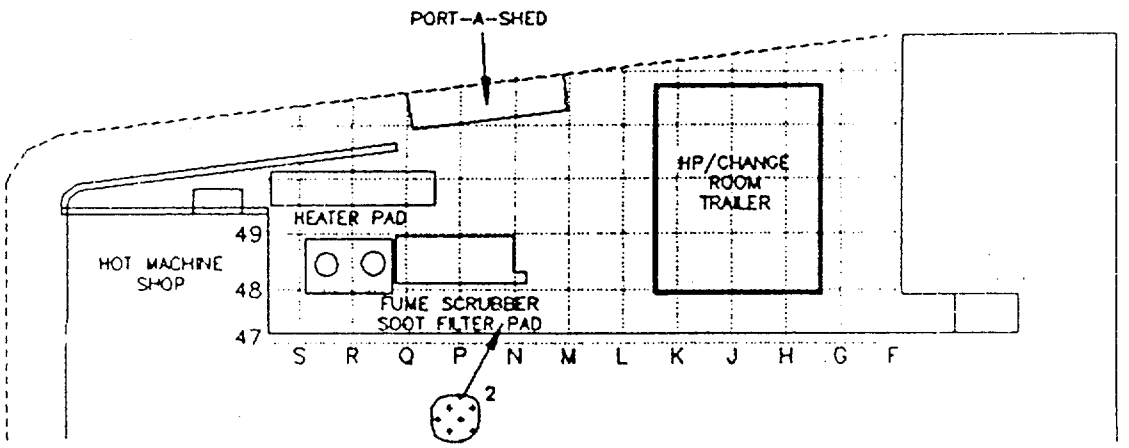
FEET

0 6

0 2

METERS

FIGURE 4: Zone 6 – Location of Elevated Direct Radiation



#ELEVATED DIRECT RADIATION

NOT TO SCALE

N

FEET 0 12

METERS 0 4

FIGURE 5 Zone 7 – Location of Elevated Direct Radiation

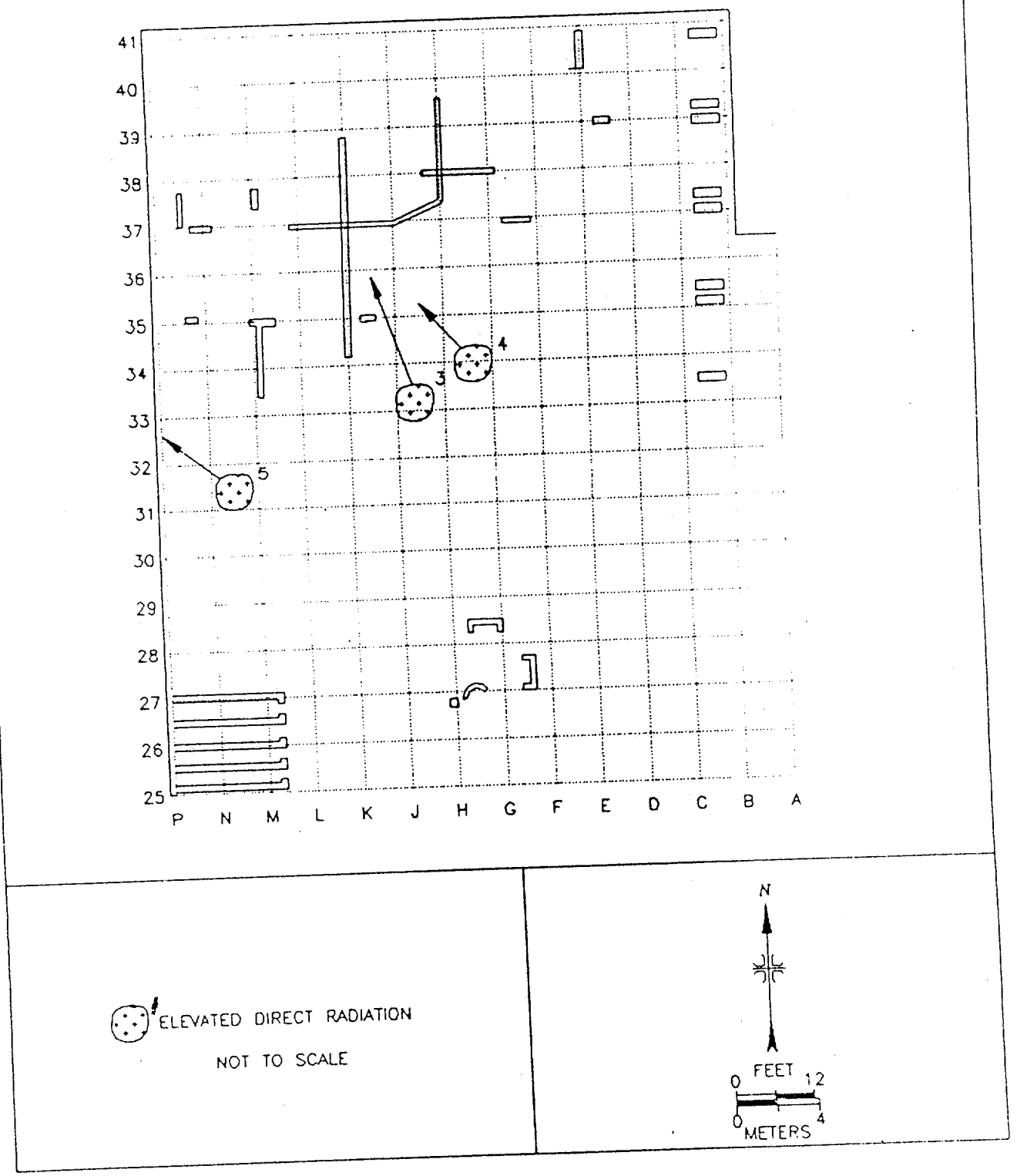
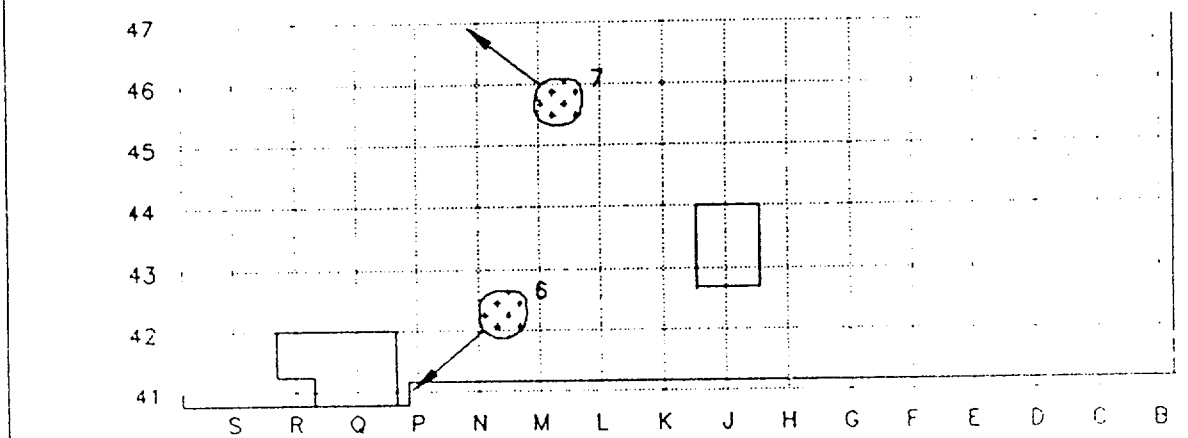


FIGURE 6: Zone 8 – Locations of Elevated Direct Radiation



ELEVATED DIRECT RADIATION

NOT TO SCALE

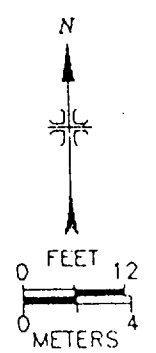


FIGURE 7: Zone 11 – Locations of Elevated Direct Radiation

TABLE 1

AREA AND SURFACE CLASSIFICATIONS
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

Zone	Area	Surface	SVA Classification	Comments
1	North Tunnel Annex	Floor Walls Ceiling	Low Low Low	
2	China Wall	Floor Wall Ceiling-Mezzanine	Low Low Low	Ceiling-Production Floor an Exception
3	Central Alarm Station (CAS)	Floor Walls Ceiling Outside Walls Roof	Low Low Low Low High	
4	West Vault	Floor Walls Ceiling	High High High	
5	Hot Machine Shop/ Stock Room	Floor Walls	Low Low	Corrugated Metal Walls and Ceiling are Exceptions
6	Assay Room	Floor Walls Ceiling Roof Outside Walls	High Low Low Low Low	
7	Heater, Soot Filter and Fume Scrubber Pads	Floor	Low	

TABLE 1 (Continued)

AREA AND SURFACE CLASSIFICATIONS
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

Zone	Area	Surface	SVA Classification	Comments
8	Production Floor Section 1	Floor West Wall East Mezzanine Ceiling South Vault Walls	High Low Low High	East Wall and Ceiling are Exceptions
8	Production Floor Section 2	Floor West Wall East Mezzanine Ceiling	High Low Low	East Wall and Ceiling are Exceptions
8	Production Floor Section 3	Floor West Wall East Mezzanine Ceiling	High Low Low	East Wall and Ceiling are Exceptions
8	Production Floor Section 4	Floor Walls East Mezzanine Ceiling	High Low Low	Ceiling an Exception
9	North Tunnel-North End	Floor Walls Ceiling	High High High	
9	North Tunnel -South End	Floor West Wall East Wall Ceiling	High High Low Low	
10	East Mezzanine	Floor Walls Ceiling	High Low Low	East Wall and West Ceiling are Exceptions

TABLE 1 (Continued)

AREA AND SURFACE CLASSIFICATIONS
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

Zone	Area	Surface	SVA Classification	Comments
11	North Annex	Floor Wall Ceiling	High Low Low	
12	West HEPA Room	Floor Walls	High Low	West Wall and Ceiling are Exceptions
13	SAS Hallway and Four Rooms	Floor Walls Ceiling	Low Low Low	
14	Outside Walls of Building	Walls	Low	

TABLE 2

SUMMARY OF SURFACE ACTIVITY MEASUREMENTS
IN AREAS OF ELEVATED DIRECT RADIATION
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

one	Location[a]		Pre-Remediation		Post-Remediation			
			Total Activity (dpm/100 cm²)		Total Activity (dpm/100 cm²)		Removable Activity (dpm/100 cm²)	
			Alpha	Beta	Alpha	Beta	Alpha	Beta
6	Interior Roof Above Zone 6	1	3500	17000	N/A	N/A	N/A	N/A
7	Outdoor Pad[2]	2	5100	13000	<78	<660	<12	<17
8	Floor[b,c]	3	<73	2900	N/A	N/A	N/A	N/A
8	Floor[b,c]	4	<73	1700	N/A	N/A	N/A	N/A
8	Floor[b,c]	5	85	2400	N/A	N/A	N/A	N/A
11	Behind I-Beam	6	1700	15000	<73	820	<12	<17
11	Foundation[b]	7	2300	12000	N/A	N/A	N/A	N/A

Figures 4-7.
ded to exceptions list.
d elevated gamma direct radiation.

