GENERAL ATOMICS

70-734

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VIA EXPRESS MAIL SERVICE

Mr. Charles E. Gaskin
Licensing Section 1 / Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: **Docket No. 70-734; SNM-696; Submittal of Revised Section 4 of Part II "Specifications Volume" of SNM-696 (TAC No. L30809)**

References:
(1) Asmussen, Keith E. Letter No. 696-2589 to Charles E. Gaskin, dated June 14, 1996: "Submittal of Revised Sections 2 and 6, "Authorized Activities" and "Environmental Monitoring Program," respectively, of Part II "Specifications Volume" of SNM-696 - (TAC NO. L30809)"

(2) Asmussen, Keith E. Letter No. 696-2602 to Charles E. Gaskin, dated July 19, 1996: "Submittal of Revised Sections 1, 3, 5, 7, 8 of Part II "Specifications Volume" of SNM-696 - (TAC NO. L30809)"

Dear Mr. Gaskin:

In the above referenced letters, General Atomics (GA) submitted revised Sections 1, 2, 3, 5, 6, 7, and 8 of Part II - License Specifications of GA's SNM-696 materials license.

GA has now completed its revisions to, and has enclosed, Section 4 "Radiological Safety" of its Part II - License Specifications of SNM-696. Section 9 contains references dealing with safeguards amendments issued by the NRC. GA understands that Section 9 will be revised by the NRC. With this submittal of the revised Section 4, GA has submitted all sections which comprise the Part II Specifications Volume in support of license renewal.

Details regarding the significant changes made to the section are described in Enclosure 2, which also provides the reasons/justifications for the changes. GA trusts that you will find the revisions to these sections appropriate based on GA's permanent cessation of principal activities and requested possession only license amendment.

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If you have any questions regarding the above, please do not hesitate to contact me at (619) 455-2823 or Laura Quintana at (619) 455-2758.

Very truly yours,

Keith E. Asmussen

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

Enclosures:

1) Revised Section 4: Radiological Safety
2) Descriptions and reasons/justifications for changes to section 4.

cc: Mr. Leonard J. Callan, Regional Administrator, U.S. NRC Region IV
Mr. Kenneth E. Perkins, Jr., Office Mgr., NRC Region IV, WC Field Office

ENCLOSURE 1

4. RADIOLOGICAL SAFETY

4.1 PERSONNEL EXPOSURE CONTROL

4.1.1 Restricted Access

Access to restricted areas shall be controlled for purposes of radiation safety. Posting of areas within a restricted area shall be in compliance with 10 CFR Part 20.

4.1.2 Work Places

4.1.2.1 Storage

Storage requirements are based on radiological and criticality considerations. All storage areas shall be in approved restricted areas with access control. Storage of SNM shall be in approved containers identifying the quantity of material contained in each package. Criticality limits and other controls required to ensure criticality safety will be imposed. All storage areas shall be locked while unattended and properly posted to maintain radiological and criticality safety.

4.1.2.2 Encapsulated SNM or SNM in a form not likely to become airborne

Encapsulated SNM or SNM in a form not likely to become airborne shall be handled as follows:

1. The work surfaces shall be smooth and impermeable.
2. Personnel shall wear appropriate distinctively marked protective clothing, as needed.
3. The radioactive material shall be stored in appropriate and properly labeled containment when not in use.
4. A periodic monitoring program shall be maintained to detect surface contamination, unusual sources of radiation, and airborne radioactivity (see section 4.1.4).

4.1.2.3 Unsealed SNM or SNM in a form which can become airborne **(Quantities < 1 kg)**

SNM (quantities < 1 kg) in a form which can become airborne shall be handled as follows:

1. Room ventilation shall provide at least four air changes per hour.
2. The work surfaces shall be smooth and impermeable.
3. Personnel shall wear appropriate distinctively marked protective clothing, as needed.

