

EDO Principal Correspondence Control

FROM: DUE: 12/29/10

EDO CONTROL: G20100706

DOC DT: 11/27/10

FINAL REPLY:

Thomas Saporito
Jupiter, Florida

TO:

Vietti-Cook, SECY

FOR SIGNATURE OF :

** GRN **

CRC NO: 10-0508

Miller, FSME

DESC:

2.206 - X-ray Backscanners - Scintrex, Trace
Corporation and Control Screening
(EDATS: SECY-2010-0564)

ROUTING:

Borchardt
Weber
Virgilio
Ash
Muessle
OGC/GC
Burns, OGC
Mensah, NRR
Scott, OGC
Brock, OEDO

DATE: 11/29/10

ASSIGNED TO:

FSME

CONTACT:

Miller

SPECIAL INSTRUCTIONS OR REMARKS:

Template: SECY-017

E-RIDS: SECY-01

EDATS

Electronic Document and Action Tracking System

EDATS Number: SECY-2010-0564

Source: SECY

General Information

Assigned To: FSME

OEDO Due Date: 12/29/2010 11:00 PM

Other Assignees:

SECY Due Date: NONE

Subject: 2.206 - X-ray Backscanners - Scintrex, Trace Corporation and Control Screening

Description:

CC Routing: OGC; Tanya.Mensah@nrc.gov; Catherine.Scott@nrc.gov

ADAMS Accession Numbers - Incoming: NONE

Response/Package: NONE

Other Information

Cross Reference Number: G20100706, LTR-10-0508

Staff Initiated: NO

Related Task:

Recurring Item: NO

File Routing: EDATS

Agency Lesson Learned: NO

OEDO Monthly Report Item: NO

Process Information

Action Type: 2.206 Review

Priority: Medium

Signature Level: FSME

Sensitivity: None

Urgency: NO

Approval Level: No Approval Required

OEDO Concurrence: NO

OCM Concurrence: NO

OCA Concurrence: NO

Special Instructions:

Document Information

Originator Name: Thomas Saporito

Date of Incoming: 11/27/2010

Originating Organization: Citizens

Document Received by SECY Date: 11/29/2010

Addressee: Annette Vietti-Cook, SECY

Date Response Requested by Originator: 12/29/2010

Incoming Task Received: 2.206

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

Date Printed: Nov 29, 2010 08:58

PAPER NUMBER: LTR-10-0508

LOGGING DATE: 11/29/2010

ACTION OFFICE: EDO

AUTHOR: Thomas Saporito

AFFILIATION: FL

ADDRESSEE: Annette Vietti-Cook

SUBJECT: 2.206 Petition - X-ray backscanners - seeking enforcement action against autoclear, Scintrex Trace Corporation, and Control Screening

ACTION: Appropriate

DISTRIBUTION: RF

LETTER DATE: 11/27/2010

ACKNOWLEDGED: No

SPECIAL HANDLING: 2.206 Petition

NOTES:

FILE LOCATION: ADAMS

DATE DUE:

DATE SIGNED:

EDO --G20100706

Mike, Linda

From: Thomas Saporito [saporito3@gmail.com]
Sent: Saturday, November 27, 2010 7:49 PM
To: NRCExecSec Resource
Cc: Jaczko, Gregory; Evans, Carolyn; DeMiranda, Oscar; Checkle, Melanie; sedat@msg.ucsf.edu
Subject: 2.206 Petition (X-ray backscanners)
Attachments: 2010.11.27 Petition (x-ray backscanners).pdf

Dear Ms. Vietti-Cook:

Please provide a copy of the attached 2.206 Petition to the Executive Director for Operations with the U.S. Nuclear Regulatory Commission.

The original copy was sent via U.S. mail.

Kind regards,

--

Thomas Saporito
Post Office Box 8413
Jupiter, Florida 33468
Phone: (561) 972-8363
Email: saporito3@gmail.com

Advocate of GreenPeace USA - Think Before Printing and Save a Tree!

