

Lockheed

MISSILES
& SPACE
COMPANY.
INC.

June 25, 1982

In reply refer
to LMSC D812953

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MNO

1982 JUN 30 AM 10:51

RECEIVED

United States
Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, CA 94596

Attention: George S. Spencer, Director
Division of Radiological
Safety and Safeguards Program

Subject: NRC License Inspection conducted on May 18, 1982.

Reference: License No. 04-01964-07

- Enclosures: 1. Resumes of "Supervisors of Users of Radioactive Material".
2. Existing and modified LMSC Forms 8791-1 entitled, "Application for Authorization to Acquire Radioactive Materials or Irradiation Services", and LMSC Form 1791b entitled, "Source of Radiation Movement Approval".

Gentlemen:

Six foils of Uranium ²³⁵ were shipped to Harvard University, Cambridge, MA, on November 13, 1981, and were used by a Lockheed employee through an administrative error. These Uranium ²³⁵ foils were included in a shipment of other small quantities of byproduct material and source material. We correctly identified and categorized the radioactive material as being, byproduct, source and special nuclear material on the "Source of Radiation Movement Approval", form 1791b, when the materials were being shipped, but we failed to assure that license 04-01964-07 authorized the possession, use, and transfer of the Uranium ²³⁵.

The corrective action suggested by LMSC's Radiation Control Committee to preclude further violations of this nature, was to modify the administrative forms that we use in our management control system.

The major changes being made in our administrative forms are as follows:

1. The name of the Radiation Control Committee approved, "Supervisor of Users" will be designated on the "Application For Authorization or Irradiation Services", form 8791-1.

8207130140 820707
NMS LIC30
04-01964-07 PDR

1111 LOCKHEED WAY • SUNNYVALE, CALIFORNIA • 94086

2. LMSC form 1791B, entitled, "Source of Radiation Movement Approval", and form 8791-1 entitled, "Application For Authorization to acquire Radioactive Materials or Irradiation Services", are being modified so that a license or permit number has to be assigned for each category of radioactive material or a connotation made that the materials are being used pursuant to the provisions of Code of Federal Regulations, Title 10, Part 150, and that NRC Forms 241 have been processed.

Two separate documents requiring that applicable license or permit numbers be assigned to the categories of radioactive material at the time that a project is approved by LMSC's Radiation Control Committee, and again when the material is ready to be moved or shipped off plant, will alleviate another administrative error.

✓ We are of the opinion that we are not in violation of Condition 12 of the license because of the following:

This condition states that, "licensed materials shall be used by or under the supervision of Individuals designated by the Lockheed Missiles & Space Company Radiation Control Committee".

In the early 1970's LMSC's Radiation Control Committee decided upon a policy of approving designated "Supervisors of Users", rather than approving each individual that enters into our Radiation Control Program.

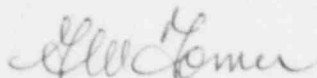
Attached are resumes of LMSC's Radiation Control Committee approved designated "Supervisors of Users", for the activities that were conducted under the provisions of 04-01964-07.

S. I. Taimuty, Ph.D (Nuclear Physics) is the LMSC Radiation Control Committee approved designated "Supervisor of Users" for the individual that used 80 microcuries of Nickel ⁶³ between March 27, 1980 and April 22, 1980 at Kirkland Air Force Base, New Mexico.

J. B. Reagan, Ph.D. (Space Sciences) is the LMSC Radiation Control Committee approved designated "Supervisor of Users" for the individual that used licensed sealed sources during November 1981 at Harvard University, Cambridge, Massachusetts.

We trust that the proposed changes and modifications made in our Radiation Control Program are fully responsive to your correspondence dated May 25, 1982.