4. The radioactive material shall be stored in appropriate and properly labeled containment when not in use.
5. A periodic monitoring program shall be maintained to detect surface contamination, unusual sources of radiation, and airborne radioactivity (see section 4.1.4).
6. Hands shall be checked for contamination at appropriate stages during operations.
7. The atmosphere in work rooms shall be kept at negative pressure with respect to other areas of the building.
8. Room exhaust shall be filtered through high-efficiency particulate air filters.
9. An air sampling program shall be maintained in accordance with Section 4.1.4.2.
10. Operations involving materials in a form which can become airborne shall be carried out in enclosures or exhaust ventilation systems having a face velocity of 150 ft per minute over 90% of the opening. The enclosure or systems shall be equipped with high-efficiency particulate air filters as appropriate to the operation being performed. Work shall be halted if the average face velocity falls below 100 ft/min. Such operations shall be monitored with air samplers in accordance with Section 4.1.4.2.
11. Personnel shall check hands, feet and clothing for contamination prior to leaving the work area.

4.1.2.4 SNM in a form which can become airborne **(Quantities >1 kg)**

SNM (quantities < 1 kg) in a from which can become airborne shall be handled as follows:

1. Room ventilation shall provide at least four air changes per hour.
2. The work surfaces shall be smooth and impermeable.
3. Personnel shall wear appropriate distinctively marked protective clothing, as needed.
4. The radioactive material shall be stored in appropriate and properly labeled containment when not in use.
5. A periodic monitoring program shall be maintained to detect surface contamination, unusual sources of radiation, and airborne radioactivity (see section 4.1.4).
6. Hands shall be checked for contamination at appropriate stages during operations.
7. The atmosphere in work rooms shall be kept at negative pressure with respect to other areas of the building.
8. Room exhaust shall be filtered through high-efficiency particulate air filters.
9. An air sampling program shall be maintained in accordance with Section 4.1.4.2.
10. Operations shall be carried out in inert boxes, gloved boxes, closed process equipment or equivalent enclosure equipped with negative pressure ventilation and high-efficiency

particulate air filters. "Equivalent enclosure" to be determined during Work Authorization review.

11. Other protective devices shall be included commensurate with the degree of hazard associated with the operations; namely, shielding, remote handling devices, air locks, bag-out ports, etc.
12. Personnel shall check hands, feet and clothing for contamination prior to leaving the work area.

4.1.3 Personnel Monitoring

4.1.3.1 External Radiation Exposure - Personnel requiring monitoring (per 10CFR20.1502) shall be monitored using equipment described in section 4.2.2.

4.1.3.2 Internal Radiation Exposure - Internal monitoring shall be conducted for individuals requiring monitoring (per 10CFR20.1502). For purposes of assessing dose, when required under 10CFR20.1502, GA will take suitable and timely measurements of-

(1) Concentrations of radioactive materials in air in work areas, or;
(2) Quantities of radionuclides in the body; or
(3) Quantities of radionuclides excreted from the body; or
(4) Combination of these measurements.

Internal dose will be determined per 10CFR20.1204 using the guidance provided in ANSI N13.22-1995.

4.1.4 Surveillance

4.1.4.1 Radiation and Contamination Surveys

Radiation and contamination surveys shall be performed as required by 10CFR20.

The frequency of measurement for contamination levels shall be as described in Table II 4-1.

Table II 4-1 Frequency of Surveys			
Plant Areas	*External Radiation Surveys*	*Air Sampling*	*Removable Surface Contamination Surveys*
Uranium receiving, warehousing, shipping, inspection and storage	Monthly	Continuous air sampling at hoods and enclosures; samples changed weekly and following any indication of release leading to airborne concentrations of uranium	Monthly and following any indication of release
D&D activities if airborne radioactivity is not likely	Monthly	Not Required	Not Required
Any active D&D activities where airborne radioactivity is likely	Monthly	Continuous air sampling; samples changed daily, following any change in equipment or process control and following detection of any event that may have released uranium, i.e., leakage (valves, pipes, tanks, trays), spillage, or blockage of process equipment	Weekly and immediately following any indication of release or spill Daily if specified in the Work Authorization or Radiation Work Permit
Chemical labs, radiochemistry labs	Monthly	Continuous air sampling; samples changed weekly	Weekly
Building 39 pilot plant during shutdown (1) (2) Other shutdown facilities (1) (2)	Quarterly	Monthly (Inside Facility) Monthly (Stack Sampling)	Monthly at restricted area boundary points (both restricted and unrestricted areas to be surveyed)

(1) After removal of all radioactive material or material placed in safe storage; no active D&D activities in progress.

