

LICENSE CONDITIONS  
FOR  
SNM LICENSE NO. SNM-21

U. S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE  
Supplementary Sheet

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6. (cont'd)

7. (cont'd)

8. (cont'd)

(b) A maximum of 2 grams total Pu for gamma spectroscopy and radiometric counting analyses.

D. Pu (principally  $^{239}\text{Pu}$ ).

D. Sealed Sources (as Pu-Be sources)

D. 1.0 kilograms total Pu at either or both sites.

E. Pu (Principally  $^{238}\text{Pu}$ ).

E. Sealed Sources

E. 0.5 kilograms total Pu at either or both sites.

9. Authorized use: For use in accordance with statements, representations and conditions contained in Sections VII-B, VII-C, and VII-D of the licensee's application dated June 27, 1975 and supplements dated February 1, April 13, June 16, and August 12, 1977.

10. Authorized place of use: The licensee's existing Buildings 007 and 004 at Canoga Park, California and existing Buildings 020, 055 and 172 at the Nuclear Development Field Laboratory in Chatsworth, California as described in the referenced application.

11. The Radiation Safety Representative, who is an officer of the NSRP, must have a bachelor's degree in one of the physical sciences and three years experience in radiation protection operations. Exceptions to the bachelor's degree requirement may be made in accordance with Section VII-C.1.c. of AI-75-46.

12. The manager of the radiation safety function, or his designated alternate, shall inspect work areas at least quarterly to ensure that operations are in conformance with all radiation safety criteria, regulatory directives and operating procedures.

In areas where substandard practices are observed, a followup inspection must be made within one week of the initial observation. If practices which could result in a definite hazard are observed during any inspection, the manager of the radiation safety function is authorized to suspend operations until corrective action is taken.

The manager of the radiation safety function, or designated alternate, shall also inspect work areas with respect to radiation safety:

- a. Before the startup of a new project, and
- b. Within one week after the startup of a new project

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13. Written operating procedures shall be available on the floor for each operation. Such approved operating procedures must be available prior to the implementation of any new or modified activities or procedures involving SNM.

All such operating procedures and any changes to these procedures shall be approved in writing by the appropriate Group or Unit Manager and shall conform to the provisions of the applicable Radiation Safety Plan and applicable Nuclear Safety Analysis.

14. Unless the operation or maintenance work is covered by an effective operating procedure a Restricted Access Area Entry Permit shall be prepared for all work on or involving entry into an area or system containing SNM where a potential for release of contamination exists or exposure of employees to airborne radioactivity from the proposed operation or work is likely to exceed 25% of the applicable concentration in Appendix B, Table 1, of 10 CFR 20 and for entry into high radiation areas. All Restricted Access Area Entry Permits shall be signed by a representative of the radiation and nuclear safety function.
15. The results of sampling, analyses, surveys and monitoring, the results of calibration of equipment, reports on audits and inspections, and all meetings and training courses, committed to in Sections VII-B, C, and D of AI-75-46, as well as any subsequent reviews, investigations, corrective actions and work restrictions, shall be documented. Unless otherwise specified in NRC regulations, all such documentation shall be maintained for a period of at least five years.
16. The licensee is hereby authorized to make allowance for the use of respiratory equipment in determining whether individuals in restricted areas are exposed to concentrations of airborne radioactive materials in excess of the limits specified in Appendix B, Table 1, Column 1, 10 CFR 20, subject to the conditions specified in the attached Annex A.
17. Notwithstanding Section C.7 of Section VII of AI-75-46 the licensee shall develop and maintain an emergency plan and implement procedures in accordance with the conditions specified in the attached Annex B, dated February 1977.
18. Radiation Safety Plans (RSP), addressing all appropriate aspects of radiation safety, shall be prepared to cover all activities with SNM and shall be approved in writing by the NSRP and the HS&RS Department.

All changes in existing, as well as all new, equipment design or location, storage areas, emergency procedures, limits, or operating procedures, requiring change in nuclear criticality or radiation protection controls, which may be administered by AI without specific review and approval of the NRC, shall be approved in writing by the NSRP and the HS&RS Department.

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j. (cont'd)

All of the above approvals shall be documented and retained for a period of at least five years or for six months after the completion of a project, whichever is less.