TABLE 3

SUMMARY OF SURFACE ACTIVITY MEASUREMENTS
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

Building 37 North				Range of Total Activity (dpm/100 cm^2)		Range of Removable Activity (dpm/100 cm^2)	
Zone	Surface	Classification	Number of Measurements	Alpha	Beta	Alpha	Beta
#1 North Tunnel Annex	Floor Lower Walls	Low Low	1 1	80 <73	940 810	<12 <12	<17 <17
#2 China Wall	Floor Lower Walls	Low Low	1 1	<73 <73	<740 <740	<12 <12	<17 <17
#3 Central Alarm Station	Floor	Low	1	<73	<740	<12	<17
#4 West Vault	Floor Lower Walls Upper Walls/Ceiling	High High High	18 18 6	<69-100 <69-85 <69	<750-990 <750 <750	<12 <12 <12	<17 <17 <17
#5 Hot Machine Shop	Floor Lower Walls	High Low	14 2	<73-180 <73	<740-1500 <740	<12 <12	<17 <17
#6 Assay Room	Floor Lower Walls	High Low	4 1	<73-140 <73	960-1200 790	<12 <12	<17 <17
#7 Outdoor Concrete Pad	Floor	High	2	<73-90	<740	<12	<17
#8 Production Floor	Floor Lower Walls	High Low	77 2	<73-150 <73	<740-1500 <740	<12 <12	<17-25 <17

TABLE 3 (Continued)

SUMMARY OF SURFACE ACTIVITY MEASUREMENTS
GENERAL ATOMICS SVA FACILITY
SAN DIEGO, CALIFORNIA

Building 37 North				Range of Total Activity (dpm/100 cm^2)		Range of Removable Activity (dpm/100 cm^2)	
Zone	**Surface**	**Classification**	**Number of Measurements**	**Alpha**	**Beta**	**Alpha**	**Beta**
#9 North Tunnel	Floor	High	5	<73-140	920-1100	<12	<17
	Walls	High	4	<73	960-1100	<12	20
	Upper Walls/Ceiling	High	2	<73	<740-1100	<12	<17
	Upper Walls/Ceiling	Low	1	<73	1200	<12	<17
#10 East Mezzanine	Floor	High	24	<73-100	<740-1000	<12	<17-19
	Lower Walls	Low	2	<73	<740	<12	<17
#11 North Annex	Floor	High	38	<69-100	<750-1200	<12	<17
	Lower Walls	Low	6	<69	<750-880	<12	<17
	Upper Walls/Ceiling	Low	3	<69-90	<750-800	<12	<17
#12 West HEPA Room	Floor	High	13	<73-120	<740-100	<12	<17
	Lower Walls	Low	2	<73	<740	<12	<17
#13 SAS and Hallway	Floor	Low	4	<73-80	<740	<12	<17
	Lower Walls	Low	2	<73	<740	<12	<17

REFERENCES

1. Letter from K. E. Asmussen (GA) to J. W. N. Hickey (U.S. NRC, Headquarters), "Decontamination Guidelines for GA's SVA Decommissioning Project," April 14, 1992.

2. Letter from J. W. N. Hickey (U.S. NRC Headquarters) to K. E. Asmussen (GA), May 1, 1992.

3. "SVA Decommissioning Project Phase I (Pre-Dismantlement) Survey Report," General Atomics, February 1993.

4. "SVA Decommissioning Plan," General Atomics, April 1990, revised August 1990.

5. Radiological Survey Plan for the General Atomics SVA Facility, San Diego, California," ORISE/ESSAP, April 22, 1993.

6. Letter from M. R. Landis (ESSAP) to M. Cillis (U.S. NRC, Region V)," Comments on Documentation for the SVA Decommissioning Project at GA Technologies," December 31, 1992.

7. Letter from K. E. Asmussen (GA) to M. Cillis (U.S. NRC, Region V), "Responses to ORISE Comments on GA's SVA Decommissioning Plan," February 10, 1993.

8. Letter from M. R. Landis (ESSAP to M. Cillis (U.S. NRC, Region V), "SVA Decommissioning Project, Phase I (Pre-Dismantlement) Survey Report, General Atomics, February 1993," March 24, 1993.

9. Fax from K. E. Asmussen (GA) to M. R. Landis (ESSAP), "SVA Decommissioning Project Phase I Survey Report and March 29, 1993 Conference Call," March 26, 1993.

10. Fax from K. E. Asmussen (GA) to M. R. Landis (ESSAP)," SVA Decommissioning Project Phase I Survey Reports and April 6, 1993 Conference Call," April 5, 1993.

11. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," U.S. Nuclear Regulatory Commission, August 1987.

APPENDIX A

MAJOR INSTRUMENTATION

APPENDIX A
MAJOR INSTRUMENTATION

The display of a specific product is not to be construed as an endorsement of the product or its manufacturer by the authors or their employers.

DIRECT RADIATION MEASUREMENT

Instruments

Ludlum Ratemeter
Model PRM-12
(Ludlum Measurements, Inc., Sweetwater, TX)

Eberline "Rascal" Ratemeter-Scaler
Model PRS-1
(Eberline, Santa Fe, NM)

Ludlum Floor Monitor
Model 239-1
(Ludlum Measurements, Inc., Sweetwater, TX)

Ludlum Ratemeter-Scaler
Model 2221
(Ludlum Measurements, Inc., Sweetwater, TX)

Detectors

Eberline GM Detector
Model HP-260
Effective Area, 15.5 cm^2
(Eberline, Santa Fe, NM)

Eberline ZnS Scintillation Detector
Model AC-3-7
Effective Area, 59 cm^2
(Eberline, Santa Fe, NM)

Ludlum Gas Proportional Detector
Model 43-37
Effective Area, 550 cm^2
(Ludlum Measurements, Inc., Sweetwater, TX)

Eberline NaI Scintillation Detector
Model SPA-3
5.1 cm x 5.1 cm Crystal
(Eberline, Santa Fe, N.M.)

LABORATORY ANALYTICAL INSTRUMENTATION

Low Background Gas Proportional Counter
Model LB-5110
(Tennelec, Oak Ridge, TN)

APPENDIX B

SURVEY AND ANALYTICAL PROCEDURES

APPENDIX B

SURVEY AND ANALYTICAL PROCEDURES

SURVEY PROCEDURES

Surface Scans

Surface scans were performed by passing the probes slowly over the surface; the distance between the probe and the surface was maintained at a minimum - nominally about 1 cm. A large surface area, gas proportional floor monitor was used to scan the floors of the surveyed areas. Other surfaces were scanned using small area (15.5 cm^2 or 59 cm^2) hand-held detectors. Identification of elevated levels was based on increases in the audible signal from the recording and/or indicating instrument. Combinations of detectors and instruments used for the scans were:

Alpha	-	gas proportional detector with ratemeter-scaler
	-	ZnS scintillation detector with ratemeter-scaler
Beta	-	gas proportional detector with ratemeter-scaler
	-	pancake GM detector with ratemeter-scaler
Gamma	-	NaI scintillation detector with ratemeter

Surface Activity Measurements

Measurements of total alpha and total beta activity levels were performed using ZnS scintillation, and GM detectors coupled to portable ratemeter-scalers. Count rates (cpm), which were integrated over 1 minute in a static position, were converted to activity levels (dpm/100 cm^2) by dividing the net rate by the 4π efficiency and correcting for the active area of the detector. The alpha activity background count rates for the ZnS scintillation detectors averaged approximately 1 cpm for each detector. Alpha efficiency factors ranged from 0.16 to 0.18 for the ZnS

scintillation detectors. The beta activity background count rates for the GM detectors averaged 46 cpm. Beta efficiency factors ranged from 0.29 to 0.32 for the GM detectors. The effective window for the ZnS scintillation and GM detectors were 59 cm^2, and 15.5 cm^2, respectively.

Removable Activity Measurements

Removable activity levels were determined using numbered filter paper disks, 47 mm in diameter. Moderate pressure was applied to the smear, and approximately 100 cm^2 of the surface was wiped. Smears were placed in labeled envelopes with the location and other pertinent information recorded.

ANALYTICAL PROCEDURES

Removable Activity

Smears were counted on a low background gas proportional system to determine gross alpha and gross beta activity.