Sincerely,



G. M. Tomer, Chief
Industrial Safety & Hygiene
O/27-23, B/102

GMT/ACH/pmj

Attachment

Radiation Experience Record

NAME J. B. REAGAN

ORGANIZATION CODE 52-12

1. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (CHECK ONE)	FORMAL COURSE
a. PRINCIPLES OF RADIATION PROTECTION	Tracerlab Inc. Boston, Mass	3 months	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
b. RADIOACTIVITY MEASUREMENT TECHNIQUES	Lockheed Research Laboratory Palo Alto, Calif.	17 years	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
c. MATHEMATICS BASIC TO THE USE OF RADIOACTIVITY	Boston College Physics Dept.	4 years	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
d. BIOLOGICAL EFFECTS OF RADIATION	Tracerlab Inc. Boston, Mass.	3 months	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

2. EXPERIENCE WITH RADIATION (ACTUAL USE OF RADIOISOTOPES OR EQUIVALENT EXPERIENCE)

ISOTOPE	MAX. AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Sr-Y-90	10 MC	Tracerlab Inc.	3 months	Radioactive phosphor development Calibration sources
Sr-Y-90	1 MC	Lockheed Research Lab	17 years	
Co-60				
Cs-137				
Am-241				

3. RADIATION DETECTION INSTRUMENTS USED:

TYPE OF INSTRUMENT	RADIATION DETECTED	USE (MONITORING, SURVEYING, MEASURING)
Geiger Counter	γ, e, p	Surveying, monitoring
Scintillation detectors	γ, e, p, α, x	Measuring
Solid-state detectors	e, p, α, x	Measuring
Proportional counters	e, x	Measuring, surveying
Neutron monitors	n	Monitoring, measuring

Date December 2, 1975

Signature

J B Reagan

JOSEPH B. REAGAN

Manager, Space Sciences Laboratory

Education:

B.S., Physics, Boston College, 1956
M.S., Physics, Boston College, 1959
Ph.D., Space Sciences, Stanford University, 1975

Positions Held:

1959- Lockheed Palo Alto Research Laboratory
LOCKHEED MISSILES & SPACE COMPANY, INC.

1975-Present, Manager, Space Sciences Laboratory, in the Physical Sciences Directorate. Responsible for the technical and management direction of approximately 50 scientific, engineering, and support personnel engaged in experimental and theoretical research in the space sciences.

1973-1975, Manager, Space Payloads Program Office. Responsible to the Director of Research for coordinating all NASA and DOD scientific space payload activities within the Palo Alto Research Laboratory.

1967-1973, Staff Scientist and Group Leader of the Space Instrumentation and Measurements Group within the Space Sciences Laboratory of the Physical Sciences Directorate. Responsible for the technical and administrative direction of 10 to 15 scientific, engineering, and technical personnel engaged in the design and development of scientific satellite payloads for space science research. Conducted space research in the areas of trapped and precipitated energetic charged particles, solar particles, the aurora, and ionospheric effects.

1963-1967, Research Scientist and Group Leader of the Space Instrumentation and Measurements Group with duties as above.

1961-1963, Senior Scientist, Physical Sciences Laboratory. Engaged in the design and development of scientific payloads for space flight on rockets, balloons, and satellites.

1959-1961, Scientist, Nuclear Sciences Laboratory. Conducted fast-neutron scattering experiments involving time-of-flight method with a Van de Graaff accelerator.

1956-1958, BOSTON COLLEGE, Physics Department.

1957-1958, Research Assistant. Participated in the study of the interaction of plasmas and high transient magnetic fields.

1957, Teaching Assistant. Assisted in teaching undergraduate general physics and AC-DC circuit courses.

1956, GENERAL ELECTRIC COMPANY, West Lynn, Massachusetts.

Programmer. Programmed scientific problems on IBM 704 digital computer.

1954, TRACERLAB INC., Boston, Massachusetts.

Laboratory Technician. Assisted in preparation of radioactive phosphors as secondary light source.

Relevant Experience:

Principal Investigator, ONR-001 experiment on the 1971-089A satellite for the Defense Nuclear Agency and the Office of Naval Research. The experiment consisted of 19 separate instruments to measure the effects of solar particle events on the D-region ionosphere. The experiment, which operated successfully for 26 months (1971-1973), provided extensive data on the large solar storms of August 1972. Responsible for the detailed design of several instruments, for the overall satellite integration effort and for on-orbit support. Conducted the principal data analysis effort on the effect of solar particles on the D-region ionosphere during the August 1972 events.

Co-Investigator, ARPA-301 experiment for the S78-1 satellite to be launched in 1978 for the Defense Advanced Research Projects Agency and the Office of Naval Research. Experiment contains two high-resolution cooled germanium spectrometers and eight cadmium telluride spectrometers for gamma-ray measurements and several energetic particle spectrometers.

Principal Investigator, SC-3 High-Energy Particle Spectrometer Experiment on the Spacecraft-Charging-at-High-Altitudes (SCATHA) satellite (S78-2) to be launched in 1978. The experiment will measure the high-energy electron and proton environment at synchronous altitudes.

Co-Investigator, ARPA-501 experiment on the 1972-076B satellite launched in 1972 and still operating. This experiment for the Defense Advanced Research Projects Agency and the Office of Naval Research provided the first satellite flight of a cooled, high-resolution lithium-drifted germanium spectrometer for gamma-ray measurements in space. Responsible for the detailed design and development of three particle spectrometers. Participated in the design of the germanium spectrometers. Responsible for the overall experiment integration with the satellite. Co-participant in the analysis of scientific data from several instruments in the payload.

Co-Investigator, ARPA-819 experiment on the 1969-025B satellite launched in 1969 and operated for 18 months for the Advanced Research Projects Agency to investigate horizontal gradients in the ionosphere. Principal responsibility for the design and development of the solid-state energetic particle spectrometer. Responsible for the overall experiment integration with the satellite. Co-participant in the analysis of scientific data from the particle spectrometer.

Principal Investigator, proton-electron spectrometer experiments on the Gemini IV and VII flights in 1965. Principal responsibility for experiment design and development, for spacecraft integration and for analysis of scientific data on the inner radiation belt trapped protons and electrons.

Co-Investigator, AURORA satellite program for the Defense Atomic Support Agency and the Office of Naval Research. Seven satellite payloads designed and developed between 1962-1965 to measure the aurora and its effects on the ionosphere. Provided the first detailed morphological studies of auroral precipitation.

Co-Investigator, Starfish electron measurements. Four satellite flights in the fall of 1962 to investigate the trapped electrons injected by the Starfish high-altitude nuclear test.

Co-Investigator, energetic proton measurements 1961-1962. Participated in the design and development of three high-energy proton experiments flown on the Midas satellites to measure the protons in the heart of the inner radiation belt.

Selected Publications

Approximately 49 publications and presentations in nuclear physics, space science and space instrumentation prior to 1973.

"D-Region Electron Loss Coefficients during a Solar Particle Event," with J. N. Bradbury, J. D. McDaniel, and W. L. Imhof, Trans. Am. Geophys. Union, Vol. 54, p. 382, 1973.

"Comparisons of Interplanetary and Polar Cap Fluxes during the 4-11 August Solar Particle Events," with W. L. Imhof, L. J. Lanzerotti, and C. G. MacLennan, Trans. Am. Geophys. Union, Vol. 54, p. 419, 1973.

"A Satellite-Borne Ge(Li) High-Resolution Gamma-Ray Spectrometer Investigation of Electron Precipitation and Search for Trapped Positrons," with W. L. Imhof, G. H. Nakano, and R. G. Johnson, Trans. Am. Geophys. Union, Vol. 54, p. 435, 1973.

"High-Resolution Gamma-Ray Measurements with a Satellite-Borne Ge(Li) Spectrometer," with G. H. Nakano, W. L. Imhof, and R. G. Johnson, Trans. Am. Geophys. Union, Vol. 54, p. 435, 1973.

"Comparative Angular Distributions of Solar Particles over the Polar Caps," with G. H. Nakano and W. L. Imhof, Trans. Am. Geophys. Union, Vol. 54, p. 1178, 1973.

"A Coordinated Two-Satellite Study of the High-Latitude Electron Trapping Boundary," with E. E. Gaines, and W. L. Imhof, Trans. Am. Geophys. Union, Vol. 54, p. 1183, 1973.