(2) Enclosures or ducts in the facility must be completely sealed or maintained at a minimum face velocity of 25 lfm if not completely sealed.

The action level for removable contamination is provided in Table II 4-2. When this level is exceeded, decontamination is required in the work area.

Table II 4-2 Removable Contamination Action Levels

Area	*dpm/100 cm²*	
	Alpha	*Beta*
Unrestricted Areas	1000 *	1000 *
Restricted Areas **	5000	5000

* Consistent with the criteria for release to unrestricted use.

** Excluding (1) enclosed areas where respiratory protection is required, (2) the interior of glove boxes, hoods and other equivalent enclosures and (3) inaccessible locations.

4.1.4.2 Air

Air samplers shall be used in all locations where airborne radioactivity is likely. Air sampler placement shall conservatively represent the workers breathing zone. Each of the air samplers with suitable collection filters shall be coupled to a measuring device to determine the volume of air that flows through the filter. The collection filter papers shall be evaluated for alpha, beta, and gamma activity as appropriate to the operation. Air samples shall be collected in accordance with Table II 4-1. The samples will typically be analyzed within 3-5 days after collection.

The location of air samplers shall be checked annually and whenever any process or equipment changes are made to verify the representativeness of work area air sampling. In addition, the location of air samplers shall be checked at the commencement of operations in any area that has been shutdown for more than 6 months to verify the representativeness of air sampling.

Any one sample measuring $\geq$ 1 DAC shall be reported to the Manager, Health Physics and investigated, and, if applicable, corrective action shall be taken.

Where air sample data indicates airborne radioactivity in excess of 50% of the DAC for U-235 in a specific area or location averaged over one week, the results shall be investigated and corrective action taken, as required.

The ventilation system shall be maintained to confine hazardous materials.

Pressure differentials shall be maintained so air flow is from zones of lesser contamination potential to zones of greater contamination potential.

Air sampling results assist in confirming the adequacy of the ventilation system.

4.1.4.3 Water

Liquids from effluent waste streams from GA nuclear facilities are collected in holdup tanks, the liquids air sparged, sampled and analyzed for radioactivity before release to the sewerage system. Upon determination that the conditions specified in 10CFR20.2003 have been met, the liquids are released into the sanitary system. All such releases are recorded and reported to the NRC in the semiannual effluent report.

Intervention - If the concentration levels exceed the permissible levels, the water from the hold-up tanks is not released to the sewer, it is diluted by additional effluent makeup or treated as radioactive waste. Contents of the hold-up tank are annually sparged to prevent accumulation of material at the bottom of the tank.

Sewage shall be continuously grab sampled, samples collected daily during the normal work week, and evaluated for gross-alpha and gross-beta concentrations daily.

Investigation - Anytime the data indicate that pre-established alert levels specified in approved Health Physics procedures have been exceeded, an investigation shall be made to determine the corrective action required, if applicable.

4.1.5 Sealed Plutonium Source Leak Testing

Sources when not in use shall be stored in a closed container adequately designed and constructed to contain plutonium which might otherwise be released during storage.

Leak Testing

Each sealed plutonium source shall be tested for leakage at intervals not to exceed 6 months. In the absence of a certificate from a transferrer indicating that a test has been made within 6 months prior

to the transfer, the sealed source shall not be put into use until tested.

The test shall be capable of detecting the presence of 0.005 microcuries of alpha contamination on the test sample. The test sample shall be taken from the source or from nearest accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the NRC.

If the test reveals the presence of 0.005 microcuries or more of removable alpha contamination, or if a source has been damaged or broken, the source should be deemed to be losing plutonium and GA shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired by a person appropriately licensed to make such repairs, or disposed of in accordance with NRC regulations. Within 5 days after determining that any source has leaked (or lost plutonium), the licensee shall file a report with the division of fuel Cycle Safety and Safeguards, USNRC, Washington DC 20555, describing the source, the test results, the extent of contamination, the apparent or suspected cause of source failure, and the corrective action taken. A copy of the report shall be sent to the Director of the nearest Regional Office listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.