DETECTION LIMITS

Detection limits, referred to as minimum detectable activity (MDA), were calculated using the following formula:

$$MDA(dpm/100\ cm^2) = \frac{2.71 + (4.66\sqrt{B})}{T \times E \times G}$$

B = background (total counts)
T = count time (min) to be used for field measurements
E = operating efficiency $\left(\frac{\text{counts}}{\text{disintegrations}} \right)$
G = geometry $\left(\frac{\text{detector area } cm^2}{100} \right)$

When the activity was determined to be less than the MDA of the measurement procedure, the result was reported as less than MDA. Because of variations in background levels, measurement efficiencies, and contributions from other radionuclides in samples, the detection limits differ from sample to sample and instrument to instrument.

CALIBRATION AND QUALITY ASSURANCE

Analytical and field survey activities were conducted in accordance with procedures from the following ESSAP documents:

- Survey Procedures Manual, Revision 7 (May 1992)
- Laboratory Procedures Manual, Revision 7 (April 1992)
- Quality Assurance Manual, Revision 5 (May 1992)

The procedures contained in these manuals were developed to meet the requirements of DOE Order 5700.6C and ASME NQA-1 for Quality Assurance and contain measures to assess processes during their performance.

Calibration of all field and laboratory instrumentation was based on standards/sources, traceable to NIST, when such standards/sources were available. In cases where they were not available, standards of an industry-recognized organization were used.

Quality control procedures include:

- Daily instrument background and check-source measurements to confirm that equipment operation is within acceptable statistical fluctuations,
- Participation in EPA and EML laboratory Quality Assurance Programs,
- Training and certification of all individuals performing procedures,
- Periodic internal and external audits.

APPENDIX C

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE OR SPECIAL NUCLEAR MATERIAL

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

U.S. Nuclear Regulatory Commission
Division of Fuel Cycle & Material Safety
Washington, D.C. 20555

August 1987

The instructions in this guide, in conjunction with Table 1, specify the radionuclides and radiation exposure rate limits which should be used in decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table 1 do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control is considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table 1 prior to the application of the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces or premises, equipment, or scrap which are likely to be contaminated, but are such size, construction, or location as to make the surface inaccessible for purposes of measurement, shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to special circumstances such as razing of buildings, transfer from premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment, or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table 1. A copy of the survey report shall be filed with the Division of Fuel Cycle, Medical, Academic, and Commercial Use Safety, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and also the Administrator of the NRC Regional Office having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

a. Identify the premises.

b. Show that reasonable effort has been made to eliminate residual contamination.

c. Describe the scope of the survey and general procedures followed.

d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

TABLE 1
ACCEPTABLE SURFACE CONTAMINATION LEVELS

Nuclides[a]	Average[b,c,f]	Maximum[b,d,f]	Removable[b,e,f]
U-nat, U-235, U-238, and associated decay products	5,000 dpm α/100 cm^2	15,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm^2	300 dpm/100 cm^2	20 dpm/100 cm^2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm^2	3,000 dpm/100 cm^2	200 dpm/100 cm^2
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5,000 dpm $\beta\gamma$/100 cm^2	15,000 dpm $\beta\gamma$/100 cm^2	1,000 dpm $\beta\gamma$/100 cm^2

[a]Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

[b]As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

[c]Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

[d]The maximum contamination level applies to an area of not more than 100 cm^2.

[e]The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

[f]The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/h at 1 cm and 1.0 mrad/h at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

GENERAL ATOMICS

March 29, 1991
38/67-1717

VIA FEDERAL EXPRESS

Mr. Robert M. Bernero, Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Docket Nos. 50-89, 50-163 and 70-734: License Nos. R-38, R-67 and SNM-696 Respectively; Submittal of Revised Financial Statements Re: Financial Assurance for Decommissioning

References:

1) Asmussen, Keith E. letter no. 38/67-1592 to U.S. Nuclear Regulatory Commission ATTN: Mr. Marvin Mendonca, "Docket Nos. 50-89 and 50-163: License Nos. R-38 and R-67; Decommissioning Report and Financial Assurance" dated July 26, 1990.

2) Asmussen, Keith E. letter no. 696-1591 to Mr. Robert M. Bernero, Director NMSS, "Docket No. 70-734: SNM-696; Financial Assurance for Decommissioning", dated July 26, 1990.

Dear Mr. Bernero:

General Atomics (GA) operates two TRIGA research reactors under Nuclear Regulatory Commission (NRC) License Nos. R-38 and R-67. Additionally, GA has facilities licensed under NRC materials license SNM-696. In compliance with 10 CFR 50.33, GA previously submitted financial assurance for the estimated cost of decommissioning its reactors (i.e., $1,200,000) plus an additional $750,000 for decommissioning its facilities licensed under SNM-696 (References 1 and 2). The financial assurance was provided by a parent company guarantee based on the financial test contained in Appendix A of 10 CFR 30. The guarantee included a commitment by the parent guarantor (General Atomics Technologies Corporation) to submit revised financial statements, financial test data, and a special auditor's report and reconciling schedule annually within 90 days of the close of the parent guarantor's fiscal year. Submitted herewith is said information.

P.O. BOX 85608, SAN DIEGO, CA

B11

If you should have any questions regarding this submittal, please contact me at (619) 455-2823.

Very truly yours,

Keith E. Asmussen

Keith E. Asmussen, Manager
Licensing, Safety and Nuclear Compliance

KEA:shs

Enclosures as stated

cc: Mr. John B. Martin, Regional Administrator, U.S. NRC Region V
Mr. Alexander Adams, Jr., NRC/PDNP, NRC Headquarters

Price Waterhouse

Price Waterhouse

GENERAL ATOMICS

REPORT ON AGREED-UPON PROCEDURES

MARCH 29, 1991

Price Waterhouse

March 29, 1991

To the Board of Directors of
General Atomics and the
U.S. Nuclear Regulatory Commission

We have audited, in accordance with generally accepted auditing standards, the consolidated financial statements of General Atomics (the Company) as of and for the year ended December 31, 1990, and have issued our report thereon dated March 26, 1991.

General Atomics has prepared documents to demonstrate its financial responsibility under the Nuclear Regulatory Commission's (NRC) financial assurance regulations, Volume 10 of the Code of Federal Regulations Part 30, Appendix A. This report is furnished solely to assist General Atomics in complying with these regulations and should not be used for any other purpose.

The attached schedule (Exhibit A) reconciles the specified information furnished in the Chief Financial Officer's (CFO) letter (Exhibit B) in response to the regulations with the Company's financial statements. In connection therewith, we have:

1. Read the attached schedule (Exhibit A), and the CFO's letter (Exhibit B);

2. Compared the amounts in the column "Per Financial Statements" in Exhibit A with amounts contained in the Company's consolidated financial statements as of and for the year ended December 31, 1990;

3. Compared the amounts in the column "Per CFO's Letter" in Exhibit A with the letter prepared in response to the NRC's request (Exhibit B);

4. Compared the amount in the column "Reconciling Items" in Exhibit A with analyses prepared by the Company setting forth the indicated item; and

5. Recomputed the totals on Exhibit A.

Because the above procedures do not constitute an examination made in accordance with generally accepted auditing standards, we do not express an opinion on the manner in which the amounts were derived in the items referred to above. In connection with the procedures referred to above, no matters came to our attention that cause us to believe that the amounts set forth in the attached schedule (Exhibit A) and in lines 2 through 9 of the Chief Financial Officer's letter (Exhibit B) should be adjusted.

Price Waterhouse

EXHIBIT A

GENERAL ATOMICS

YEAR ENDED DECEMBER 31, 1990
(Dollar amounts in thousands)

Line No. in CFO's Letter		Per Financial Statements	Reconciling Items	Per CFO's Letter
2	Total current liabilities	[redacted]		
	Long-term debt			
	Other long-term liabilities			
	Deferred income taxes			
	Total liabilities			
3 & 4*	Total assets			
	Less: Total liabilities			
	Total net worth			
5	Current assets			
6	Current liabilities			
8	Net income			
	Depreciation			
	Total net income			

EX. 4

* The Company's assets and liabilities are primarily tangible. There is no significant difference between the Company's net worth and its tangible net worth.

GENERAL ATOMICS

EXHIBIT B

In reply refer to:
301/C21

March 29, 1991

Director, Office of Nuclear Material
Safety and Safeguards
US Nuclear Regulatory Commission
Washington DC 20555

Dear Sir:

I am the Chief Financial Officer of General Atomics, a Corporation. General Atomics is located at 10955 John Jay Hopkins Drive in San Diego, California. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in 10 CFR Parts 50 and 70, for the decommissioning of the following Company-owned facilities:

Name of Facility	Location of Facility	Current Cost Estimate
General Atomics (License SNM-696)	10955 John Jay Hopkins Drive San Diego CA 92121-1194	$ 750,000
TRIGA Reactor Facility (Licenses R-38 and R-67)	(same as above)	$1,200,000

General Atomics is not required to file a Form 10K with the US Securities and Exchange Commission for the latest fiscal year which ends December 31, 1991.

The figures for the following items marked with an asterisk are derived from General Atomics' consolidated, independently audited financial statements for the most recently completed fiscal year--December 31, 1990:

Financial Test: Alternative I
(Dollars in Thousands)

1. Decommissioning cost estimates for facility, Licenses No. SNM-696, R-38, and R-67

*2. Total Liabilities
*3. Tangible Net Worth
*4. Net Worth
*5. Current Assets
*6. Current Liabilities
*7. Net Working Capital (Line 5 minus Line 6)
*8. The sum of Net Income plus Depreciation
*9. Total Assets in United States

EX4

	Yes	No
10. Is line 3 at least $10 million?	[redacted]	
11. Is line 3 at least 6 times line 1?		
12. Is line 7 at least 6 times line 1?		
13. Are at least 90% of Assets located in US?		
14. Is line 9 at least 6 times line 1?		
15. Is line 2 divided by line 4 less than 2.0?		
16. Is line 8 divided by line 2 greater than 0.1?		
17. Is line 5 divided by line 6 greater than 1.5?		

EX 4

I hereby certify that the content of this letter is true and correct to the best of my knowledge.