"A Coordinated Two-Satellite Study of Energetic Electron Precipitation Events," with W. L. Imhof and G. H. Nakano, Trans. Am. Geophys. Union, Vol. 54, p. 1183, 1973.

"Determination of D-Region Effective Recombination Rate Coefficients during the Intense Solar Particle Events of August 1972," with V. F. Moughan and W. L. Imhof, Trans. Am. Geophys. Union Meeting, November 1973.

"Preliminary Results from the First Satellite Flight of a High-Resolution Germanium Gamma-Ray Spectrometer," with G. H. Nakano, W. L. Imhof and R. G. Johnson, Proceedings of the International Symposium and Workshop on Gamma-Ray Astrophysics, NASA SP-339, p. 77, 1973.

"Characteristics of the August 1972 Solar Particle Events as Observed over the Earth's Polar Caps," with W. L. Imhof and F. V. Moughan, World Data Center for Solar Terrestrial Physics Report on the Retrospective World Interval July 26-August 14, 1973, Report UAG 28, Part III, p. 676, 1973.

"Observations of Energetic Solar Particles at Low Altitudes in the Vicinity of the Polar Cleft," with W. L. Imhof, Trans. Am. Geophys. Union., Vol. 55, p. 68, 1974.

"Satellite Observations of Bremsstrahlung from Widespread Energetic Electron Precipitation Events," with W. L. Imhof, G. H. Nakano, and R. G. Johnson, J. Geophys. Res., Vol. 79, p. 565, 1974.

"A Satellite-Borne High-Resolution Ge(Li) Gamma-Ray Spectrometer System, Part 2, Description of the Electronic, Data Handling and Auxiliary Sensor Systems," with J. C. Bakke, J. D. McDaniel, and J. D. Matthews, IEEE Trans. Nucl. Sci., Vol. NS-21, p. 164, Feb. 1974.

"Dynamic Variations in Intensity and Energy Spectra of Electrons in the Inner Radiation Belt, with W. L. Imhof and E. E. Gaines, J. Geophys. Res., Vol. 78, p. 4568, 1973.

"Preliminary Results from the First Satellite Flight of a High-Resolution Germanium Gamma-Ray Spectrometer: Backgrounds from Electron Bremsstrahlung and from Electron-Positron Annihilation," with W. L. Imhof, G. H. Nakano, and R. G. Johnson, Gamma-Ray Astrophysics, NASA/GSFC Report No. SP-339, p. 77, 1973.

"Satellite Observations of Bremsstrahlung from Widespread Energetic Electron Precipitation Events," with W. L. Imhof, G. H. Nakano, and R. G. Johnson, J. Geophys. Res., Vol. 79, p. 565, 1974.

"Evidence for the Resonance Precipitation of Energetic Electrons from the Slot Region of the Radiation Belts," with W. L. Imhof and E. E. Gaines, J. Geophys. Res., Vol. 79, p. 3141, 1974.

"Spectra Measurements of a Cosmic Gamma-Ray Burst with Fast Time Resolution," with W. L. Imhof, G. H. Nakano, R. G. Johnson, J. R. Kilner, R. W. Klebesadel, and I. B. Strong, Astrophysical Journal Letters, Vol. 191, pp. L7-L10, 1974.

"Observations of Cosmic Gamma-Ray Bursts with a Germanium Spectrometer," with W. L. Imhof and G. H. Nakano, paper presented at International Conference on X-Rays in Space University of Calgary, Canada, August 14-21, 1974, in Proceedings, pp. 924-934, 1975.

"Solar Particle Measurements over the Polar Caps During the 17 June 1972 Event," with V. F. Moughan, J. D. Matthews, and W. L. Imhof, in Compilation of Solar Particle and Interplanetary Measurements Acquired During the Campaign for Integrated Observations of Solar Flares, Air Force Cambridge Research Laboratory Report AFCRL-TR-74-0271, 19 June 1974.

"Recent Measurements with a Satellite-Borne Cooled Germanium Spectrometer, Part 1: Observations of the 18 December 1972 Gamma-Ray Burst," with G. H. Nakano and W. L. Imhof, in The Context and Status of Gamma-Ray Astronomy (Proceedings of 9th ESLAB Symposium, 10-12 June 1974, at Frascati, Italy), Edited by B. G. Taylor, ESRO SP-106, pp. 17-24, November 1974.

"Recent Measurements with a Satellite-Borne Cooled Germanium Spectrometer, Part 2: Observations of Some Gamma-Ray Backgrounds," with G. H. Nakano and W. L. Imhof, in The Context and Status of Gamma-Ray Astronomy (Proceedings of 9th ESLAB Symposium, 10-12 June 1974, at Frascati, Italy), Edited by B. G. Taylor, ESRO SP-106, pp. 99-105, November 1974.

"A Study of Fast-Time Structure within Cosmic Gamma-Ray Bursts," with W. L. Imhof, G. H. Nakano, R. G. Johnson, J. R. Kilner, R. W. Klebesadel, and I. B. Strong, Astrophysical Journal, Vol. 198, pp. 717-725, 15 June 1975.

"Energetic Electron Precipitation and VLF Phase Disturbances at Middle Latitudes following the Magnetic Storm of 17 December 1971," with T. R. Larsen, W. L. Imhof, and T. A. Potemra, Trans. Am. Geophys. Union, Vol. 56, p. 422, June 1975.

"Cooled Germanium Spectrometer for X- and Gamma-Ray Astronomy," with G. H. Nakano and W. L. Imhof, invited review paper presented at Mullard Space Science Laboratory of University College London, May 22-23, 1975, to be published in proceedings.

"High-Resolution Measurements of Atmospheric Gamma-Rays from a Satellite," with W. L. Imhof and G. H. Nakano, submitted to J. Geophys. Res., 1975.

"Analysis of Narrow Spikes in Two Cosmic Gamma-Ray Bursts," with W. L. Imhof and G. H. Nakano, presented at COSPAR/IAU Symposium, Varna, Bulgaria, May 1975, to be published in proceedings.

"Fast-Time Spectra of Gamma-Ray Bursts," with G. H. Nakano and W. L. Imhof, presented at COSPAR/IAU Symposium, Varna, Bulgaria, May 1975, to be published in proceedings.

"Satellite Observations of X-Rays Associated with Energetic Electron Precipitation Near the Trapping Boundary," with W. L. Imhof and G. H. Nakano, J. Geophys. Res., to be published August 1975.

INTERDEPARTMENTAL COMMUNICATION

TO All 0/52-12 Personnel

DEPT/
ORGN.

BLDG/
ZONE

PLANT/
FAC.

DATE 4/28/81

FROM J. B. Reagan, Manager

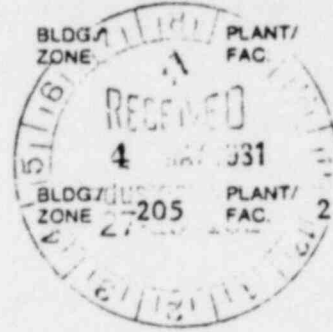
DEPT/
ORGN. 52-12

BLDG/
ZONE 27

PLANT/
FAC. 2

EXT. 45733

SUBJECT RADIOACTIVE SOURCE MONITORING



It is necessary that we use several different types of radioactive sources in our research in order to calibrate equipment. The level of radioactivity in these sources varies from low (<1 microcurie) to moderate (<10 millicurie). These sources are all accountable by LMSC to the Health Safety offices of the State of California. Appropriate accounting, storage and handling procedures for these sources must be followed to continue our license. Only those personnel who have received training in the proper handling of radioactive sources and physical examinations/film badges are authorized to handle radioactive sources. Upon completion of use or at the end of each working day, whichever occurs first, these sources must be returned to the radioactive safe.

With our pending move to Building 255 I plan to consolidate the radioactive source storage for the entire laboratory into one safe location. I am appointing Mr. Ed Gaines as Radioactive Source Safety Monitor for 0/52-12 with responsibility to me for all matters pertaining to the handling of radioactivity. Ed will approve and coordinate the procurement of all new radioactive sources with the LMSC Safety Office. He will also be responsible to me for the accounting, safe storage and handling of existing sources. In this regard he will shortly issue a detailed list of operating instructions for those who will be handling sources. I intend that these instructions be followed explicitly. Failure to follow these instructions will result in the revocation of your license to handle such sources in the future.

The handling and storage of radioactive material is a serious business regardless of the level of activity and must not be taken lightly. I expect that you will give Ed Gaines your full cooperation in this matter.

A handwritten signature in cursive script, reading "J. B. Reagan". The signature is written in dark ink and is positioned above the typed name and title.

J. B. Reagan, Manager
Space Sciences Laboratory

JBR:ms

cc: M. Walt (Info)
R. Gibson, PA Safety
A. Hammond, LMSC Safety

INTERDEPARTMENTAL COMMUNICATION

TO A. C. Hammons

DEPT./ 27-23 BLDG./ 102
ORGN. ZONE

PLANT/ 1
FAC.

DATE 10 Dec 1974
SPT/1125

FROM W. E. Harlan

DEPT./ 85-85 BLDG./ 102
ORGN. ZONE

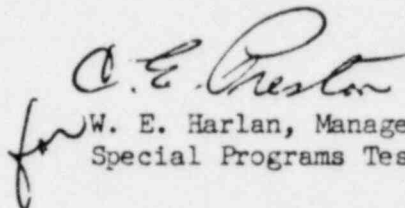
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FAC.

EXT. 2-2477

SUBJECT SUPERVISOR OF USERS OF RADIOACTIVE MATERIALS

Ref: (a) Conversation between A. C. Hammons (27-23) LMSC Safety and C. E. Preston
(85-85) Special Programs Test dated 9 December 1974

In compliance with the California OSHA requirements and as requested in Reference (a), S. I. Taimuty, Ph.D. (Nuclear Physics) has been assigned as the Special Programs Test Supervisor of Users of Radioactive Materials.


for W. E. Harlan, Manager
Special Programs Test

WEH:CEP:wp

cc: S. I. Taimuty
J. K. Miller

Attach: Radiation Experience Record, Samuel I. Taimuty

Radiation Experience Record

NAME SAMUEL I. TRIMITY ORGANIZATION CODE 85-85

1. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (CHECK ONE)	FORMAL COURSE
a. PRINCIPLES OF RADIATION PROTECTION	University of Southern California, Stanford Research Institute	25 yrs	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
b. RADIOACTIVITY MEASUREMENT TECHNIQUES	University of Southern California, Stanford Research Institute	15 yrs	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
c. MATHEMATICS BASIC TO THE USE OF RADIOACTIVITY	University of Southern California	2 yrs	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
d. BIOLOGICAL EFFECTS OF RADIATION	Stanford Research Institute	15 yrs	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

2. EXPERIENCE WITH RADIATION (ACTUAL USE OF RADIOISOTOPES OR EQUIVALENT EXPERIENCE)

ISOTOPE	MAX. AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{60}Co	500 uCi	Stanford Research Inst.	20 yrs	Radiation Effects
*	*	Univ. of Southern Calif.	3 yrs	Nuclear research
**	**	Stanford Research Inst.	20 yrs	Radiation Applications Research

3. RADIATION DETECTION INSTRUMENTS USED:

TYPE OF INSTRUMENT	RADIATION DETECTED	USE (MONITORING, SURVEYING, MEASURING)
Geiger survey inst.	β, γ	monitoring, surveying, measuring
Scintillation inst.	" "	" " "
Ionization inst.	α, β, γ, n	" " "
Various kinds of passive dosimeters	β, γ, n	" " "

Date Dec. 9, 1974 Signature Samuel I. Trimity

* $\text{TC} 99$, $\text{C}14$, $\text{Sr} 90$, $\text{Cs} 137$, millicurie quantities
 ** Many isotopes between $Z=21(\text{H}3)$ and $Z=83$, millicurie quantities