UNITED STATES NUCLEAR REGULATORY COMMISSION
BEFORE THE HON. WILLIAM BORCHARDT

In the Matter of:

AUTOCLEAR, SCINTREX TRACE
CORPORATION, AND CONTROL
SCREENING

DATE: 27 NOV 2010

License No. 29-31303.01

PETITION UNDER 10 C.F.R. §2.206 SEEKING ENFORCEMENT
ACTION AGAINST AUTOCLEAR, SCINTREX TRACE
CORPORATION, AND CONTROL SCREENING

NOW COMES, Thomas Saporito, (Petitioner or Saporito) and submits a "*Petition Under 10 C.F.R. §2.206 Seeking Enforcement Action Against Autoclear, Scintrex Trace Corporation, and Control Screening*" (hereinafter "Petition"). For the reasons stated below, the U.S. Nuclear Regulatory Commission (NRC) should grant the Petition as a matter of law:

NRC HAS JURISDICTION AND AUTHORITY TO GRANT PETITION

The NRC is the government agency charged by the United States Congress to protect public health and safety and the environment related to operation and manufacture of commercial equipment containing radioactive sources in the United States of America (USA). Congress charged the NRC with this grave responsibility in creation of the agency through passing the Energy Reorganization Act of 1974, as amended, 42 U.S.C.A. §5851 (ERA). In the instant action, *Autoclear, Scintrex Trace Corporation, and Control Screening* are collectively and singularly a "licensee" of the NRC and subject to NRC regulations and authority in the regulation of Nuclear Materials, Medical, Academic, and Industrial Uses of Nuclear Material under 10 C.F.R. §19, 20, 21, 30, 32.26, 32.27, 32.28, 32.29 and under other NRC regulations and authority in the operation and manufacture of commercial x-ray backscanners used at airports and facilities throughout the United States of America. Thus, through Congressional action in creation of the agency; and the fact that the named-actionable parties identified above by Petitioner are collectively and singularly a licensee of the NRC, the agency has jurisdiction and authority to grant the Petition.

STANDARD OF REVIEW

A. Criteria for Reviewing Petitions Under 10 C.F.R. §2.206

The staff will review a petition under the requirements of 10 C.F.R. §2.206 if the request

meets all of the following criteria:

- The petition contains a request for enforcement-related action such as issuing an order modifying, suspending, or revoking a license, issuing a notice of violation, with or without a proposed civil penalty, etc.
- The facts that constitute the basis for taking the particular action are specified. The petitioner must provide some element of support beyond the bare assertion. The supporting facts must be credible and sufficient to warrant further inquiry.
- There is no NRC proceeding available in which the petitioner is or could be a party and through which petitioner's concerns could be addressed. If there is a proceeding available, for example, if a petitioner raises an issue that he or she has raised or could raise in an ongoing licensing proceeding, the staff will inform the petitioner of the ongoing proceeding and will not treat the request under 10 C.F.R. §2.206.

B. Criteria for Rejecting Petitions Under 10 C.F.R. §2.206

- The incoming correspondence does not ask for an enforcement-related action or fails to provide sufficient facts to support the petition but simply alleges wrongdoing, violations of NRC regulations, or existence of safety concerns. The request cannot be simply a general statement of opposition to nuclear power or a general assertion without supporting facts (e.g., the quality assurance at the facility is inadequate). These assertions will be treated as routine correspondence or as allegations that will be referred for appropriate action in accordance with MD 8.8, "Management of Allegations".
- The petitioner raises issues that have already been the subject of NRC staff review and evaluation either on that facility, other similar facilities, or on a generic basis, for which a resolution has been achieved, the issues have been resolved, and the resolution is applicable to the facility in question. This would include requests to reconsider or reopen a previous enforcement action (including a decision not to initiate an enforcement action) or a director's decision. These requests will not be treated as a 2.206 petition unless they present significant new information.
- The request is to deny a license application or amendment. This type of request should initially be addressed in the context of the relevant licensing action, not under 10 C.F.R. 2.206.
- The request addresses deficiencies within existing NRC rules. This type of request should be addressed as a petition for rulemaking.

See, Volume 8, Licensee Oversight Programs, Review Process for 10 C.F.R. Petitions, Handbook 8.11 Part III.

**REQUEST FOR ENFORCEMENT-RELATED ACTION TO MODIFY,
SUSPEND, OR REVOKE A LICENSE AND ISSUE A NOTICE OF
VIOLATION WITH A PROPOSED CIVIL PENALTY**

A. Request for Enforcement-Related Action

Petitioner respectfully requests that the NRC take escalated enforcement action against the above-captioned licensee and suspend, or revoke the NRC license(s) granted to the licensee for operation and manufacture of x-ray backscanners; and that the NRC issue a notice of violation with a proposed civil penalty against the collectively named and each singularly named licensee captioned-above in this matter. In addition, Petitioner further requests that the NRC:

- require the licensee to determine and to document the mutagenic effects of x-ray backscanner equipment radiation emissions on the large population of older air travelers, greater than 65-years of age;
- require the licensee to determine and to document the mutagenesis-provoking radiation (which has been demonstrated to lead to breast cancer) effects of x-ray backscanner equipment radiation emissions on the female population of air travelers;
- require the licensee to determine and to document the amount of damage to white blood cells perfusing the skin as a direct or indirect result of the effects of x-ray backscanner equipment radiation emissions on the large population of air travelers;
- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions on the large population of air travelers who are immunocompromised individuals - HIV and cancer patients likely to be at risk for cancer induction by the high skin dose;
- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions to children and adolescents on the large population of air travelers at risk of radiation emission;
- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions on the large population of air travelers which are pregnant women and the effects of said equipment radiation emissions on the fetus of the women;
- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions on the large population of air travelers who are males with testicles which are at risk for sperm mutagenesis;
- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions on the cornea and thymus for the large population of air travelers;

- require the licensee to determine and to document the effects of x-ray backscanner equipment radiation emissions on humans as a direct or indirect result of any glitch in power at any point in the hardware or software which may cause the equipment to stop and thereby emit an intense radiation dose to a single spot on the skin;
- require the licensee to determine and to document the protective methods employed by the equipment to prevent any glitch in power at any point in the hardware or software which may cause the equipment to stop and thereby emit an intense radiation dose to a single spot on the skin;
- require the licensee to determine and to document the methods in which the licensee intends to oversee problems with overall dose after repair or software problems;
- require the licensee to determine and to document the written procedures and policies that the licensee intends to rely to prevent anyone from adjusting the x-ray backscanning equipment in such a manner as to cause an increase in dose received by air travelers; and
- require the licensee to determine and to document the written procedures and policies that the licensee intends to rely to prevent operation of x-ray backscanners in such a manner as to scan the groin area of air travelers more slowly leading to a much higher total dose.

B. Facts That Constitute the Basis for Taking the Requested Enforcement-Related Action Requested by Petitioner

Petitioner avers here that on April 6, 2010, John Sedat, Ph.D. (Sedat), Marc Shuman, M.D. (Shuman), David Agard, Ph.D. (Agard), and Robert Stroud, Ph.D. (Stroud), (hereinafter "Scientists") employed at the University of California San Francisco (UCSF), authored a letter¹ to Dr. John P. Holdren (Holdren), Assistant to the President for Science and Technology in which the Scientists made known the following concerns:

- A) The large population of older travelers, >65 years of age, is particularly at risk from the mutagenic effects of the X-rays based on the known biology of melanocyte aging.
- B) A fraction of the female population is especially sensitive to mutagenesis-provoking radiation leading to breast cancer. Notably, because these women, who have defects in DNA repair mechanisms, are particularly prone to cancer, X-ray mammograms are not performed on them. The dose to breast tissue beneath the skin represents a similar risk.
- C) Blood (white blood cells) perfusing the skin is also at risk.
- D) The population of immunocompromised individuals--HIV and cancer patients (see above) is likely to be at risk for cancer induction by the high skin dose.

¹ See enclosure one.

- E) The risk of radiation emission to children and adolescents does not appear to have been fully evaluated.
 - F) The policy towards pregnant women needs to be defined once the theoretical risks to the fetus are determined.
 - G) Because of the proximity of the testicles to skin, this tissue is at risk for sperm mutagenesis.
 - H) Have the effects of the radiation on the cornea and thymus been determined?
- C. There Is No NRC Proceeding Available in Which the Petitioner is or Could be a Party and Through Which Petitioner's Concerns Could be Addressed**

Petitioner avers here that there is no NRC proceeding available in which the Petitioner is or could be a party and through which Petitioner's concerns could be addressed.

CONCLUSION

FOR ALL THE ABOVE STATED REASONS, and because Petitioner has amply satisfied all the requirements under 10 C.F.R. §2.206 for consideration of [his] Petition, the NRC should grant Petitioner's requests made in the Petition as a matter of law.

Respectfully submitted,



Thomas Saporito, *pro se*
Petitioner
Post Office Box 8413
Jupiter, Florida 33468-8413
Voice: (561) 972-8363
Email: saporito3@gmail.com

CERTIFICATE OF SERVICE

I HEREBY CERTIFY, that on this 27th day of November, 2010, a copy of foregoing document was provided to those identified below by means shown:

Hon. William Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
{Sent via U.S. Mail and electronic mail}

Melanie Checkle, Allegations Coordinator
U.S. Nuclear Regulatory Commission
Region II Headquarters
Atlanta, Georgia 30303
{Sent via electronic mail}

Hon. Gregory B. Jaczko, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
{Sent via electronic mail}

Oscar DeMiranda
Senior Allegations Coordinator
U.S. Nuclear Regulatory Commission
Region II Headquarters
Atlanta, Georgia 30303
{Sent via electronic mail}