Sincerely,

Max D Kemp

Max D. Kemp
Sr. Vice President, Finance

Price Waterhouse

GENERAL ATOMICS

(A Wholly Owned Subsidiary of
General Atomic Technologies Corporation)

REPORT AND CONSOLIDATED FINANCIAL STATEMENTS

DECEMBER 31, 1990 AND 1989

Price Waterhouse

March 26, 1991

Report of Independent Accountants

To the Board of Directors and Shareholder of
General Atomics

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations and retained earnings and of cash flows present fairly, in all material respects, the financial position of General Atomics, a wholly owned subsidiary of General Atomic Technologies Corporation, and its subsidiaries at December 31, 1990 and 1989, and the results of their operations and their cash flows for the years then ended in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

Price Waterhouse

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

CONSOLIDATED BALANCE SHEETS
(Dollar amounts in thousands)

	December 31, 1990	1989
ASSETS		
Current assets:		
Cash and cash equivalents		
Accounts receivable, net		
Deferred conversion services		
Inventories		
Current portion of long-term notes receivable		
Prepaid expenses and other current assets		
Total current assets		
Property, plant and equipment, net		
Long-term notes receivable, net of current portion		
Other assets		
LIABILITIES AND STOCKHOLDER'S EQUITY		
Current liabilities:		
Accounts payable and accrued expenses		
Accrued employee compensation and benefits		
Customer advances		
Current portion of long-term debt		
Current portion of capital lease obligation		
Total current liabilities		
Long-term debt, net of current portion		
Other long-term liabilities		
Deferred income taxes		
Commitments and contingencies (Note 10)		
Stockholder's equity:		
Common stock, $5 par value, 100 shares authorized, 20 shares issued and outstanding		
Paid-in capital		
Retained earnings		
Total stockholder's equity		

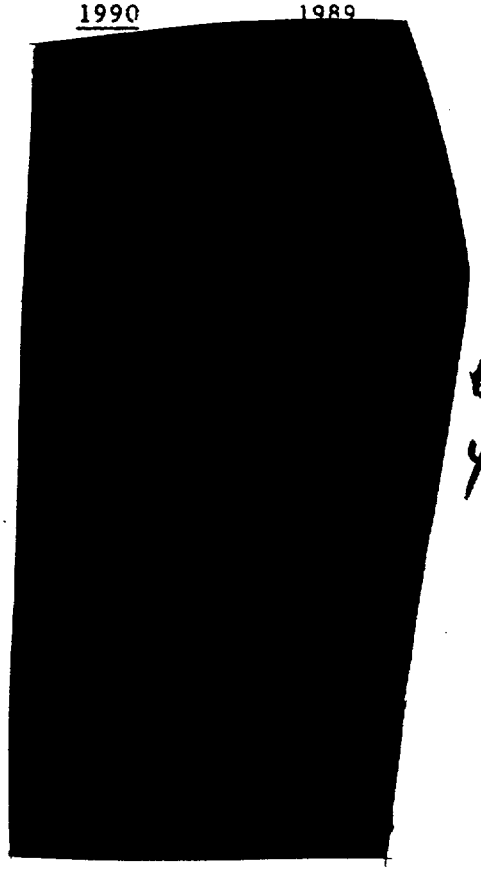
EX 4

The accompanying notes are an integral part of these financial statements.

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

CONSOLIDATED STATEMENTS OF OPERATIONS AND RETAINED EARNINGS
(Dollar amounts in thousands)

	Year ended December 31, 1990	1989
Revenues		
Costs and expenses:		
Cost of revenues		
Selling, general and administrative expenses		
Continuing design, research and development costs		
Interest expense		
Income before income taxes and cumulative effect of accounting change		
Provision for income taxes		
Income before cumulative effect of accounting change		
Cumulative effect of accounting change		
Net income		
Retained earnings at beginning of year		
Retained earnings at end of year		



EX 4

The accompanying notes are an integral part of these financial statements.

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

CONSOLIDATED STATEMENTS OF CASH FLOWS
(Dollar amounts in thousands)

	Year ended December 31, 1990	1989
Cash flows from operating activities:-		
Net income		
Adjustments to reconcile net income to net cash provided by operating activities:		
Gain on disposal of subsidiary		
Depreciation and amortization		
Losses of affiliated companies		
Changes in assets and liabilities net of effects from purchases of subsidiaries:		
(Increase) in accounts receivable		
(Increase) in inventories		
(Increase) in deferred conversion services		
(Increase) decrease in prepaid expenses and other current assets		
(Increase) in other assets		
Increase (decrease) in accounts payable and accrued expenses		
Increase in accrued employee compensation and benefits		
Increase (decrease) in customer advances		
(Decrease) in other long-term liabilities		
Increase in deferred income taxes		
Net cash (used) provided by operating activities		
Cash flows from investing activities:		
Additions to equipment		
Proceeds from disposal of equipment		
Proceeds from sale of subsidiary		
(Reductions in) additions to notes receivable		
Net cash acquired from purchase of subsidiaries		
Net cash used by investing activities		
Cash flows from financing activities:		
Principal payments on long-term debt		
Borrowings, long-term debt		
Principal payments under capital lease		
Net cash provided by financing activities		
Net (decrease) increase in cash and cash equivalents		
Cash and cash equivalents at beginning of year		
Cash and cash equivalents at end of year		
Cash paid during the year for:		
Interest		
Income taxes		

EX 4

The accompanying notes are an integral part of these financial statements.

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

Note 1 - Organization:

General Atomics (the Company) is a wholly owned subsidiary of General Atomic Technologies Corporation (GATC). The Company is involved in research and development, including gas-cooled power reactors, fusion technology, defense materials, and electronics. Services to purify uranium concentrates and convert them to uranium hexafluoride are provided by a subsidiary, Sequoyah Fuels Corporation (with its parents, Sequoyah Fuels International Corporation and Sequoyah Holding Corporation, referred to as Sequoyah). Another subsidiary, CEGA Corp., is designing a Modular Helium Reactor - New Production Reactor for the U.S. Department of Energy.

The consolidated financial statements include the accounts of subsidiaries more than 50 percent owned. All significant intercompany accounts and transactions have been eliminated. Investments in affiliated companies in which the Company has a 20 to 50 percent interest are accounted for using the equity method.

Note 2 - Summary of Significant Accounting Policies:

Cash and cash equivalents. All highly liquid debt instruments purchased with maturities of three months or less are considered to be cash equivalents.

Revenues. A major portion of revenues result from contract services performed for the United States Government under a variety of contracts, some of which provide for reimbursement of cost plus a fixed fee and others which are fixed price. Generally, revenues and fees on contracts are recognized as services are performed. Long-term contracts are accounted for using the percentage-of-completion method, primarily based on contract costs incurred to date compared with total estimated costs at completion. Other revenues are recorded when the products are shipped. Provisions for any anticipated contract losses are recorded by a charge to income during the period in which they are first identified.

Contract costs, including indirect costs, are subject to audit and adjustment by negotiations between the Company and the U.S. Government. Indirect contract costs have been agreed upon through 1983 and for 1985. Government contract revenues have been recorded in amounts which are expected to be realized upon final settlement.

Deferred conversion services. Such costs generally relate to conversion services provided by Sequoyah for uranium which has been processed, but not delivered to the customer's account. Conversion services are deferred at an average per unit cost of providing such services.

Inventories. Inventories are valued at the lower of cost or market. Cost is determined using the average cost method.

Property, plant and equipment. Property, plant and equipment is stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over estimated useful lives of three to thirty years.

Additions to equipment, together with major renewals and betterments, are capitalized. Maintenance, repairs and minor renewals and betterments are charged to expense.

Upon sale or disposal, the cost and related depreciation is removed from the accounts and any resulting gain or loss is included in current income.

Income taxes. The Company and its subsidiaries are included in the consolidated tax returns of GATC. The provision for income taxes has been computed on a "stand-alone" basis. In 1989, the Company implemented the provisions of Statement of Financial Accounting Standards No. 96 (SFAS No. 96), "Accounting for Income Taxes," which changed the criteria for measuring the provisions for income taxes and recognizing deferred tax assets and liabilities on the balance sheet. SFAS No. 96 requires that all deferred tax balances be determined by using the tax rate expected to be in effect when the taxes will actually be paid or refunds received.

The cumulative effect of applying SFAS No. 96 to years prior to 1989 is included as a cumulative effect of change in accounting method in the consolidated statement of operations for the year ended December 31, 1989. The effect of adoption on 1989 operations was to increase earnings by approximately $[redacted]. The adoption of SFAS No. 96 has no impact on cash flow.

EX 4

Note 3 - Acquisitions:

On November 7, 1990, the Company acquired the remaining outstanding shares of CEGA Corp. (CEGA), previously a 50 percent owned affiliate, for $[redacted] in cash. The acquisition has been accounted for as a purchase and the estimated fair value of net assets acquired is equal to the purchase price. The operating results of CEGA for the period from November 7, 1990 to December 31, 1990 are included in the consolidated statements of operations and retained earnings for the year ended December 31, 1990.