The periodic leak test does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within 6 months prior to the date of use or transfer.

4.1.6 Respiratory Protection

General Atomics shall maintain a respiratory protection program in accordance with Subpart H of 10CFR20 "Respiratory Protection and Controls to Restrict Internal Exposure in Restricted Areas". GA shall have a written policy statement on respiratory usage covering (1) the use of process or other engineering controls, instead of respirators, (2) the routine, non-routine, and emergency use of respirators, and (3) the periods of respirator use and relief from respirator use.

Respiratory protective equipment may be used in circumstances where the airborne concentration limits of Appendix B 10 CFR 20 cannot be practically achieved through the use of process or engineering controls or exposures controlled through other precautionary procedures such as increased surveillance, limitation of working times, etc. Any such use of respiratory protective

equipment shall be conditioned upon the following:

1. The selected respiratory protective equipment will provide a protection factor greater than the multiple by which peak concentrations of radioactive materials are expected to exceed the values specified in Appendix B, of 10 CFR Part 20. The equipment selected is used so that the average concentration of radioactive material inhaled during any period of uninterrupted use in an airborne radioactivity area, on any day, by any individual using the equipment, will not exceed the values specified in Appendix B, of 10 CFR Part 20.
2. Each respirator user(s) is advised that he/she may leave the area for relief from respirator use in the event of equipment malfunction, physical or psychological discomfort, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might cause reduction in the protection afforded the wearer.
3. The licensee maintains a respiratory protective program adequate to assure that the objective of item 1 above is met and such program shall include:
   a. Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposure, and to permit proper selection of the respiratory protective equipment.
   b. Procedures to assure proper selection, supervision and adequate training of personnel using such protective equipment.
   c. Procedures to assure the adequate fitting of respirators and the testing of equipment for operability.
   d. Procedures for maintenance to assure full effectiveness of respiratory protective equipment, including issuance, cleaning and decontamination, inspection, repair, and storage.
   e. Implementation of written operational and administrative procedures for control, issuance, proper use, and return of respiratory protective equipment, including provisions for planned limitations on duration of respirator use for any individual as necessitated by operational conditions.
   f. Bioassay and other surveys, as appropriate, to evaluate individuals exposures and to assess protection actually provided.
   g. Records sufficient to permit periodic evaluation of the adequacy of the respiratory protective program.
   h. Determination prior to assignment of any individual to tasks requiring the use of respirators that such an individual is physically able to perform the work and use the respiratory protective equipment. A physician is to determine what health and

physical conditions are pertinent. The medical status of each respirator user is to be reviewed at least annually.

4. GA will use equipment approved under appropriate Approval Schedules in 30 CFR Part ll of the U. S. Bureau of Mines-National Institute for Occupational Safety and Health and as set forth in 10 CFR 20 Appendix A.
5. Where no equipment of a particular type has been approved under the schedules in 30 CFR Part ll, or where there is no existing schedule for approval of certain equipment, such equipment is not to be used except as authorized by the NRC.
6. Unless otherwise authorized by the NRC, the licensee will not assign protection factors in excess of those specified in 10 CFR 20 Appendix A when selecting and using respiratory protective equipment.

4.1.7 Radioactive Releases

4.1.7.1 Air

Airborne radioactivity discharged to the atmosphere shall be controlled to have an annual average activity at the property boundary as far below the Effluent Concentration (EC) for unrestricted areas (as defined in 10 CFR Part 20) as practicable. Continual evaluation of air sampling results shall be used to assess the cumulative amount discharged.

Where calculations indicate SNM can be emitted to the site boundary at concentration levels, averaged over a calendar quarter, which are equal to or greater than at least 10% of the appropriate concentration listed in 10 CFR 20, Appendix B, Table II, effluents shall be continuously sampled. Air effluent shall be monitored after filtration during release.