Carolyn Evans, Dir. of Enforcement
U.S. Nuclear Regulatory Commission
Region II Headquarters
Atlanta, Georgia 30303
{Sent via electronic mail}

John w. Sedat, Ph.D.
University of California
Dept. of Biochemistry & Biophysics
600 16th Street
N412D, MC2240
San Francisco, CA 94158-2517
{Sent via electronic mail}

Local and National Media Sources



By: _____
Thomas Saporito

Enclosure-One



University of California
San Francisco

April 6, 2010

John W. Sedat, Ph.D.
Professor Emeritus
Department of Biochemistry
and Biophysics
600 16th Street
N412D, MC 2240
San Francisco, CA 94158-2517

tel: 415/476-4156
fax: 415/514-4242
e-mail: sedat@msg.ucsf.edu

Dr. John P. Holdren
Assistant to the President for Science and Technology

Dear Dr. Holdren:

We, a number of University of California, San Francisco faculty, are writing—see attached memo—to call your attention to our concerns about the potential serious health risks of the recently adopted whole body back scatter X-ray airport security scanners. This is an urgent situation as these X-ray scanners are rapidly being implemented as a primary screening step for all air travel passengers.

By way of introduction one of us (John Sedat) met you recently when he and his wife Dr. Elizabeth Blackburn, a 2009 Nobel Laureate, talked with President Obama last December. Dr. Sedat is Professor Emeritus in Biochemistry and Biophysics at the University of California, San Francisco, with expertise in imaging. He is also a member of the National Academy of Sciences. The other cosigners include Dr. Marc Shuman, an internationally well known and respected cancer expert and UCSF professor, as well as Drs. David Agard and Robert Stroud, who are UCSF Professors, X-ray crystallographers, imaging experts and NAS members.

Sincerely yours,

John Sedat, Ph.D

David Agard, Ph.D.

Marc Shuman, M.D.

Robert Stroud, PhD

LETTER OF CONCERN

We are writing to call your attention to serious concerns about the potential health risks of the recently adopted whole body backscatter X-ray airport security scanners. This is an urgent situation as these X-ray scanners are rapidly being implemented as a primary screening step for all air travel passengers.

Our overriding concern is the extent to which the safety of this scanning device has been adequately demonstrated. This can only be determined by a meeting of an impartial panel of experts that would include medical physicists and radiation biologists at which all of the available relevant data is reviewed.

An important consideration is that a large fraction of the population will be subject to the new X-ray scanners and be at potential risk, as discussed below. This raises a number of 'red flags'. Can we have an urgent second independent evaluation?

The Red Flags

The physics of these X-rays is very telling: the X-rays are Compton-Scattering off outer molecule bonding electrons and thus inelastic (likely breaking bonds).

Unlike other scanners, these new devices operate at relatively low beam energies (28keV). The majority of their energy is delivered to the skin and the underlying tissue. Thus, while the dose would be safe if it were distributed throughout the volume of the entire body, the dose to the skin may be dangerously high.

The X-ray dose from these devices has often been compared in the media to the cosmic ray exposure inherent to airplane travel or that of a chest X-ray. However, this comparison is very misleading: both the air travel cosmic ray exposure and chest X-rays have much higher X-ray energies and the health consequences are appropriately understood in terms of the whole body volume dose. In contrast, these new airport scanners are largely depositing their energy into the skin and immediately adjacent tissue, and since this is such a small fraction of body weight/vol, possibly by one to two orders of magnitude, the real dose to the skin is now high.

In addition, it appears that real independent safety data do not exist. A search, ultimately finding top FDA radiation physics staff, suggests that the relevant radiation quantity, the Flux [photons per unit area and time (because this is a scanning device)] has not been characterized. Instead an indirect test (Air Kerma) was made that emphasized the whole body exposure value, and thus it appears that the danger is low when compared to cosmic rays during airplane travel and a chest X-ray dose.

In summary, if the key data (flux-integrated photons per unit values) were available, it would be straightforward to accurately model the dose being deposited in the skin and

adjacent tissues using available computer codes, which would resolve the potential concerns over radiation damage.

Our colleagues at UCSF, dermatologists and cancer experts, raise specific important concerns:

- A) The large population of older travelers, >65 years of age, is particularly at risk from the mutagenic effects of the X-rays based on the known biology of melanocyte aging.
- B) A fraction of the female population is especially sensitive to mutagenesis-provoking radiation leading to breast cancer. Notably, because these women, who have defects in DNA repair mechanisms, are particularly prone to cancer, X-ray mammograms are not performed on them. The dose to breast tissue beneath the skin represents a similar risk.
- C) Blood (white blood cells) perfusing the skin is also at risk.
- D) The population of immunocompromised individuals--HIV and cancer patients (see above) is likely to be at risk for cancer induction by the high skin dose.
- E) The risk of radiation emission to children and adolescents does not appear to have been fully evaluated.
- F) The policy towards pregnant women needs to be defined once the theoretical risks to the fetus are determined.
- G) Because of the proximity of the testicles to skin, this tissue is at risk for sperm mutagenesis.
- H) Have the effects of the radiation on the cornea and thymus been determined?

Moreover, there are a number of 'red flags' related to the hardware itself. Because this device can scan a human in a few seconds, the X-ray beam is very intense. Any glitch in power at any point in the hardware (or more importantly in software) that stops the device could cause an intense radiation dose to a single spot on the skin. Who will oversee problems with overall dose after repair or software problems? The TSA is already complaining about resolution limitations; who will keep the manufacturers and/or TSA from just raising the dose, an easy way to improve signal-to-noise and get higher resolution? Lastly, given the recent incident (on December 25th), how do we know whether the manufacturer or TSA, seeking higher resolution, will scan the groin area more slowly leading to a much higher total dose?

After review of the available data we have already obtained, we suggest that additional critical information be obtained, with the goal to minimize the potential health risks of

total body scanning. One can study the relevant X-ray dose effects with modern molecular tools. Once a small team of appropriate experts is assembled, an experimental plan can be designed and implemented with the objective of obtaining information relevant to our concerns expressed above, with attention paid to completing the information gathering and formulating recommendations in a timely fashion.

We would like to put our current concerns into perspective. As longstanding UCSF scientists and physicians, we have witnessed critical errors in decisions that have seriously affected the health of thousands of people in the United States. These unfortunate errors were made because of the failure to recognize potential adverse outcomes of decisions made at the federal level. Crises create a sense of urgency that frequently leads to hasty decisions where unintended consequences are not recognized. Examples include the failure of the CDC to recognize the risk of blood transfusions in the early stages of the AIDS epidemic, approval of drugs and devices by the FDA without sufficient review, and improper standards set by the EPA, to name a few. Similarly, there has not been sufficient review of the intermediate and long-term effects of radiation exposure associated with airport scanners. There is good reason to believe that these scanners will increase the risk of cancer to children and other vulnerable populations. We are unanimous in believing that the potential health consequences need to be rigorously studied before these scanners are adopted. Modifications that reduce radiation exposure need to be explored as soon as possible.

In summary we urge you to empower an impartial panel of experts to reevaluate the potential health issues we have raised before there are irrevocable long-term consequences to the health of our country. These negative effects may on balance far outweigh the potential benefit of increased detection of terrorists.

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(148.184.100.43) with Microsoft SMTP Server id 8.1.393.1; Sat, 27 Nov 2010
19:49:38 -0500

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X-SBRS: 4.4

X-MID: 27334866

X-fn: 2010.11.27 Petition (x-ray backscanners).pdf

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with ESMTP; 27 Nov 2010 19:49:37 -0500

Received: by iwn38 with SMTP id 38so2805980iwn.14 for <multiple
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Received: by 10.231.10.198 with SMTP id q6mr3474565ibq.92.1290905376578;
Sat, 27 Nov 2010 16:49:36 -0800 (PST)

Return-Path: <aporito3@gmail.com>

Received: from [28.254.153.142] ([66.87.0.142]) by mx.google.com with
ESMTPS id 34sm3942856ibi.20.2010.11.27.16.49.29 (version=TLSv1/SSLv3
cipher=RC4-MD5); Sat, 27 Nov 2010 16:49:34 -0800 (PST)

Message-ID: <4CF1A710.10701@gmail.com>

Disposition-Notification-To: Thomas Saporito <aporito3@gmail.com>

Date: Sat, 27 Nov 2010 19:49:20 -0500

From: Thomas Saporito <aporito3@gmail.com>

Reply-To: <aporito3@gmail.com>

User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.2.12) Gecko/20101027
Lightning/1.0b2 Thunderbird/3.1.6

MIME-Version: 1.0

To: Annette Vietti-Cook <NRCExecSec@nrc.gov>

CC: <gregory.jaczko@nrc.gov>, Carolyn Evans <Carolyn.Evans@nrc.gov>, Oscar
DeMiranda <Oscar.Demiranda@nrc.gov>, Melanie Checkle
<Melanie.Checkle@nrc.gov>, <sedat@msg.ucsf.edu>
Subject: 2.206 Petition (X-ray backscanners)
Content-Type: multipart/mixed;
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