DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY COMMUNICATIONS-ELECTRONICS COMMAND
AND FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

May 23, 2000

Directorate for Safety

U.S. Nuclear Regulatory Commission
Region I
Attention: Licensing Assistance Section
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

Dear Licensing Assistance Section:

This refers to U.S. Nuclear Regulatory Commission (NRC) License Number 29-01022-07, Docket Number 030-06989.

We request an amendment to the aforementioned NRC license to authorize us in lieu of representatives of JLS.

The individuals performing the installation are Stanley Kronenberg, PhD and George J. Brucker, PhD. Enclosures 1 and 2 are the qualifications of Drs. Kronenberg and Brucker. The installation will be in accordance with the JLS Installation and Operation Manual for Enclosure 3 is the installation procedure excerpted from the JLS Manual.

Your expeditious processing of this amendment request is appreciated.

Our Point of Contact is Mr. Barry J. Silber or the undersigned, Facsimile on (732) 532-6403 or (732) 542-7161; Voice on (732) 427-4427/3112.

Sincerely,

Encls
as

STEPHEN G. LaPOINT
Director
Directorate for Safety

Copy Furnished:

Commander, U.S. Army Materiel Command, ATTN: AMCSF-P, 5001 Eisenhower Avenue, Alexandria, Virginia 22333-0001

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BIOGRAPHY - STANLEY KRONENBERG

Research Physicist with U.S. Army, CECOM, Night Vision Directorate, Fort Monmouth, NJ. Works for the Project Manager, Nuclear Biological Chemical (NBC) Defense Systems. Conducts basic research in detection and measurement of nuclear radiation, in the development of radiation detectors, and application of nuclear radiation techniques in the areas of radiation safety and risk assessment, terrorist countermeasures and medicine.

Was hired in 1953 by the U.S. Army Signal Corps, Fort Monmouth, NJ as a member of the Nucleonics Division and in 1962 became the director of that division. Headed this organization for 21 years while it . . . and the laboratory it was part of changed names several times. In this capacity participated in many atmospheric and later underground nuclear weapon tests as project officer and conducted experiments to obtain early radiation history of exploding nuclear weapons (prompt initial radiation). Cooperated closely with the Defense Nuclear Agency, the Department of Energy, and NIST. Developed numerous novel systems to measure nuclear radiation doses and dose rates and holds many patents in these areas.

Was born in [redacted]. Studied Physics and Chemistry at the University of Vienna, Austria, specializing in quantum mechanics and nuclear physics. Obtained the doctorate in physics from the University of Vienna in 1952.

During his career with the U.S. Army he published approximately 100 scientific papers in the area of nuclear radiation physics and is recognized world wide as an expert in his field. Served since 1959 as consultant to FEMA and maintains close professional ties with the Nuclear Radiation Physics Group at NIST. U.S. Representative to the NATO Research Group RSG23 (previously RSG5).

Receipient of numerous honors and awards, among them Meritorious Civil Service Medal, three Department of the Army Research and Development Achievement Awards, and FEMA Outstanding Public Service Award..

Resides in [redacted]. Is married to [redacted] (born [redacted]) who also has a PhD in Physics, children are [redacted] in Physics (MIT), and [redacted] who is a musician.

Enjoys his work as a researcher very much and does not plan ever to retire.

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George J. Brucker Security Clearance- [redacted]

Summary Of Experience

Designed systems for survival in nuclear and space radiation environments, provided analyses to verify vulnerability and survivability of spacecraft or ground systems, and carried out research and characterization studies of semiconductor components and subsystems.

Details Of Relevant Experience

Modern Technologies Corporation, Consultant/Army, Fort Monmouth, N.J., Joined MTC June 1992

Design experiments and investigate the characteristics of PMOSFET devices which have been supplied by Sandia National Labs. and by REM to Fort Monmouth, and any other radiation detector components which may be developed by future contracts.

Design experiments and investigate the properties of gamma ray and x-ray directional sensors. Our research indicates that directional sensors that we have developed may lead to field instruments for detecting and locating hidden nuclear materials, mines, and personnel. This research has become important to the Army and now is a major effort of the research team.