19. All Radiation Safety Plans and Nuclear Safety Analyses shall be reviewed by management personnel of the HS&RS Department at least annually to assure that these plans are kept up-to-date. Documentation of such review shall be made on each plan.
20. All HS&RS reviews of any physical change in equipment and design shall include inspection of the physical system prior to start up.
21. Employees shall attend a refresher course in radiation and nuclear criticality safety every two years and in emergency procedures annually, as appropriate to their job functions.
22. The licensee shall comply with the following regarding surface contamination:
  - a. Release of equipment and packages from the plant site or to unrestricted areas on-site shall be in accordance with the attached Annex C, dated November 1976.
  - b. The limits and action guides listed in Table VII-3 shall not be averaged over an area greater than 100 cm<sup>2</sup>.
  - c. The limits in Table VII-5 for average contaminant shall not be averaged over more than one square meter and for maximum contaminant shall not be averaged over more than 100 cm<sup>2</sup>.
  - d. The minimum detection limit (MDL) as specified in Table VII-3 of AI-75-46, for contamination limits in unrestricted areas for Low-RCG, High-SA contaminant, shall not be greater than 0.2 dpm/cm<sup>2</sup>.
23. A formal annual report shall be made to the radioisotopes safety review committee of the NSRP reviewing employee exposures and effluent release data to determine (1) if there are any upward trends developing in personnel exposures for identifiable categories of workers or types of operations or effluents releases, (2) if exposures and effluents might be lowered under the concept of as low as reasonably achievable, and (3) if equipment for effluent and exposure control is being properly used, maintained and inspected. This report shall include review of other required audits and inspections performed during the past 12 months and review of the data from the following areas: employee exposures; bioassay results; effluent releases; in-plant airborne radioactivity and environmental monitoring.
24. The licensee shall comply with the following regarding in-plant airborne radioactivity sampling and monitoring:

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24. (cont'd)
- a. 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 out at the commencement of operations in an area that has been shut down for more than six months to verify the representativeness of air sampling.
  - b. Whenever any single air sampler exceeds eight MPC-hours in any one day, taking into account any applicable respiratory protection factors, the radiation and nuclear safety function shall make an investigation.
  - c. Whenever the cumulative weekly values at any single air sampler location are consistently (2 consecutive work weeks) more than 20 MPC-hours, taking into account any applicable respiratory protection factors, the radiation and nuclear safety function shall thoroughly inspect the work station observing the equipment in use, operator work habits, ventilation effectiveness, etc., and evaluate corrective actions that may be necessary. Such evaluation shall be documented.
25. The licensee shall commit to the following regarding gaseous effluent monitoring and control:
- a. Radiometric analysis of continuous samples, other than as specified in 25.d., shall be at least every two weeks.
  - b. If stack sample analysis on radioactivity in process ventilation releases shows the stack effluent concentrations exceed 50% of the unrestricted area concentrations as listed in 10 CFR Part 20, Appendix B, Table II, for an average period of three months, corrective action to reduce the levels at the release point shall be taken.
  - c. By January 1, 1978 all plutonium operations, where the material is not contained in sealed fuel pins or rods, shall be performed in enclosures providing three stages of high efficiency filtration. All other exhaust ventilation from areas, in which enclosures for handling unencapsulated plutonium are located, shall pass through two stages of high efficiency filters.  
  
The above filtration requirements do not apply to the use of small quantities of Pu for  $\gamma$  spectroscopy and counting analyses at the Headquarters site.  
  
Whenever the term "high efficiency filter" is used regarding filtration in Pu areas, it shall mean a HEPA filter that has been certified by the supplier to be 99.97 percent efficient for 0.3 micron particles.
  - d. A continuous stack monitor with audible alarm shall be provided in all ventilation systems exhausting work areas in which plutonium in an unencapsulated form is handled. The alarm point for the monitor shall not be greater than 8 MPC-hours. MPC shall be equal to the value in 10 CFR 20, Appendix B, Table I, Column 1, for soluble  $^{239}\text{Pu}$ . A continuous fixed air sampler shall also be

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provided and a radiometric analysis made weekly when plutonium in an unencapsulated form is being handled in the facility.
26. The licensee shall commit to the following, regarding liquid effluent control:
- A representative sample of all potentially contaminated liquid effluents from areas where only laboratory-scale quantities of SNM are used shall be analyzed at least weekly.
  - All potentially contaminated liquid effluents from Building 055 shall be analyzed prior to discharge.
  - If releases of radioactivity in liquid effluents exceed 50% of the applicable limits specified in 10 CFR Part 20, an investigation shall be made and any appropriate corrective action initiated.
27. The licensee's bioassay program shall comply with the following:
- The bioassay program for uranium shall conform to the provisions of NRC Regulatory Guide 8.11, "Application of Bioassay for Uranium."
  - Employees working in an area where there is unencapsulated Pu shall submit urine samples at least four times per year for routine plutonium analysis.
  - If an employee may have been exposed to greater than 40 MPC-hours of plutonium in air in any consecutive seven-day period, or if urinalysis shows  $>0.2$  dpm of Pu per day, then fecal analysis shall be performed to evaluate exposure, if investigation indicates the exposure may have been due to relatively insoluble forms of radioactive materials. If fecal analysis indicates a significant exposure to plutonium, then in-vivo lung counting shall also be performed.
  - If in-vivo lung counting indicates an individual has a MPLB, the employee shall be immediately removed from further exposure and an investigation of the employee's work area and corrective actions shall be instituted.
  - The dose commitment from Am shall also be considered in the above Pu bioassay program.
28. Radiation monitoring instrumentation shall be calibrated after repair and at least quarterly or at the manufacturer's suggested interval, whichever is sooner. Calibration sources shall be traceable to the National Bureau of Standards.
29. The licensee shall commit to the following regarding enclosures and ventilation:
- The flow rates of all process ventilation stacks and vents must be checked annually and whenever any process changes with potential to alter flow rate are made.

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29. (cont'd)
- b. The minimum frequency for determining enclosure-face velocities shall be weekly.
  - c. No open face hood, open box or similar open-faced enclosures with a minimum operating face air velocity of less than 100 LFM, shall be used to contain or confine radioactive material with a propensity to suspend in air.
30. Whenever the term RCG is used in the licensee's application it shall be interpreted to mean the MPC values in 10 CFR 20.
31. The membership of the radioisotopes safety review committee shall include at least one individual who meets the minimum technical qualifications specified in Section VII-C.1.c. of the licensee's application.
32. The minimum qualification requirements for the Criticality Safeguards Advisor and the Physicist on the Fuels Committee shall include at least two years experience in outside of reactor nuclear criticality safety.
33. When present, the neutron reflection properties for reflectors more effective than infinite water reflectors shall be considered in the evaluation of the nuclear criticality safety of single units and in the qualification of the exemption from the alarm requirements of Section 70.24(a) for areas identified by Item a) of Section VII-C.4.e.(1)1) on page VII-34.
34. By January 1, 1978, the plutonium facility glovebox room shall be provided with a wet-pipe sprinkler system for fire protection.
35. This license does not authorize the outside storage of plutonium or plutonium-bearing materials or equipment except as may occur temporarily at loading and receiving areas incidental to receipt or shipment.
36. The solid angle method of analysis shall be applied only to well moderated units with unit  $k_{eff}$ 's calculated under the assumption of optimum moderation.
37. All calculational methods applied to the evaluation of nuclear criticality safety shall be validated in accordance with ANS 8.11/N16.9-1975, "Calculational Methods for Nuclear Criticality Safety."
38. The environmental monitoring program shall be conducted in accordance with Section XIII of the licensee's Environmental Impact Assessment Report (AI-76-21) dated April 30, 1976, except for conditions in part XIII.A.3. (page B-XIII-7) and part XIII.A.6. (pages B-XIII-10 and -11).

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39. In addition to the analysis of gross-alpha activities in soil samples the licensee shall analyze for plutonium in samples collected semiannually.
40. The licensee shall comply with the leak test condition for sealed plutonium sources specified in the attached Annex D.
41. The term "special form," as used in Section VII-C of AI-75-46, shall be interpreted as defined in 10 CFR 71.4(o).
42. Water samples from the Santa Susana site pond shall be analyzed for tritium prior to release. At Headquarters, water samples shall be taken daily from the sewage outfall. Composites shall be made of the daily samples and analyzed for tritium on a monthly basis.
43. The applicant shall install three additional TLD's at the Headquarters site and shall relocate two of the continuous air monitoring stations at the Santa Susana site as stated in the letter from Atomics International to the NRC dated July 29, 1977.
44. Use of miscellaneous combustibles in the hot cells at the AIHL shall be limited and controlled by administrative procedures.
45. No potentially fire hazardous materials shall be left exposed while the hot cells are unattended.
46. Within 6 months of the issuance of this license, the licensee shall submit a plan for the future decontamination of the places of use and sites authorized by this license so that they can be released for unrestricted use. This submittal shall identify and discuss the factors that were considered in the design of the plan in sufficient detail to enable an independent review. The plan shall include an estimate of the costs involved and the financial arrangements that have been or will be made to insure that adequate funds will be available to cover these costs at the time of decommissioning. In considering alternatives for these financial arrangements, the licensee shall specifically include the posting of a performance bond as a means of assuring availability of adequate funds.

Date \_\_\_\_\_

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For the U. S. Nuclear Regulatory Commission

by \_\_\_\_\_

*L. C. Koser*  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

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A N N E X A

CONDITIONS FOR USE OF RESPIRATORY PROTECTIVE EQUIPMENT  
PURSUANT TO PARAGRAPHS 20.103(c)(1) AND (3), 10 CFR 20

1. In circumstances in which adequate limitation of the inhalation of radioactive materials by use of process or other engineering controls is impracticable, the licensee may permit an individual in a restricted area to be exposed to average concentrations of airborne radioactive materials in excess of the limits specified in Appendix B, Table 1, Column 1 of 10 CFR 20 provided:
  - A. The individual uses respiratory or other appropriate protective equipment such that the total intake, in any period of seven consecutive days by inhalation, ingestion or absorption, would not exceed that intake which would result from breathing the concentrations specified in Appendix B, Table 1, Column 1 of 10 CFR 20 for a period of 40 hours.
  - B. The licensee shall advise each respirator user that he may leave the area for relief from respiratory use in case of equipment malfunction, physical or psychological discomfort, or any other condition that might cause reduction in the protection afforded the wearer.
  - C. The licensee maintains a respiratory protective program adequate to assure that the objective of Item "A" above is met. Such program shall include:
    - (i) Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposure, and to permit proper selection of the respiratory protective equipment;
    - (ii) Procedures to assure proper selection, supervision and adequate training of personnel using such protective equipment;
    - (iii) Procedures to assure the adequate fitting of respirators, and the testing of equipment for operability.
    - (iv) Procedures for maintenance to assure full effectiveness of respiratory protective equipment, including issuance, cleaning and decontamination, inspection, repair, and storage;

- (v) Bioassays of individuals and other surveys as may be appropriate to evaluate individual exposures and to assess protection actually provided; and
  - (vi) Records sufficient to permit periodic evaluation of the adequacy of the respiratory protective program.
- D. The licensee has evaluated the protective equipment<sup>1/</sup> and has determined that, when used to protect against radioactive material under the conditions of use to be encountered such equipment is capable of providing a degree of protection at least equal to the protection factors listed in Table I attached hereto.<sup>2/</sup>
2. The licensee shall notify, in writing, the Director of the appropriate NRC Inspection and Enforcement Office listed in Appendix D, 10 CFR 20, when the respiratory protection program is initiated. Such notification shall be made within thirty (30) days after the date that allowance for the use of respiratory protective equipment is first made.
  3. The licensee shall not assign protection factors in excess of those given in Table I attached hereto in selecting equipment.

<sup>1/</sup>In evaluating respiratory protective equipment for use against radioactive materials to assure that the equipment provides the protection factors listed in the attached Table I, the licensee may accept equipment approved under appropriate test schedules of the U. S. Bureau of Mines to the extent pertinent.

<sup>2/</sup>The factors listed apply only to protection against radioactive materials. Additional precautions may have to be taken to protect against concurrent nonradiation hazards.

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TABLE I

PROTECTION FACTORS FOR RESPIRATORS

Description	Modes <sup>1/</sup>	PROTECTION FACTORS <sup>2/</sup>	
		Particulates and Vapors and Gases Except Tritium Oxide <sup>3/</sup>	Tritium Oxide
<b>I. <u>AIR-PURIFYING RESPIRATORS</u></b>			
Facepiece, full	NP	100	1
<b>II. <u>ATMOSPHERE-SUPPLYING RESPIRATOR</u></b>			
<b>1. <u>Air-line respirator</u></b>			
Facepiece, half-mask	CF	100	2
Facepiece, half-mask	D	100	2
Facepiece, full	CF	1000	2
Facepiece, full	D	500	2
Facepiece, full	PD	1000	2
Hood	CF	1000	2
Suit	CF	4/	4/
<b>2. <u>Self-contained breathing apparatus (SCBA)</u></b>			
Facepiece, full	D	500	2
Facepiece, full	PD	1000	2
Facepiece, full	R	1000	2
<b>3. <u>Combination respirator</u></b>			
Any combination of air-purifying and atmosphere supplying respirator.		Protection factor for type and mode of operation as listed above.	

- <sup>1/</sup> CF: continuous flow  
 D : demand  
 NP: negative pressure (i.e., negative phase during inhalation)  
 PD: pressure demand (i.e., always positive pressure)  
 R : recirculating (i.e., negative phase during inhalation)

- 2/ (a) For purposes of this authorization the protection factor is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of airborne radioactive material outside the respiratory protective equipment to that inside the equipment (usually inside the facepiece) under conditions of use. It is applied to the airborne concentration to determine the concentration inhaled by the wearer, according to the following formula:

$$\text{Concentration Inhaled} = \frac{\text{Airborne Concentration}}{\text{Protection Factor}}$$

- (b) The protection factors apply:
- (i) only for individually fitted respirators worn by trained individuals and used and maintained under supervision in a well-planned respiratory protection program.
  - (ii) for air purifying respirators only when high efficiency particulate filters and/or sorbents appropriate to the hazard are used.
  - (iii) for atmosphere supplying respirators only when supplied with adequate respirable air.

- 3/ Excluding radioactive contaminants that present an absorption or submersion hazard.

- 4/ Appropriate protection factors must be determined taking account of the permeability of the suit to the contaminant under conditions of use. No protection factor greater than 1000 shall be used except as authorized by the Commission.

NOTE 1: Protection factors for respirators as may be approved in the future by the U. S. Bureau of Mines according to approval schedules for respirators to protect against airborne radionuclides may be used in lieu of the protection factors listed in this Table. Where additional respiratory hazards other than radioactive ones are present, especially those immediately dangerous to life, the selection and use of respirators shall also be governed by the approval of the U. S. Bureau of Mines in accordance with their applicable schedules.

NOTE 2: Radioactive contaminants for which the concentration values in Appendix B, Table I of 10 CFR Part 20 are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations.

MINIMUM REQUIREMENTS FOR LICENSEE'S PLANS FOR  
COPING WITH RADIATION EMERGENCIES

The licensee shall develop and maintain an emergency plan and implementing procedures for coping with radiation emergencies which shall include, but not necessarily be limited to, the following:

1. An organization for coping with radiation emergencies, in which specific authorities, responsibilities, and duties are clearly defined and assigned. The methods used to assure that persons assigned specific authority and responsibility are initially qualified and are periodically trained so that they can continue to properly fulfill their duties should be specified. The means of notifying persons assigned to the organization in the event of an emergency and the means of notifying appropriate local, state, and Federal agencies so that emergency action beyond the site boundary may be taken should be specified.
2. A list of employees of the licensee (by position), other than those assigned to the emergency organization, who have any special qualifications for coping with emergency conditions. A similar list shall be made of other persons whose assistance may be needed. The special qualifications of these employees and persons shall be specified. All of the foregoing lists shall be available to the individuals responsible for directing the action necessary to cope with the emergency.
3. The actions planned to protect the health and safety of individuals and to prevent damage to property both within and outside this site boundary in the event of various types of emergencies that can be anticipated, i.e., internal accidents such as criticality, fire, and explosions, and natural occurrences such as floods, tornadoes, and earthquakes. This should include the means for determining: (i) the magnitude of the release of radioactive materials, including guidelines for evaluating the need for notification and participation of local, state and Federal agencies, and (ii) the type and extent of protective action to be taken within and outside the site boundary to protect health and safety and prevent damage to property.

4. The post-accident recovery and reentry actions including guidelines for implementing these actions which shall include (i) corrective actions that may be necessary to terminate or minimize the consequences of the accident, (ii) criteria for plant reentry, (iii) securing the accident area from inadvertent or unauthorized reentry, and (iv) resumption of operations.
5. Procedures for notifying and agreements to be reached with local, state, and Federal officials for the early warning of the public and for appropriate protective measures should such measures become necessary or desirable.
6. Provisions for maintaining up to date: (i) the organization for coping with emergencies, (ii) the procedures for use in emergencies, and (iii) the lists of persons with special qualifications for coping with emergency conditions.
7. The specifications for emergency first aid and personnel decontamination facilities, including:
  - (i) Identification of individuals directly involved in the accident;
  - (ii) Equipment at the site for personnel monitoring;
  - (iii) Facilities and supplies at the site for decontamination of personnel;
  - (iv) Facilities and medical supplies at the site for appropriate emergency first aid treatment;
  - (v) Arrangements for the services of a physician and other medical personnel qualified to handle radiation emergencies; and
  - (vi) Arrangements for transportation of injured or contaminated individuals to treatment facilities outside the site boundary.
8. Arrangements for treatment of individuals at treatment facilities outside the site boundary.

9. Provisions for testing, by periodic drills, of radiation emergency plans to assure that employees of the licensee are familiar with their specific duties. Provisions for participation in the drills by other persons whose assistance may be needed in the event of a radiation emergency shall be included.
10. The provisions for the training of persons other than employees of the licensee whose assistance may be needed in the event of a radiation emergency.
11. Provisions for maintenance and storage of emergency equipment, considering the various types of accidents that can be anticipated; also, the performance criteria of the various types of equipment.

The licensee's emergency plan shall consist of a document providing the objectives and the bases for the actions to be taken to cope with various types of accidents which affect, or threaten the health and safety of the general public, employees of the licensee or other persons temporarily or permanently assigned to the facility. It should specify the objectives to be met by the implementing procedures and should assign organizational and individual responsibilities to achieve such objectives.

Emergency procedures shall consist of a document defining in detail the implementation actions and methods necessary to achieve the objectives of the emergency plan for each set of circumstances considered in the emergency plan. To the extent possible these two documents should be separated.

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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

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

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The instructions in this guide in conjunction with Table I specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces and equipment prior to abandonment or release for unrestricted use. The limits in Table I 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 will be 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 I prior to applying 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 of premises, equipment, or scrap which are likely to be contaminated but are of 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 of 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.

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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 I. A copy of the survey report shall be filed with the Division of Fuel Cycle and Material Safety, USNRC, Washington, D.C. 20555, and also the Director of the Regional Office of the Office of Inspection and Enforcement, USNRC, 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.

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TABLE I  
ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES <sup>a</sup>	AVERAGE <sup>b c f</sup>	MAXIMUM <sup>b d f</sup>	REMOVABLE <sup>b e f</sup>
U-nat, U-235, U-238, and associated decay products	5,000 dpm $\alpha$ /100 cm <sup>2</sup>	15,000 dpm $\alpha$ /100 cm <sup>2</sup>	1,000 dpm $\alpha$ /100 cm <sup>2</sup>
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm <sup>2</sup>	300 dpm/100 cm <sup>2</sup>	20 dpm/100 cm <sup>2</sup>
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1,000 dpm/100 cm <sup>2</sup>	3,000 dpm/100 cm <sup>2</sup>	200 dpm/100 cm <sup>2</sup>
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 <sup>2</sup>	15,000 dpm $\beta\gamma$ /100 cm <sup>2</sup>	1,000 dpm $\beta\gamma$ /100 cm <sup>2</sup>

<sup>a</sup>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.

<sup>b</sup>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.

<sup>c</sup>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.

<sup>d</sup>The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.

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TABLE I

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<sup>e</sup>The amount of removable radioactive material per 100 cm<sup>2</sup> 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.

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

AI-75-46  
v

LICENSE CONDITION FOR LEAK TESTINGSEALED PLUTONIUM SOURCES

- A. Each encapsulated plutonium source designed for the purpose of emitting neutron or gamma radiation shall be tested for leakage at intervals not to exceed six (6) months. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of alpha contamination on the test sample. The test sample shall be taken from the source or from appropriate 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 Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable alpha contamination, the licensee 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 to be disposed of in accordance with the Commission regulations. Within five (5) days after determining that any source has leaked, the licensee shall file a report with the Division of Materials and Fuel Cycle Facility Licensing, U. S. Nuclear Regulatory Commission, Washington, D. C. 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 NRC Regional Office of Inspection and Enforcement, listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.
- D. The periodic leak test required by this condition 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 six (6) months prior to the date of use or transfer.

**U. S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE**

SEP 15 1977

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-433, and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Atomics International Division Rockwell International Corporation		3. License number SNM-21, as renewed.
2. 8900 DeSoto Avenue Canoga Park, California 91304		4. Expiration date September 30, 1982
		5. Docket or Reference No. 70-25
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Uranium enriched in the $^{235}\text{U}$ isotope.	A. Any enrichment or form except $\text{UF}_6$ .	A. 1,500 kilograms $^{235}\text{U}$ .
B. $^{233}\text{U}$	B. Any.	B. 5 kilograms $^{233}\text{U}$ .
C. Pu (principally $^{239}\text{Pu}$ )	C. Any.	C. Maximum of 3.5 kilograms total Pu (1) NDFL Site (a) Hot Laboratory - up to 3.5 kilograms Pu in irradiated fuel. (b) Pu Facility - less than 1.0 kilograms Pu in process. (2) HQ Site (a) HQ Vault - up to 3.5 kilograms Pu packaged in sealed authorized shipping containers.