Anytime the air sampling data indicates that a level of 50% of the U-235 effluent concentration listed in 10 CFR 20, Appendix B, has been exceeded on a quarterly basis, an investigation will be conducted and corrective action will be taken as required.

Calculations of dose due to airborne emissions from GA nuclear facilities at GA's site boundaries shall be conducted annually in accordance with EPA regulations (40CFR61), National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart I entitled "National Emission Standards for Radionuclide Emissions from Facilities Licensed by the Nuclear Regulatory Commission and Federal Facilities not Covered by Subpart H".

The NRC, EPA and the State of California shall be notified by GA if doses at the site boundary exceed the standard specified in 10CFR61.102 as follows:

(a) Emissions of radionuclides, including iodine, to the ambient air from a facility shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.

(b) Emissions of iodine to the ambient air from a facility regulated under this subpart shall not exceed those amounts that would cause any member of the public to receive in any one year an effective dose equivalent of 3 mrem/yr.

4.1.7.2 Liquid

Liquid effluent shall be controlled by storage until determined safe for disposal through an approved waste disposal agency controlled release to the sanitary sewerage system if concentrations are within the limits specified in 10 CFR 20. Liquid releases into the sanitary sewerage system are discussed in sections 6.3 and 4.1.4.3.

4.2 EQUIPMENT

4.2.1 Radiation Detection and Survey

Instrumentation for detection and measurement of radiation shall be provided. Instrumentation other than 4.2.1.4 CWAS systems and microR meters shall be calibrated after repair and routinely at least twice annually by use of a source with calibration data traceable to the National Bureau of Standards. MicroR meters shall be calibrated annually.

4.2.2 External Dose Measurement

Film dosimeters or thermoluminescent dosimeter (TLD) shall be used to measure personnel occupational external radiation dose for individuals for whom external monitoring is required in accordance with 10CFR20.1502.

The dosimetry processor must hold a current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institutes of Standards and Technology.

Table II 4-3 gives a summary of the typical characteristics of such devices. Self-reading pocket ionization chambers (dosimeters) may be used in addition to film dosimeters or TLDs as determined by licensee to measure X-ray, beta, gamma and neutron radiation.

Table II 4-3 Film and TLD Dose Ranges

Radiation Type	*Dose Range*		*Energy*
	From	*To*	
Film Dosimeter			
X or Gamma	10 mrems	40 rems	~5 KeV to 20 KeV
Rays	10 mrems	40 rems	20 KeV - 100 KeV
	10 mrems	750 rems	100 KeV - 3 MeV
	50 mrems	750 rems	Above 1 MeV
Beta			
TLD Dosimeter			
X or Gamma	10 mrems	10^5 rems	10 KeV and up
Rays			
	50 mrems	10^5 rems	1 MeV and up
Beta			
Neutrons (Film/TLD's)	30 mrems	1000 rems	0.025 eV and up

4.2.3 Dose Rate Measurement

Portable survey meters shall be used to measure dose rate. Effective meter ranges are shown in Table II 4-4.

Table II 4-4 Portable Meter Dose Rate Ranges			
Radiation Type	*Dose Range*		*Energy*
	From	*To*	
X or Gamma Rays			
μR Meter	10 μR/hr	5 mR/hr	6 KeV to 3 MeV
Ion Chambers	0.2 mR/hr	50 R/hr	6 KeV to 3 MeV
Beta	0.5 mR/hr	50 Rads/hr	N/A
Neutrons	0.1 mR/hr	2000 mrems/hr	0.025 eV to 15 MeV

4.2.4 Radioactive Material Detection and Assay

Portable instrumentation shall be available and utilized for detection and assay. This instrumentation includes:

X ray and gamma - Geiger-Mueller (GM) counters, scintillation detectors, scintillation detectors coupled with a portable scaler for assay of low levels of radioactivity, scintillation detector coupled with a single-channel analyzer, μR meters and ion chambers.

Beta - GM counters and ion chambers.

Alpha - Air proportional and scintillation detectors.

Neutron - mRem or Rem reading neutron monitor.

Fixed instrumentation shall be available and utilized as required for radiological safety purposes. Such instruments shall include counting equipment (alpha and beta wipe counters), gamma spectrometry for analysis of samples and calibration sources(s) to calibrate instruments.

4.2.5 Criticality Monitoring and Alarm System

The licensee shall maintain in each area where SNM is handled, used, or stored a monitoring system using gamma or neutron-sensitive radiation detectors which will energize clearly audible alarm signals if accidental criticality occurs in accordance with the requirements of 10 CFR 70.24(a). Each system shall be tested monthly using internal check sources or portable sources. Individual channels of the system will be re-calibrated annually or if:

1. detector and amplifier response to a check source is > _+50% from expected value, or,
2. detector and amplifier response to internal "keep alive" source or known external radiation field is not within _+100% of expected value, or,
3. prior to reentry into service following any required maintenance.

The alarm trip levels will be set at levels between 5 mR/hr and 20 mR/hr for non-coincidence systems or they will be set to detect a criticality event specified in 70.24(a)(1) if the system is a coincidence type. The trip levels will be readjusted after each monthly test of the criticality alarm system if the alarm point fails to activate within approximately five (5) seconds more than once out of four trials.

Any area which meets the criteria of 1, 2 or 3 below and which has prior CRSC approval is exempt from the monitoring system described above.

1. General Spaces
   a. The area shall be a defined nuclearly isolated space, area, laboratory, building or facility established to control SNM activities.
   b. The area shall have established a material balance which shall be limited to not more than 700 grams contained U-235, 500 grams U-233, 400 grams plutonium or 400 grams or a combination thereof.
   c. The area's activity shall be under an approved work authorization
   d. Administrative and procedural and/or physical constraints exist to preclude the introduction of more than the authorized amount of SNM to the restricted area.

2. Hot Cells
   a. Heavily shielded cells designed to contain highly irradiated fuel, reactor components, or byproduct material sources. Criticality alarms cannot be located within the cells

because of the very high variable radiation levels that exist there; therefore an exemption is required.

3. Other

   a. Any area used for temporary storage of SNM in authorized shipping containers on transport vehicle pending its shipment or delivery to on-site storage area.

In addition, the licensee is exempt from the 10 CFR 70.24 monitoring system requirements when performing system repair or modifications provided that:

1. Special attention is given to minimizing the period of inoperability.
2. No material handling will be allowed in the area while the alarms are inoperative unless such handling is to mitigate a significant Health Safety problem or provide required physical protection and receives prior approval of operating management, the managers of Nuclear Safety & Health Physics, and the Chairperson of the CRSC.
3. Facility operating staff will be informed of the special operating circumstances limiting SNM handling.

The licensee also is exempt from the 10 CFR 70.24 alarm audible requirement when planned operations will result in radiation levels above the 5-20 mR/hr monitoring system trip levels provided that:

1. The radiation level is continuously measured and is under observation during the interval of bypass of the alarm's audio;
2. Any unrelated SNM handling in the area shall be suspended during the period of bypassed alarm audio;
3. The bypassing of the audio alarm is accomplished by or under direction of Health Physics and
4. The system will be tested for complete operability at the time it is returned to normal service.

Notwithstanding other statements made in this section, no material handling shall be allowed in any area in which the required criticality alarm system is inoperative.

4.2.6 Air Sampling and Filtration

Air sampling equipment shall be maintained and used where there is hazard of particulate airborne

radioactivity. This equipment shall, as a minimum, consist of a sampling head, filter, air volume flow measuring device and pump. The standard method of evaluating the air samples shall be based on removal of the sample filter to suitably calibrated laboratory counting equipment.

Whenever High Efficiency Particulate Air (HEPA) filter systems are used, they shall have the following characteristics:

1. Rated operational efficiency of 99.95% for particles of 0.3 micron size.
2. Fire Resistance
   a. Fire resistant - these filters will be made of fire resistant material capable of withstanding the UL spot test, and capable of continuous operation at 150°F, or
   b. Fireproof - these filters shall be made of fireproof materials (i.e., metal frame with asbestos, ceramic, etc.) and capable of operation at temperatures above 150°F.
3. Differential pressure indicators or monitors.

HEPA filters using pressure indicators or monitors shall be replaced when the pressure drop across the filter reaches 4 inches of water. HEPA filters, when used in sequence on vent systems employing soot filters, shall be replaced when the pressure drop across the filter reaches 6 inches of water.

4.2.6 Hoods, Glove Boxes and Containers

4.2.6.1 Hoods

Hoods shall be used to provide controlled ventilation and to preclude contamination of personnel and the surrounding areas. They are typically fabricated of metal, fiberglass, plastic or wood. Each shall typically have a movable window that can be closed. Each hood shall be connected by a duct to a suitable ventilation system.

4.2.6.2 Glove Boxes

Glove box design shall be determined by the particular operation for which containment is required. Glove ports shall be used to provide gloved access to the inside area. The glove box atmosphere shall be maintained at a negative pressure differential to assure containment regardless of leak tightness.

4.2.6.3 Inert Gas Boxes

Inert gas box design shall be determined by the particular operation for which containment is required. Such boxes shall have the capability to be continuously purged or evacuated and injected with an inert gas. The gas must be held in the box at, or slightly above, atmospheric pressure without substantial loss for the duration of the operation contemplated. Pressure relief devices shall be provided which limit positive pressure to plus four inches of H_20 P relative to atmosphere. The pressure relief shall be ducted to an exhaust ventilation system. They may be equipped with gloves for gloved access to the inside area.

4.2.6.4 Frequency of Air Flow Measurements

Surveys of air velocity through hoods or similar enclosures shall be made at least on a quarterly basis. Adequacy of the hood velocity shall be further confirmed by placement of air samples outside of hoods or enclosures. The sampler placement shall cause a conservative measure of the workers breathing zone.

A ventilation survey is not required on hoods/enclosures which are not being used. The hood must first be cleaned to minimize potential for airborne release of radioactive material. In hoods previously used for fuel fabrication areas, all openings of ventilation ducts and enclosures which are not completely sealed shall be maintained with a minimum airflow of 25 LFM. GA shall determine, on at least a semiannual basis, that this minimum airflow is maintained.

4.2.6.5 Containers

The containers used for the transfer and storage of SNM shall be fabricated of durable material (i.e., metal, plastic, etc.), and provide containment capable of minimizing accidental spillage or dispersal of contents. The containers shall not be opened in any locations other than those designated for the purpose of handling or storing SNM.

4.3 FACILITIES

4.3.1 General

Present buildings containing radioactive material were constructed in accordance with uniform

building code requirements and the fire resistant standards. In cases of new construction, including interior finish, partitions, equipment and mounting shall be fire resistant. All applicable building codes will be complied with, except where more restrictive practice is deemed necessary to assure radiological safety. Building services include provisions for ventilation and air conditioning, fire detection and/or extinguishers and exhaust filtration and waste disposal if required.

4.3.2 Hot Cell Facility

The Hot Cell facility shall contain cells capable of handling up to 1×10^6 curies of 1 MeV gamma. Cells shall operate under negative pressure and air shall be exhausted to a vent system which contains prefilters and High Efficiency Particulate Air (HEPA) filters rated at an efficiency of at least 99.95% for particles of 0.3-micron size. Cells shall be constructed of steel and concrete and shall use shielding windows to afford radiation protection. Devices shall be located throughout the facility and in the exhaust system to monitor radiation and system operation.

The Hot Cell Facility is currently being decommissioned in accordance with an NRC and State of California approved Decommissioning Plan.

4.3.3 Storage Areas

Storage areas shall be provided to accommodate any physical or chemical form of SNM authorized under this license. All storage facilities shall have limits established within these license specifications and applicable governmental regulations.

4.3.4 Contamination Limits for Release to Unrestricted Use

The releases of facilities and equipment for Unrestricted Use from the plant site or to Unrestricted Areas onsite shall be in accordance with Annex 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," dated April 1993.

In addition, GA shall release items, materials and facilities in accordance with General Atomics' Site Decommissioning Plan dated September 1996 (and as it may be amended after that date).

ENCLOSURE 2

Significant Changes to Chapter 4 of SNM-696 and Justification

1. Changed controlled area to restricted area throughout document to be consistent with the new 10CFR20.

2. Refrences to the 10CFR20 changes effective January 1, 1994 incorporated throughout the entire document and the old references deleted.

3. Section 4.1.2- Deleted Type I, II and II type workplaces and replaced them with specific controls for SNM in various forms. Type I, II and III no longer applicable in a possession only license status.

4. Section 4.1.3 - Bioassay information deleted and replaced with "internal monitoring will be determined by 10CFR20.1204 and using the guidance provided in ANSI N13.22-1995." The ANSI standard is consisted with the new 10CFR20 regulations.

5. Section 4.1.4.1 - Table 4.1-2 was was replaced with Table 4-1; the new table not only includes the frequency for removable contamination surveys (which was the only thing covered by Table 4.1-2) but also includes the frequency for external radiation surveys and air sampling frequencies for various D&D activities and at facilities that have been shut down.

6. Table 4.1-3 was replaced with Table 4-2; the new table changed the action levels for unrestricted areas from 200 to 1000 dpm/100 cm^2 to be consistent with the release criteria for unrestricted use.

7. Section 4.1.4.2 replaced the analysis of air samples within 24 hours with "typically within 3-5 days after collection" to allow for decay of the radon gas. The 3-5 days is adequate for a possession only license and current D&D activities. (Samples may be counted on the same day if high airborne radioactivity is suspected).

8. Section 4.1.4.3 - Deleted the sampling of influent tap water. There is no reason to sample it and GA has years and years of data showing no problems with the influent tap water.

9. Section 4.1.5 - added information from License condition #31 to this section except section (B) of "License Condition for Plutonium alpha Sources" which required testing sources for loss of plutonium at least every 3 months.

   Sources not in use are stored in proper containers and tamper sealed. A physical inventory is conducted every six (6) months. (See section 4.1.5).

   Sources in use are leak tested every six (6) months (See section 4.1.5). GA has not used any of the sources in storage over the past 10 years.

10. Section 4.1.6 - Added that GA would maintain a respiratory protection program in accordance with Subpart H of 10CFR20, and that GA shall have a written policy statement on respiratory useage.

Significant Changes to Chapter 4 of SNM-696 and Justification

11. Section 4.1.7 - Added that GA would comply with the EPA NESHAP regulations in Subpart I of 40CFR61 regarding airborne radioactive releases. Added that GA would notify the EPA, NRC and/or the State of California if the standards were exceeded.

12. Section 4.1.7.2 - Deleted section on liquid releases to the environment. GA does not release to the environment, only to the sanitary sewerage system if all Federal, State and local regulations have been met.

13. Section 4.2.1.1 (new 4.2.2) - added requirement to use a NVLAP certified dosimetry vendor.

14. Section 4.2.1.3 (new 4.2.4) - deleted reference to the meteorological equipment. GA is considering deactivating the equipment based on current operations. Note: GA will not deactivate the system until this section has been approved and the Radiological Contingency Plan will be modified prior to deactivating the system.

15. Section 4.2.1.4 (new 4.2.5) - added safety condition S-19 "No material handling will be allowed in any area where the required criticality alarm system is inoperative."

16. Section 4.2.2 (new 4.2.6) - Deleted information on fume scrubbers which are no longer used or required.

17. Section 4.2.3.4 (new 4.2.6) - Replaced frequency of air flow measurements for Type I, II and III places with a requirement to conduct quarterly surveys of air velocity through hoods or similar enclosures on a quarterly basis unless they are not being used or the facility is in shutdown mode (in this case, the new section specifies that the hoods or enclosures must be completely sealed or have at least 25 lfm minimum airflow).

18. Section 4.3.2 - Added that the Hot Cell Facility is currently being decommissioned in accordance with an NRC and State of California approved Decommissioning Plan.

19. Section 4.3.5 (new 4.3.4) - Date of Annex C changed from July 1982 to April 1993 to be consistent with license safety condition S-16.