Consult with and advise the dosimetry group in matters pertaining to radiac instrument design, and to radiation hardening test equipment which is required for use in dose rate and total dose environments of various facilities.

Prepare technical reports of experimental results and assess the results relative to Fort Monmouth's requirements for radiac instruments.

Radiation Effects Consultants, Incorporated 1982, Consultant, Goddard Space Flight Center,Md.,1982 To The Present Time with some 15 contracts for a total dollar value of about 150 thousand dollars and 24 publications based on the contract work.

Consultant to E.G.Stassinopoulos, Goddard Space Flight Center

Design Experiments to characterize semi-conductor devices for Single Event Effects in space.

Analyze ground test and spacecraft data relative to the effects of Cosmic Ray and Trapped Electron and Proton Environments. For example, data from GOES and CRRES spacecraft.

RCA/GE Astro-Space Division, Senior Staff Scientist, 1962-1992

Developed electric propulsion techniques, utilizing charge exchange and electric field acceleration.

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Investigated and designed a dielectric tape camera for direct conversion of optical signals to electrical signals, a rugged electron beam gun for reading data from the tape, and a vacuum chamber to house the camera.

Designed calibration techniques to determine spectral response of Return Beam Vidicons for use in spacecraft.

Studied and characterized the Silicon Intensifier Tube for use in the television system of the Apollo spacecraft and the Moon Rover Vehicle.

Developed a miniature ion gauge for use in space subsystems to prevent premature turn-on of high voltage.

Experimentally determined the basic physical mechanisms which describe the recovery from radiation damage of silicon solar cells doped with lithium.

Assisted in the development of radiation hardened processing of CMOS/Bulk and CMOS/SOS technologies for the fabrication of memories, microprocessors, and logic devices.

Designed and carried out experiments to characterize the above state-of-the-art semiconductor integrated circuits in nuclear and space environments.

Designed and carried out tests to simulate charging up of thermal control materials in the outer space environment with ITO conductive coatings as protection.

Prepared assessments and analyses of the degradation of devices due to ionization or bulk damage and the upset, latchup, and burnout of parts due to cosmic ray ions.

Applied the latest shielding codes in analyzing spacecraft for a variety of orbits in space, extending from low earth to geosynchronous altitudes.

Developed and presented seminars in radiation effects which address the ionization damage, cosmic ray Single Event Upset, and health physics issues of spacecraft design and plant management.

Fort Monmouth, Nuclear Scientist, 1950-1962

Served as research physicist in the field of radiation effects in organic and inorganic scintillating materials.

Designed and developed experimental instruments for characterizing nuclear environments created in the Pacific Weapons Tests.

Assigned as a research physicist in the physics department of the Stevens Institute of Technology in a program supported by Fort Monmouth to develop high energy storage systems, high voltage and

current plasma switches, r.f. breakdown physics in low pressure gases, and techniques for capturing electrons by a fast rising betatron magnetic field.

Publications

Prepared and published 90 papers in the field of radiation effects. List of publications is attached to resume.

Two patents have been awarded for discoveries resulting from research at Army Labs, Fort Monmouth N.J. Five more patent applications are pending.

Monograph entitled "Electron Yields From Irradiated Targets Versus Photon Incident Angle And Quantum Energy", Published by Government Printing Office, N.Y. April, 1999. Based on work at Fort Monmouth.

Education

PhD, Nuclear Physics, New York University,
M.A., Nuclear Physics, Columbia University,
B.S., Physics and Mathematics, St. Peters College

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Awards

NASA Technical Excellence Award for developing techniques of characterizing bipolar transistors in space environments.

RCA Engineering Excellence Award for research in radiation damage of silicon solar cells doped with lithium.

Two Best Paper Awards of the IEEE Nuclear and Space Radiation Effects Conferences that are held annually.

Employment History

Modern Technology Corporation, Consultant, Present
Radiation Effects Consultants, Consultant, Present
RCA/GE, Senior Staff Scientist, 1962-1992
Fort Monmouth, Nuclear Physicist, 1950-1962

J L SHEPHERD & ASSOCIATES
1010 ARROYO AVE., SAN FERNANDO, CALIFORNIA 91340-1822
818-898-2361 FAX 818-361-8095

INSTALLATION & OPERATION MANUAL FOR CALIBRATOR

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End 3

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INSTALLATION & OPERATION MANUAL FOR [ ]

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4. If contamination above this level is detected, remove the device from service immediately and notify the manufacturer.