APPLICATION FOR AUTHORIZATION TO ACQUIRE RADIOACTIVE MATERIALS OR IRRADIATION SERVICES

(INSTRUCTIONS: Prepare in Duplicate)

REQUESTER NAME	ORAN NO.	TEL. EXT.	APPLICATION DATE
RADIOACTIVE MATERIAL OR RADIATION SERVICE REQUESTED			NEED DATE
NAME OF FACILITY WHERE MATERIALS ARE TO BE IRRADIATED			
NAME OF PREFERRED SUPPLIER OF RADIOACTIVE MATERIAL			
AMOUNT OF ACTIVITY			
PHYSICAL OR CHEMICAL FORM			
PROPOSED AREA FOR USE			
METHOD OF APPLICATION (Use supplemental sheets if necessary)			
(2 spaces)			
HAVE ALL PROSPECTIVE HANDLERS HAD PRE-EXPOSURE PHYSICAL EXAMINATIONS?			<input type="checkbox"/> YES <input type="checkbox"/> NO
NAME OF RADIATION CONTROL COMMITTEE APPROVED "SUPERVISOR OF USERS" OF RADIOACTIVE MATERIAL:			
LICENSES OR PERMITS THAT APPLY TO THIS APPLICATION			
<input type="checkbox"/> BY-PRODUCT MAT'L ATOMIC NO.'s 1-83		<input type="checkbox"/> SPECIAL SOURCE MAT'L	
<input type="checkbox"/> BY-PRODUCT MAT'L ATOMIC NO.'s > 84		<input type="checkbox"/> RADIOACTIVE WASTE PERMIT	
SOURCE MATERIAL:		<input type="checkbox"/> DECAYIVITY CFR 10 PART 150 NCR FORM 241	
<input type="checkbox"/> URANIUM <input type="checkbox"/> THOR			
SPECIAL NUCLEAR MATERIAL:			
<input type="checkbox"/> U ²³³ <input type="checkbox"/> U ²³⁵ <input type="checkbox"/> PU			
<input type="checkbox"/> OTHER (specify)			

COMMITTEE APPROVAL

RADIATION CONTROL NUMBER _____

LMSC ACCOUNTABILITY NUMBER ASSIGNED _____

APPLICATION APPROVED _____

CHAIRMAN, RADIATION CONTROL COMMITTEE

DATE APPROVED _____



APPLICATION FOR AUTHORIZATION TO ACQUIRE RADIO- ACTIVE MATERIALS OR IRRADIATION SERVICES



(COMPLETE IN TRIPLICATE)

REQUESTOR'S NAME

EXTENSION

ORGANIZATION

RADIOACTIVE MATERIAL OR RADIATION SERVICE REQUESTED

AMOUNT OF ACTIVITY

PHYSICAL OR CHEMICAL FORM

PROPOSED AREA FOR USE

METHOD OF APPLICATION

HAVE ALL PROSPECTIVE HANDLERS HAD
PRE-EXPOSURE PHYSICAL EXAMINATION?

YES

NO

COMMITTEE APPROVAL

FOR COMMITTEE USE:

1. PROCEDURE FOR PROCUREMENT _____

2. INSTRUMENTATION AND SAFETY EQUIPMENT _____

3. METHODS IN HANDLING _____

4. STORAGE _____

5. PERSONS INVOLVED _____

6. MONITORING _____

7. WASTE DISPOSAL _____

8. REMARKS _____

Source of Radiation Movement Approval • The following radioactive material or source of radiation is approved by Safety & Industrial Hygiene for the indicated movement.

FROM - ORGN	COL	BLDG	FAC	OR		LICENSE NO.			
TO - ORGN	COL	BLDG	FAC	ADDRESS					
TRAFFIC DOCUMENT									
DESCRIPTION OF MATERIAL OR EQUIPMENT									
LICENSES OR PERMITS THAT APPLY TO THIS MOVEMENT APPROVAL									
<input type="checkbox"/> BY-PRODUCT MAT'L ATOMIC NO.'s 1-83 _____ <input type="checkbox"/> BY-PRODUCT MAT'L ATOMIC NO.'s > 84 _____ SOURCE MATERIAL: <input type="checkbox"/> URANIUM <input type="checkbox"/> THOR _____ SPECIAL NUCLEAR MATERIALS <input type="checkbox"/> U ²³³ <input type="checkbox"/> U ²³⁵ <input type="checkbox"/> Pu _____ <input type="checkbox"/> OTHER (SPECIFY) _____			<input type="checkbox"/> SPECIAL SOURCE MAT'L _____ <input type="checkbox"/> RADIOACTIVE WASTE PERMIT _____ <input type="checkbox"/> DECIMILITY (CFR 10 PART 150 NCR FORM 241) _____						
QUANTITY INVOLVED		CURIES MICRO	CURIES MILLI	POUNDS	GRAMS	SOLID	LIQUID	GAS	
▶		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TRANSPORT GROUP OR RADIONUCLIDES			TRANSPORT INDEX		TYPE OF LABEL REQUIRED				
					<input type="checkbox"/> EXEMPT PURSUANT TO 173.391 OR 173.392 <input type="checkbox"/> RADIOACTIVE WHITE - I <input type="checkbox"/> RADIOACTIVE YELLOW - II <input type="checkbox"/> RADIOACTIVE YELLOW - III				
BEAK TEST RESULTS			DOSE RATE MEASURED		PACKAGING		BEYA & GAMMA		
			<input type="checkbox"/> BEFORE <input type="checkbox"/> AFTER		<input checked="" type="checkbox"/> BEYA & GAMMA <input type="checkbox"/> GAMMA ONLY		AT SURFACE AT ONE (1) METER _____ _____		
INSTRUMENT USED			SAFETY TAG NO.		CALIBRATED				
▶									
REMARKS									
WHITE - RADIATION PROTECTION OFFICER YELLOW - SAFETY & INDUSTRIAL HYGIENE PINK - TRAFFIC GREEN/RED - RECIPIENT FORM LMSC 1791 B-1			BY		TITLE		TIME		DATE

LOCKHEED MISSILES & SPACE COMPANY

(proposed)

Source of Radiation Movement Approval

The following radioactive material or source of radiation is approved by Safety & Industrial Hygiene for the indicated movement.

FROM - ORGN					COL	BLDG	FAC	OR	LICENSE NO.
TO - ORGN					COL	BLDG	FAC	ADDRESS	LICENSE NO.
TRAFFIC DOCUMENT									
DESCRIPTION OF MATERIAL OR EQUIPMENT									
<input type="checkbox"/> RADIATION MACHINE <input type="checkbox"/> IRRADIATED MATERIAL <input type="checkbox"/> SPECIAL SOURCE MATERIAL <input type="checkbox"/> SOURCE MATERIAL <input type="checkbox"/> RADIOACTIVE WASTE <input type="checkbox"/> OTHER <input type="checkbox"/> BY PRODUCT MATERIAL <input type="checkbox"/> SPECIAL NUCLEAR MATERIAL Specify <input type="checkbox"/>									
QUANTITY INVOLVED		CURIES MICRO MILLI		POUNDS	GRAMS	SOLID		LIQUID	GAS
TRANSPORT GROUP OR RADIONUCLIDES		TRANSPORT INDEX		TYPE OF LABEL REQUIRED		<input type="checkbox"/> EXEMPT PURSUANT TO 173.391 OR 173.392 <input type="checkbox"/> RADIOACTIVE WHITE - I <input type="checkbox"/> RADIOACTIVE YELLOW - II <input type="checkbox"/> RADIOACTIVE YELLOW - III			
LEAK TEST RESULTS		DOSE RATE MEASURED		PACKAGING		BETA & GAMMA		AT SURFACE	AT ONE (1) METER
INSTRUMENT USED		SAFETY TAG NO.		CALIBRATED		GAMMA ONLY			
REMARKS									
WHITE - RADIATION PROTECTION OFFICER YELLOW - SAFETY & INDUSTRIAL HYGIENE PINK - TRAFFIC GREEN - RECIPIENT FORM LMSC 1791 B			BY	TITLE	TIME	DATE			