EX 4

Note 4 - Sale of Subsidiary Stock:

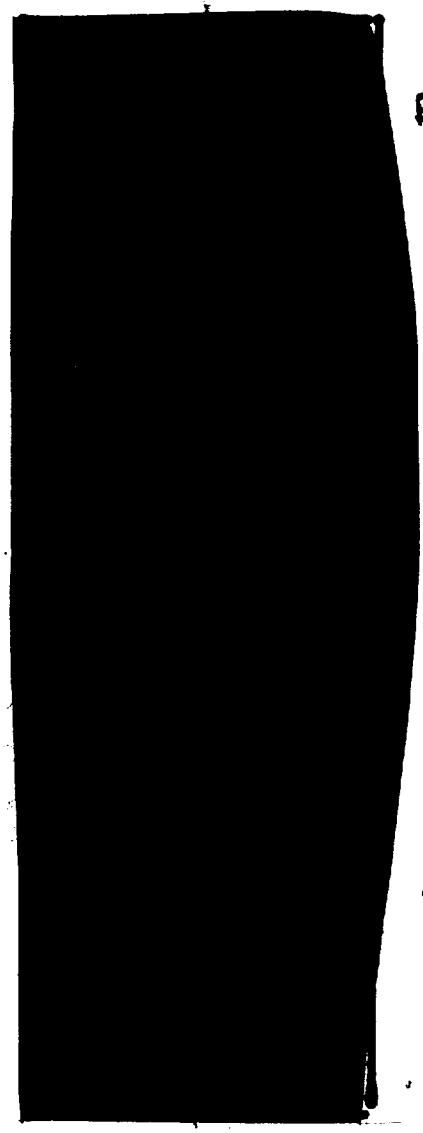
On April 20, 1990, the Company sold 51 percent of the outstanding shares of its wholly owned subsidiary, Applied SuperConetics, Inc. (ASC) to Toshiba Corporation, a Japanese corporation, for $[redacted] in cash. The resulting gain of $[redacted] is included in current year revenues. The agreement provides for, among other things, contractual arrangements for certain services to be provided by the Company to ASC.

EX 4

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

Note 5 - Composition of Certain Balance Sheet Accounts:



EX 4

	December 31, 1990	1989
Accounts receivable, net:		
Billed accounts receivable		
Unbilled amounts (net of progress payments of [redacted] and [redacted] in 1990 and 1989, respectively)		
Less allowance for doubtful accounts		
Inventories:		
Work-in-process		
Raw materials and supplies		
Less progress payments received		
Prepaid expenses and other current assets:		
Prepaid expenses and other current assets		
Prepaid income taxes		
Property, plant and equipment:		
Land		
Plant and equipment		
Construction in progress		
Less accumulated depreciation and amortization		

Included in the above amounts are $[redacted] and $[redacted] of assets acquired under capital leases net of accumulated amortization of $[redacted] and $[redacted] at December 31, 1990 and 1989, respectively.

EX 4

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

	December 31, 1990	December 31, 1989
Long-term notes receivable:		
Affiliates and entities under common ownership with GATC, interest from 7 to 10 percent	[redacted]	
Other		
Less reserve for potentially uncollectable notes		
Less current portion		
Accrued employee compensation and benefits:		
Salaries, bonuses, and amounts withheld		
Accrued vacation		
Accrued contributions to employee benefit plans		
Other long-term liabilities:		
Decommission and reclamation		
Accrued pension cost		
Accrued rent expense		
Capital lease obligation		
Other		

EX 4

Note 6 - Line of Credit and Long-Term Debt:

	December 31, 1990	December 31, 1989
Note due Kerr-McGee Corporation, bearing interest at varying rates (8.5 percent and 9.2 percent at December 31, 1990 and 1989, respectively) with interest only payable through February 4, 1993, and then principal and interest payable in quarterly installments of $[redacted] through November 4, 1997, $[redacted] of which is secured by property, plant and equipment and conversion and storage contracts	[redacted]	

EX 4

GENERAL ATOMICS
(A Wholly Owned Subsidiary of General Atomic Technologies Corporation)

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

	December 31, 1990	1989
Borrowings under [redacted] Revolving Line of Credit ([redacted] committed and [redacted] uncommitted) bearing interest at varying rates (11 percent at December 31, 1990)		
Ten percent non-recourse mortgage loan due Prudential Insurance Company of America, on December 31, 1998. Interest only payable through December 31, 1993, and then principal of [redacted] and interest payable annually and secured by certain land and buildings		
Borrowings under [redacted] Line of Credit due April 30, 1991 and bearing interest at London Interbank Offered Rate plus 1.1 percent at December 31, 1990		
Balloon Note due Chevron USA on October 1, 1991, bearing interest at 8.68 percent payable quarterly		
Other long-term debt		
Less current portion		

[redacted]

At December 31, 1990, Sequoyah had drawn $10,750 against a Revolving Line of Credit (the Line). The Line is made up of a [redacted] committed line of credit expiring December 31, 1992 and a [redacted] uncommitted line of credit expiring January 31, 1991. Sequoyah has used part of the committed portion of the Line as a [redacted] Letter of Credit, leaving [redacted] available on the Line at December 31, 1990. Borrowings under the Line are secured by accounts receivable, a portion of the conversion services contracts, and inventory of materials and supplies. In conjunction with the Line, Sequoyah must maintain specific levels of working capital, tangible net worth, special financial ratios and stockholder's equity. The agreement also limits capital expenditures, cash dividends, payments to GA for services rendered and changes to Sequoyah's common stock. The Line bears interest at a varying rate which was 11 percent at December 31, 1990. Sequoyah pays a commitment fee of one-half percent of unused committed credit.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

EX4

The Company has a Credit and Security Agreement with Citibank, N.A. which provides for a [redacted] Revolving Commitment of which [redacted] in irrevocable letters of credit are outstanding at December 31, 1990. The agreement, which expires June 30, 1992, provides for extension at the Company's request; however, Citibank, N.A. may convert the outstanding balance to a three-year term loan. In conjunction with the agreement the Company must maintain specified levels of working capital, tangible net worth, special financial ratios, stockholder's equity, and comply with other provisions of the Credit and Security Agreement. The agreement also limits capital expenditures, cash dividends and changes to the Company's common stock. The Company pays a commitment fee of one-half percent of the unused credit.

The minimum amounts of long-term debt maturing in each of the five years after December 31, 1990 are as follows:

Year ending December 31,	
1991	[redacted]
1992	
1993	
1994	
1995	
Thereafter	

EX4

Note 7 - Income Taxes:

The provision for income taxes is summarized as follows:

	Year ended December 31, 1990	1989
Currently payable:		
Federal	[redacted]	
State		
Deferred:		
Federal		
State		
Benefit of capital loss carryforward		

EX4

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

The statutory federal income tax rate is reconciled to the effective tax rate as follows:

	Year ended December 31, 1990	1989
Statutory federal income tax rate	34.0%	34.0%
State income taxes, net of federal income tax benefit		
Expenses not deductible for tax purposes		
Benefit of capital loss carryforward		
Change in amount of net deduction for which tax benefit cannot be ascribed		
Other		
Effective income tax rate		

[redacted] EX 4

The deferred portion of the provision for income taxes for the year ended December 31, 1990 relates to temporary differences between the recognition for book and tax purposes of long-term contracts, contributions to defined contribution plan, accrued vacation, pension costs, decommission and reclamation, deferred conversion services, and depreciation.

At December 31, 1990, the Company has a federal capital loss carryforward of approximately $[redacted] which may be carried forward to offset future capital gains and expires in 1994. For financial statement purposes, the Company has not recognized pre-tax future deductible temporary differences of $[redacted] EX 4

Note 8 - Employee Benefits:

The Company and its subsidiaries have a defined benefit plan covering substantially all employees. The Company's funding policy is to contribute annually the lesser of the maximum amount that can be deducted for government cost accounting purposes or federal income tax purposes.

On May 11, 1990, seventeen of Sequoyah's plan participants accepted an early retirement offer. They were paid a total of $[redacted] of which [redacted] was attributable to the cost of enhanced benefits. This [redacted] is in addition to the 1990 periodic pension cost described below. EX 4

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

The following analysis sets forth the plan's funded status and amounts recognized in the consolidated financial statements.

	December 31, 1990	1989
Actuarial present value of benefit obligations:		
Vested benefit obligation		
Accumulated benefit obligation		
Actuarial present value of projected benefit obligation		
Plan assets at fair value, primarily long-term U.S. Government bonds and United States and foreign high-grade corporate bonds		
Plan assets in excess of projected benefit obligation		
Items not yet recognized in the financial statements:		
Prior service cost being amortized in proportion to the expected future service of active employees expected to receive benefits		
Net asset at January 1, 1986 being amortized over 15 years		
Net loss (gain) from experience different from that assumed		
Accrued pension cost		
Assumptions		
Weighted average discount rate		
Rate of increase in future compensation levels		
Expected long-term rate of return on assets		

[redacted]

EX 4

Net periodic pension cost includes the following components:

	Year ended December 31, 1990	1989
Service cost-benefits earned during the period		
Interest cost on projected benefit obligation		
Actual return on plan assets		
Net amortization and deferral		
Net periodic pension cost		

[redacted]

EX 4

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

In addition to providing pension benefits, the Company and certain subsidiaries currently offer health care and life insurance benefits for active and qualified retired employees. These benefits are provided through an insurance company whose premiums are based on the benefits paid during the year or through a local Health Maintenance Organization whose premiums are community rated. The cost of providing those benefits is recognized by expensing the annual insurance premiums, which were [redacted] and [redacted] in 1990 and 1989, respectively, for active and retired employees. The cost of providing benefits for the 703 retirees is not separated from the cost of providing benefits for the 1,182 active employees. EXY

In December 1990, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 106, "Employers' Accounting for Postretirement Benefits Other Than Pensions" (SFAS 106), which requires companies to estimate postretirement benefits other than pensions and to recognize the net periodic postretirement benefit cost as employees render services necessary to earn the postretirement benefits. Adoption of SFAS 106 by the Company is currently required no later than 1993, and earlier adoption is permitted. The Company intends to adopt SFAS 106 in 1993. Upon adoption, the Company may recognize the resulting transition obligation immediately or amortize it over the plan participants' future service periods or 20 years. Due to the complexities of calculations required by SFAS 106, the effect on the Company financial statements is unknown nor can be reasonably estimated at this time.

Note 9 - Transactions with Related Parties:

The Company has notes receivable from affiliated companies and entities under common ownership with GATC. These notes bear interest at 7 to 10 percent and have terms from one to five years. The principal balances outstanding are [redacted] and [redacted] at December 31, 1990 and 1989, respectively. EXY

The Company leases land, buildings and improvements, primarily under 15-year terms, from entities under common ownership with GATC. Total rent paid to these entities amounted to [redacted] and [redacted] for the years ended December 31, 1990 and 1989, respectively.

The Company provides certain accounting and administrative services to affiliated companies and entities under common ownership with GATC. Total amounts billed for services provided by the Company aggregated [redacted] and [redacted] in 1990 and 1989, respectively. The Company recorded subcontract revenues of [redacted] from an affiliated company. EXY

The Company is a guarantor of a loan of an entity under common ownership with GATC as described in Note 10.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollar amounts in thousands)

Note 10 - Commitments and Contingencies:

The Company and its subsidiaries lease their real property, certain computers and other equipment primarily under operating leases. Some of the leases contain escalation clauses, renewal and purchase options and include lease terms from 1990 through 2001. The approximate future minimum commitments for all leases as of December 31, 1990 are as follows:

Year ending December 31,	Operating Leases: Facilities	Operating Leases: Equipment	Operating Leases: Total	Capital Lease
1991	[redacted]			
1992				
1993				
1994				
1995				
Thereafter				
Less amounts representing interest				
Total				

Rent expense incurred under operating leases amounted to [redacted] and [redacted] for the years ended December 31, 1990 and 1989, respectively.

A capital lease obligation of [redacted] was incurred when the Company entered into a lease for new computer equipment during 1989.

The Company is entitled to future rental income of [redacted] under noncancellable subleases and has received [redacted] from sublease agreements during 1990.

The Company is a guarantor of a loan between certain entities under common ownership with GATC and Citicorp Real Estate, Inc. of which [redacted] is outstanding at December 31, 1990. The guaranty requires that the Company meet certain covenants specified in the agreement.

Various claims and legal proceedings, arising in the course of business, seeking monetary damages and other relief are pending. The amount of the liability, if any, from all claims and actions cannot be determined with certainty; but in the opinion of management, the ultimate liability for all pending legal proceedings and asserted legal claims should not materially adversely affect the consolidated financial position of the Company at December 31, 1990.

GENERAL ATOMICS

March 30, 1993
696-2051

VIA FEDERAL EXPRESS

Mr. Robert M. Bernero, Director
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: **Docket Nos. 50-89, 50-163 and 70-734: License Nos. R-38, R-67 and SNM-696 Respectively; Submittal of Revised Financial Statements Re: Financial Assurance for Decommissioning**

Reference: 1) Asmussen, Keith E., Letter No. 38/67-1884 to U.S. Nuclear Regulatory Commission ATTN: Mr. Marvin Mendonca, "Docket Nos. 50-89 and 50-163: License Nos. R-38 and R-67; Decommissioning Report and Financial Assurance" dated July 26, 1990.

2) Asmussen, Keith E., Letter No. 696-1963 to Mr. John W. N. Hickey, U.S. Nuclear Regulatory Commission, "Docket No. 70-734; License No. SNM-696; Submittal of Decommissioning Funding Plan," dated September 10, 1992.

Dear Mr. Bernero:

General Atomics (GA) operates two TRIGA research reactors under Nuclear Regulatory Commission (NRC) License Nos. R-38 and R-67, and conducts operations involving the use of special nuclear material under NRC License No. SNM-696. In compliance with 10 CFR Parts 50.33 and .70.25, GA previously submitted financial assurance for the estimated cost of decommissioning its reactors and its SNM-696 licensed facilities (Refs. 1 & 2). The financial assurance was provided by a parent company guarantee based on the financial test contained in Appendix A of 10 CFR 30. The guarantee included a commitment by the parent guarantor (General Atomic Technologies Corporation) to submit revised financial statements, financial test data, and a special auditor's report and reconciling schedule annually within 90 days of the close of the parent guarantor's fiscal year. Submitted herewith is said information for 1992.

If you should have any questions regarding this submittal, please contact me at (619) 455-2823.

Very truly yours,

Keith E. Asmussen

Keith E. Asmussen, Director
Licensing, Safety and Nuclear Compliance

KEA:shs

Enclosures as stated

cc: Mr. John B. Martin, Regional Administrator, U.S. NRC Region V
Mr. Alexander Adams, Jr., NRC/PDNP, NRC Headquarters
Mr. Robert Wilson, NRC Headquarters (w/o enclosures)

B12

GENERAL ATOMICS

REPORT ON AGREED-UPON PROCEDURES

MARCH 26, 1993

750 B Street, Suite 2600
San Diego, CA 92101

Price Waterhouse

March 26, 1993

To the Board of Directors of
General Atomics and
U.S. Nuclear Regulatory Commission

We have audited, in accordance with generally accepted auditing standards, the consolidated financial statements of General Atomics (the Company) as of and for the year ended December 31, 1992, and have issued our report thereon dated March 26, 1993.

General Atomics has prepared documents to demonstrate its financial responsibility under the Nuclear Regulatory Commission's (NRC) financial assurance regulations, Volume 10 of the Code of Federal Regulations Part 30, Appendix A. This report is furnished solely to assist General Atomics in complying with these regulations and should not be used for any other purpose.

The attached schedule (Exhibit A) reconciles the specified information furnished in the Chief Financial Officer's (CFO) letter (Exhibit B) in response to the regulations with the Company's financial statements. In connection therewith, we have:

1. Read the attached schedule (Exhibit A), and the CFO's letter (Exhibit B);

2. Compared the amounts in the column "Per Financial Statements" in Exhibit A with amounts contained in the Company's consolidated financial statements as of and for the year ended December 31, 1992;

3. Compared the amounts in the column "Per Financial Statements" in Exhibit A with the letter prepared in response to the NRC's request (Exhibit B); and

4. Recomputed the totals on Exhibit A.

Because the above procedures do not constitute an examination made in accordance with generally accepted auditing standards, we do not express an opinion on the manner in which the amounts were derived in the items referred to above. In connection with the procedures referred to above, no matters came to our attention that cause us to believe that the amounts set forth in the attached schedule (Exhibit A) and in lines 2 through 9 of the Chief Financial Officer's letter (Exhibit B) should be adjusted.

Price Waterhouse

EXHIBIT A

GENERAL ATOMICS

YEAR ENDED DECEMBER 31, 1992
(Dollar amounts in thousands)

Line No. in CFO's Letter		Per Financial Statements
2	Total current liabilities	$ [redacted]
	Long-term debt	
	Other long-term liabilities	
	Deferred income taxes	
	Total liabilities	$
3 & 4*	Total assets	
	Less: Total liabilities	
	Total net worth	$
5	Current assets	$
6	Current liabilities	$
8	Net income	$
	Depreciation	
	Total net income plus depreciation	$

Ex 4

* The Company's assets and liabilities are primarily tangible. There is no significant difference between the Company's net worth and its tangible net worth.

EXHIBIT P

In reply refer to:
266/141

March 26, 1993

Director, Office of Nuclear Material
Safety and Safeguards
US Nuclear Regulatory Commission
Washington DC 20555

Dear Sir:

I am the Chief Financial Officer of General Atomics, a Corporation. General Atomics is located at 3550 General Atomics Court in San Diego, California. This letter is in support of this firm's use of the financial test to demonstrate financial assurance, as specified in 10 CFR Parts 50 and 70, for the decommissioning of the following Company-owned facilities:

Name of Facility	Location of Facility	Current Cost Estimate
General Atomics (License SNM-696)	3550 General Atomics Court San Diego CA 92121-1194	$ 3,740,000
TRIGA Reactor Facility (Licenses R-38 and R-67)	(same as above)	$ 145,000

The Current Cost Estimate is our best estimate of the net cost to General Atomics for decommissioning.

General Atomics is not required to file a Form 10K with the US Securities and Exchange Commission for the latest fiscal year which ends December 31, 1993.

The figures for the following items marked with an asterisk are derived from General Atomics' consolidated, independently audited financial statements for the most recently completed fiscal year--December 31, 1992:

EX 4

Financial Test: Alternative I
Dollars in Thousands

1.	Decommissioning cost estimates for facility, Licenses No. SNM-696, R-38, and R-67	$ [redacted]
*2.	Total Liabilities	$
*3.	Tangible Net Worth	$
*4.	Net Worth	$
*5.	Current Assets	$
*6.	Current Liabilities	$
*7.	Net Working Capital (Line 5 minus Line 6)	$
*8.	The sum of Net Income plus Depreciation	$
*9.	Total Assets in United States	$

		Yes	No
10.	Is line 3 at least $10 million?	[redacted]	
11.	Is line 3 at least 6 times line 1?		
12.	Is line 7 at least 6 times line 1?		
13.	Are at least 90% of Assets located in US?		
14.	Is line 9 at least 6 times line 1?		
15.	Is line 2 divided by line 4 less than 2.0?		
16.	Is line 8 divided by line 2 greater than 0.1?		
17.	Is line 5 divided by line 6 greater than 1.5?		

I hereby certify that the content of this letter is true and correct to the best of my knowledge.

Sincerely,

Max D. Kemp
Sr. Vice President, Finance

General Atomics

(A Wholly-Owned Subsidiary of
General Atomic Technologies Corporation)
Report and Consolidated Financial Statements
December 31, 1992 and 1991

Price Waterhouse

Report of Independent Accountants

March 26, 1993

To the Board of Directors and Shareholder of
General Atomics

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of operations and retained earnings and of cash flows present fairly, in all material respects, the financial position of General Atomics, a wholly-owned subsidiary of General Atomic Technologies Corporation, and its subsidiaries at December 31, 1992 and 1991, and the results of their operations and their cash flows for the years then ended in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.

Price Waterhouse

General Atomics

(A Wholly Owned Subsidiary of [illegible] Technologies Corporation)

Consolidated Balance Sheet

(Dollar amounts in thousands except per share amount)

	December 31, 1992	1991
Assets		
Current assets:		
Cash and cash equivalents		
Accounts receivable, net		
Deferred conversion services		
Inventories		
Current portion of notes receivable		
Prepaid expenses and other current assets		
Total current assets		
Property, plant and equipment, net		
Notes receivable, net of current portion		
Other assets		
Liabilities and Stockholder's Equity		
Current liabilities:		
Accounts payable and accrued expenses		
Accrued employee compensation and benefits		
Deferred income taxes		
Customer advances		
Current portion of long-term debt		
Current portion of capital lease obligation		
Payable to related party		
Total current liabilities		
Long-term debt, net of current portion		
Other long-term liabilities		
Deferred income taxes		
Commitments and contingencies (Note 10)		
Stockholder's equity:		
Common stock, $5 par value, 100 shares authorized, 20 shares issued and outstanding		
Paid-in capital		
Retained earnings		
Total stockholder's equity		

EX4

The accompanying notes are an integral part of these financial statements.

General Atomics

(A wholly-owned subsidiary of [redacted] Technologies Corporation)

Consolidated Statement of Operations and Retained Earnings

(Dollar amounts in thousands)

	Year ended December 31, 1992	1991
Revenues		
Gain on sale of option		
Cost and expenses:		
Cost of revenues		
Selling, general and administrative expenses		
Continuing design, research and development costs		
Interest expense		
(Loss) income before provision for income taxes and cumulative effect of an accounting change		
Benefit (provision) for income taxes		
Net income before cumulative effect of an accounting change		
Cumulative effect of an accounting change (Note 2)		
Net income		
Retained earnings at beginning of year		
Distribution of subsidiaries to parent (Note 9)		
Retained earnings at end of year		

EX4

The accompanying notes are an integral part of these financial statements.

General Atomics

[illegible] Technologies Corporation

Consolidated Statement of Cash Flows

(Dollar amounts in thousands)

	Year ended December 31, 1992	1991
Cash flows from operating activities:		
Net income	$	[redacted]
Adjustments to reconcile net income to net cash provided by operating activities:		
Loss on disposal of equipment		
Depreciation and amortization		
Loss (income) of affiliated companies		
Net effect of loss on investments		
Changes in assets and liabilities net of effects from purchases and distributions of subsidiaries:		
Decrease in accounts receivable		
Decrease (increase) in inventories		
Decrease in deferred conversion		
(Increase) in prepaid expenses and other current assets		
Decrease (increase) in other assets		
(Decrease) in accounts payable and accrued expenses		
(Decrease) increase in accrued employee compensation and benefits		
Increase in customer advances		
(Decrease) in other long-term liabilities		
(Decrease) increase in deferred income taxes		
(Increase) in receivable to related party		
Net cash provided by operating activities		
Cash flows from investing activities:		
Additions to equipment		
Proceeds from sale of equipment		
(Additions to) reductions in notes receivable		
Additions to equity investments		
Payment for acquisition of uranium assets		
Net cash used in investing activities		
Cash flows from financing activities:		
Principal payments on long-term debt		
Principal payments under capital lease		
Net cash used in financing activities		
Net (decrease) increase in cash and cash equivalents		
Cash and cash equivalents at beginning of year		
Cash and cash equivalents at end of year		
Supplemental disclosures:		
Cash paid during the year for:		
Interest		
Income taxes		
Liabilities assumed in conjunction with acquisition of uranium assets		
Distribution of subsidiaries to parent		

EX 4

The accompanying notes are an integral part of these financial statements.

NOTE 1 - ORGANIZATION

General Atomics is a wholly-owned subsidiary of General Atomic Technologies Corporation (GATC). General Atomics and its subsidiaries (collectively referred to as the Company) are involved in research and development activities related to gas-cooled power reactors, fusion technology, defense materials, and electronics. The Company also provides services to purify uranium concentrates and convert them to uranium hexafluoride.

The consolidated financial statements include the accounts of subsidiaries more than 50 percent owned. All significant intercompany accounts and transactions have been eliminated. Investments in affiliated companies in which the Company has a 20 to 50 percent interest are accounted for using the equity method.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash and cash equivalents

All highly liquid debt instruments purchased with original maturities of three months or less are considered to be cash equivalents.

Revenues

A major portion of revenues result from contract services performed for the United States Government under a variety of contracts, some of which provide for reimbursement of cost plus a fixed fee and others which are fixed price. Generally, revenues and fees on these contracts are recognized as services are performed. Long-term contracts are accounted for using the percentage-of-completion method, primarily based on contract costs incurred to date compared with total estimated costs at completion. Other revenues are recorded when the products are shipped. Provisions for any anticipated contract losses are recorded by a charge to income during the period in which they are first identified.

Revenue from the sale of uranium concentrates is recognized upon delivery of the product to the customer. Conversion service revenue is recognized upon delivery of the uranium hexafluoride to the customer's account at either the United States Department of Energy or the Company's storage facility. Customers are primarily United States domestic utilities and those foreign utilities with United States Department of Energy enrichment services contracts. On November 23, 1992, the Company's Sequoyah Fuels Corporation (SFC) subsidiary entered into a Standby Agreement with ConverDyn (Note 3). Under the terms of the agreement, SFC has placed its Gore facilities in a standby mode and revenues are now generated by ConverDyn in accordance with the agreement.

Contract costs, including indirect costs, are subject to audit and adjustment by negotiations between the Company and the U.S. Government. Indirect contract costs have been agreed upon through 1989 except for 1984 and 1986. Government contract revenues have been recorded in amounts which are expected to be realized upon final settlement.

Deferred conversion services

Deferred conversion costs generally relate to conversion services provided for uranium which has been processed, but not delivered to the customer's account. Conversion services are deferred at the lesser of average per unit cost of providing such services or amounts realizable under conversion contracts.

Inventories

Inventories are valued at the lower of cost or market. Cost is determined using the average cost method.

Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over estimated useful lives of three to thirty years.

Additions to equipment, together with major renewals and betterments, are capitalized. Maintenance, repairs and minor renewals and betterments are charged to expense.

Upon sale or disposal, the cost and related depreciation is removed from the accounts and any resulting gain or loss is included in current income.

Income taxes

The Company and its subsidiaries are included in the consolidated tax returns of GATC. The provision for income taxes has been computed on a stand-alone basis utilizing the provisions of Statement of Financial Accounting Standards (SFAS) No. 109, Accounting for Income Taxes, which the Company adopted prospectively on January 1, 1992. Current income tax expense or benefit represents the amount of income taxes expected to be payable or refundable for the current year. A deferred income tax liability or asset, net of valuation allowance, is established for the expected future consequences resulting from the differences between the financial reporting and income tax bases of assets and liabilities and from net operating loss and credit carryforwards. Deferred income tax expense or benefit represents the net change during the year in the deferred income tax liability or asset.

The cumulative effect of applying the standard to years prior to 1992 is included as a cumulative effect of change in accounting method in the consolidated statement of operations for the year ended December 31, 1992. The effect of adopting the standard on 1992 operations was not significant.

Prior to 1992, the Company accounted for income taxes on a stand-alone basis using the asset and liability approach that gave no recognition to future events other than the recovery of assets and settlement of liabilities at their carrying amounts under the provisions of SFAS No. 96.

Reclassification

Certain 1991 amounts have been reclassified to conform with the 1992 financial statement presentation.

NOTE 3 - REGULATORY AND RELATED MATTERS

In September 1991, SFC ceased operations for regular annual maintenance of its facility. On October 3, 1991, the Nuclear Regulatory Commission (NRC) ordered the Company not to restart operations until the NRC gave specific permission to do so. On April 24, 1992, the Company received permission from the NRC to begin a phased restart of its operations. During 1992, the Company resumed operations; however, in November 1992, the plant experienced an incident in its UF6 processing unit and halted operations.

On November 23, 1992, General Atomics Energy Services, Inc. (GAES) and Allied-Signal Energy Services, Inc. (ASES) formed a partnership named ConverDyn (the Partnership), a Delaware general partnership. The purpose of the partnership is to provide UF6 conversion and other services to public utilities and other customers. Concurrently, SFC entered into the Standby Agreement with ConverDyn.

Under the terms of the [redacted] SFC agreed to cease providing UF6 conversion and related services for its customers and, for compensation by the Partnership, placed its Gore, Oklahoma facilities in a standby mode. SFC shall determine, at its sole discretion, how to maintain its facilities under the standby mode. The Partnership has agreed to provide conversion services for SFC so SFC can meet contractual obligations to current customers.

NOTE 4 - ACQUISITIONS

On August 1, 1991, through its wholly-owned subsidiary, Rio Grande Resources Corporation, the company acquired uranium and materials inventories ([redacted] property ([redacted] and mining and milling plant and equipment [redacted], and assumed reclamation liabilities ([redacted] from Chevron Resources Inc., for [redacted] cash. The acquisition has been accounted for as a purchase and accordingly the purchase price has been allocated to assets acquired and liabilities assumed.

EX 4

NOTE 5 - COMPOSITION OF CERTAIN BALANCE SHEET ACCOUNTS

	December 31, 1992	1991
Accounts receivable, net:		
Billed accounts receivable	$	
Unbilled amounts (including retention of [redacted] and [redacted] and net of progress payments of [redacted] and [redacted] in 1992 and 1991, respectively)		
Inventories:		
Work-in-process	$	
Raw materials and supplies		
Finished goods		
Less progress payments received	$	
Prepaid expenses and other current assets:		
Prepaid expenses and other current assets	$	
Taxes receivable		
Current portion of deferred income taxes		
Deposit		

EX 4

The deposit of [redacted] relates to funds on deposit to support letters of credit of a subsidiary.

EX 4

(Dollar amounts in thousands)

	December 31, 1992	1991
Property, plant and equipment:		
Land		
Plant and equipment		
Construction in progress		
Less accumulated depreciation and amortization		

Included in the above amounts are [redacted] and [redacted] of assets acquired under capital leases net of accumulated amortization of [redacted] and [redacted] at December 31, 1992 and 1991, respectively.

	December 31, 1992	1991
Notes receivable:		
Affiliates and entities under common ownership with GATC, interest from 6 to 10.2 percent		
Other		
Less current portion		
Accrued employee compensation and benefits:		
Salaries, bonuses, and amounts withheld		
Accrued vacation		
Accrued contributions to employee benefit plans		
Other long-term liabilities:		
Accrued rent expense		
Capital lease obligation		
Decommission and reclamation		

(Dollar amounts in thousands)

NOTE 6 - LONG-TERM DEBT

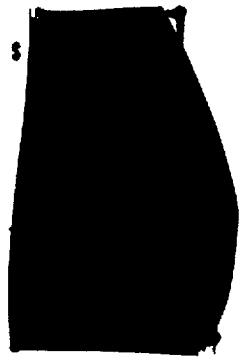
	December 31, 1992	1991
Note due Kerr-McGee Corporation, bearing interest at varying rates (3.45 percent and 5.75 percent at December 31, 1992 and 1991, respectively) and due November 2002, [redacted] of which is secured by property, plant and equipment		
Ten percent non-recourse loan due Prudential Insurance Company of America, on December 31, 1998. Interest at 10 percent only payable through December 31, 1993, and then principal of [redacted] and interest payable annually and secured by certain land and buildings		
Non-interest bearing note due General Atomics International Services Corporation		
Borrowings under revolving lines of credit		
Other long-term debt		
Less current portion		
	$ [redacted]	$

The Company and its subsidiaries have agreements with banks which provide for revolving lines of credit of [redacted] of which [redacted] has been used to support irrevocable letters of credit at December 31, 1992. A balance of [redacted] was outstanding at December 31, 1991. The lines bear interest at varying rates, which were 4.8 to 6.5 percent at December 31, 1992 and expire at various times from April 30, 1993 to February 28, 1995; however, the lines may, upon the Company's request, be extended at each bank's discretion. Some of the lines are secured by portions of the Company's accounts receivable and inventories. In conjunction with the agreements, the Company and its subsidiaries must maintain specified levels of working capital, tangible net worth, bank required financial ratios, and stockholder's equity, and comply with other provisions of the agreements. The agreements limit capital expenditures, cash dividends, payments by subsidiaries to GA for services rendered, and changes to the borrowing entity's common stock. Some lines require a commitment fee of up to three-quarters percent of the unused credit.

(Dollar amounts in thousands)

The minimum amounts of long-term debt maturing in each of the five years after December 31, 1992 are as follows:

Year ending December 31.	
1993	$
1994	
1995	
1996	
1997	
Thereafter	

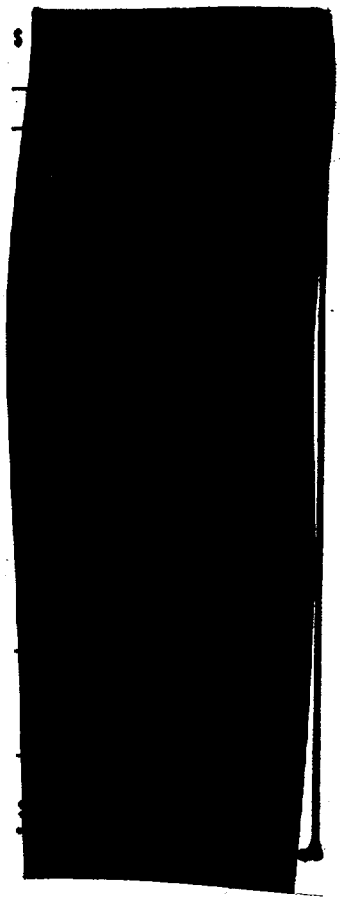


EX 4

NOTE 7 - INCOME TAXES

The benefit (provision) for income taxes is summarized as follows:

	Year ended December 31, 1992	1991
Current benefit (expense):		
Federal	$	
State		
Deferred benefit (expense):		
Federal		
State		
Benefit of loss carryforward		
Total benefit (provision)		



The net deferred tax liability is comprised of the following at December 31, 1992:

Gross deferred tax assets	
Gross deferred tax liabilities	
Gross deferred asset valuation allowance	
Net deferred tax liability	

EX 4

The deferred portion of the provision for income taxes relates to temporary differences between the recognition for book and tax purposes of long-term contracts, accrued vacation, pension costs, decommission and reclamation, deferred conversion services, and depreciation.

The effective tax rate varies from the statutory tax rate principally due to utilization of capital loss carryforwards, non-deductible losses and expenses, and changes in the valuation allowance and estimated taxes.

At December 31, 1992, the Company has a federal capital loss carryforward of approximately $[redacted] which may be used to offset future federal capital gains and expires beginning in 1994. The Company also has Oklahoma and California State net operating loss carryforwards of approximately $[redacted] and $[redacted] which expire beginning in 2004, respectively.

EX 4

NOTE 8 - EMPLOYEE BENEFITS

The Company and its subsidiaries have a defined benefit plan covering substantially all employees. The Company's funding policy is to contribute annually the lesser of the maximum amount that can be deducted for government cost accounting purposes or federal income tax purposes.

The following analysis sets forth the plan's funded status and amounts recognized in the consolidated financial statements.

	December 31, 1992	1991
Actuarial present value of benefit obligations:		
Vested benefit obligation	$	
Accumulated benefit obligation	$	
Actuarial present value of projected benefit obligation	$	
Plan assets at fair value, primarily long-term U.S. and foreign Government bonds and high-grade corporate bonds		
Plan assets in excess of projected benefit obligation		
Items not yet recognized in the financial statements:		
Prior service cost being amortized in proportion to the expected future service of active employees expected to receive benefits		
Net assets at January 1, 1986 being amortized over 15 years		
Net gain from experience different from that assumed		
Accrued pension cost	$	
Assumptions		
Weighted average discount rate		
Rate of increase in future compensation levels		
Expected long-term rate of return on assets		

EX 4

(Dollar amounts in thousands)

Net periodic pension cost includes the following components:

	Year ended December 31, 1992	1991
Service cost	$ [redacted]	
Interest cost		
Actual return on plan assets		
Net amortization and deferral		
Net periodic pension cost	$	

EX 4

The Company also sponsors a defined contribution plan covering substantially all of its employees. Employer contributions are determined as a percentage of each participating employee's contributions and totaled [redacted] and [redacted] in 1992 and 1991, respectively.

EX 4

In addition to providing pension benefits, the Company currently offers health care and life insurance benefits for active and qualified retired employees. These benefits are provided through an insurance company whose premiums are based on the benefits paid during the year or through a local health maintenance organization whose premiums are community rated. The cost of providing those benefits is recognized by expensing the annual insurance premiums, which were [redacted] and [redacted] in 1992 and 1991, respectively, for active and retired employees. The cost of providing benefits for the 637 retirees is not separated from the cost of providing benefits for the 1,250 active employees.

EX

In December 1990, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions, which requires companies to estimate postretirement benefits other than pensions and to recognize the net periodic postretirement benefit cost as employees render services necessary to earn the postretirement benefits. The Company intends to adopt SFAS 106 in 1993. Upon adoption, the Company may recognize the resulting transition obligation immediately or amortize it over the plan participants' future service periods or 20 years. Due to the complexities of calculations required by SFAS 106, the effect on the Company's financial statement is unknown and cannot be reasonably estimated at this time.

NOTE 9 - TRANSACTIONS WITH RELATED PARTIES

EX 4

[redacted]

The Company has notes receivable from affiliated companies and entities under common ownership with GATC. These notes bear interest at 6 to 10.2 percent and have terms of up to five years. The principal balances outstanding are [redacted] and [redacted] at December 31, 1992 and 1991, respectively.

EX

(Dollar amounts in thousands)

The Company leases [illegible] primarily under 15-year terms from entities under common ownership with GATC. Total rent paid to these entities amounted to [redacted] and [redacted] for the years ended December 31, 1992 and 1991, respectively. EX 4

The Company provides certain accounting and administrative services to affiliated companies and entities under common ownership with GATC. Total amounts billed for services provided by the Company aggregated [redacted] in 1992 and 1991, respectively.

The Company is a guarantor of a loan of an entity under common ownership with GATC as described in Note 10.

During the year the Company entered into a contract with a company affiliated through common ownership with GA to provide services with a value of [redacted]. Advance payments, and revenue of [redacted] and [redacted] respectively, are included in the 1992 financial statements. EX 4

NOTE 10 - COMMITMENTS AND CONTINGENCIES

The Company and its subsidiaries lease their real property, certain computers and other equipment primarily under operating leases. Some of the leases contain escalation clauses, renewal and purchase options and include lease terms expiring through 2001. The approximate future minimum commitments for all leases as of December 31, 1992 are as follows:

Year ending December 31,	Operating Leases Facilities	Operating Leases Equipment	Operating Leases Total	Capital Lease
1993	[redacted]			
1994				
1995				
1996				
1997				
Thereafter				
Less amounts representing interest				
Total				

EX 4

Rent expenses incurred under operating leases amounted to [redacted] and [redacted] for the years ended December 31, 1992 and 1991, respectively. EX 4

The Company is entitled to future rental income of [redacted] under noncancellable subleases and received [redacted] from sublease agreements during 1992 and 1991, respectively.

The Company has guaranteed payment of interest in excess of certain specified limits on a [redacted] Revolving Credit Facility of a company under common ownership with GATC. The Company has also indemnified the lender of this credit facility for environmental requirements as specified in the agreement. EX 4

EX 4

[illegible] Consolidated [illegible] Statements
(Dollar amounts in thousands)

[redacted]

Various claims and legal proceedings, arising in the course of business, seeking monetary damages and other relief are pending. The amount of the liability, if any, from all claims, actions and regulatory matters cannot be determined with certainty; but in the opinion of management, the ultimate liability for all pending legal proceedings, asserted legal claims and regulatory matters should not materially adversely affect the consolidated financial position of the Company at December 31, 1992.