NOTE: The 0.005 μCi level is that generally prescribed by Regulatory Authorities; individual institutions may require more stringent standards.

II. INSTALLATION

A. REMOVAL OF [ ] FROM 20WC-5 OVERPACK (if required):

1. Using a 13/16" or 3/4" deep well socket (as required), remove the nuts from the 16 each 1/2" rods located approximately 5" from the outer rim of the top of the overpack.

2. Sling the top chine of the overpack or attach a 1/2-13 eyebolt to the center left point and lift the top section, using a vertical lift so as not to bend the rods. The top section is approximately 16" high.

3. Remove any wood shoring from the top and sides of the device in the overpack.

4. Attach a cable or chain to the eyebolts provided and lift the device vertically from the overpack.

5. Remove the metal or wood round affixed to the bottom of the device.

B. [ ] ASSEMBLY

The [ ] is shipped in four parts: Base, Source Shield, Operational Tower assembly, and Control Panel.

1. Bolt the calibrator to the base provided.

2. Place the calibrator complete with Cesium-137 sources in the desired location.

3. The operating tower which contains the pneumatic assembly is shipped with the outside cover or shroud attached. Remove the shroud from the tower assembly. NOTE: To remove the shroud, use the following procedure:

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(a) Remove the piece of copper tubing with compression fittings, that extends from a fitting on the side of this tower base to the tee outlet from the oiler-filter-regulator.

(b) Open the cover and disconnect the Jones plug inside the cover.

(c) Unbolt the cover from the tower base and remove.

(d) Remove the padlock and lock off bolt which holds the cylinder(s) in the extended position. These may be replaced later to lock the source assembly in the "OFF" position.

4. Remove the shipping plate from the top of the calibrator. The dose rate at the top of the irradiator will be approx. 1/mR/hr - at contact. Dose rates surrounding the calibrator with all sources in the "OFF" position, will be less than 5mR/hr at one foot from the surface.

5. Place the pneumatic cylinder assembly on top of the calibrator. Locate over the bolt pattern provided, nothing the orientation of the tower with the arrow stamped on top of the base plate pointing toward the beamport. Secure the tower to the shield with washers and nuts provided.

6. Block the beamport with the solid lead plug provided, if it is not already in position.

7. From the position at the rear of the calibrator (opposite the beamport), raise the source rod, which is at the centerline of the calibrator, slightly. Engage the threaded end of the rod into the tapped hole at the end of the fixture which is mounted to the cylinder rod. Thread the rod in until the dimensional requirement of the source centering sketch are met. Firmly tighten the source rod set screws. Installation of the source assembly is now complete.

   NOTE: Care must be taken so that no parts, chips, or foreign materials drop into the tube, (at the top of the calibrator) through which the source rod assemblies operate.

8. Mount the shroud over the cover assembly, reattaching the Jones connector which connects all wiring from the inside of the tower to the components which are mounted on the tower cover.

9. Next, connect air supply rated 90 psi or greater, to the inlet of the oiler-filter-regulator. NOTE: the Primary unit requires a setting of 60 lbs. This is factory adjusted, and may be adjusted slightly in the field. See adjustment section. Next, fill the oiler section of the oiler-filter-regulator with SAE 10 weight non-detergent oil as indicated in the instructions for the oiler-filter-regulator contained as part of this manual.

C. CONTROL PANEL INSTALLATION

1. All noted in #3 above, all cabling from the [redacted] must be connected to the amphenol connectors in the back of the control cabinet. All radiation warning lights, sirens, alarms, etc., must be connected to corresponding amphenol connectors as marked in the control cabinet.

2. Plug the control cabinet into a 115V outlet, rated at 10 amps.

INSTALLATION IS NOW COMPLETE

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This is to acknowledge the receipt of your letter/application dated

5/23/00, and to inform you that the initial processing which includes an administrative review has been performed.

Amend 29-01022-07

☒ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 128201
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader