UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 25, 1996

The Honorable Dan Schaefer, Chairman
Subcommittee Energy and Power
Committee on Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed for your information is a copy of a petition for rulemaking (PRM-35-14) requesting that the Nuclear Regulatory Commission (NRC) amend 10 CFR Part 35. The petition was filed with the NRC by IsoStent, Inc.

The petition requests that the NRC amend its regulations by adding a new section to address permanently implanted intraluminal stents, including phosphorus-32 and strontium-89 radioisotope stents. These stents would be permanently implanted in the patient's vessels and arteries. The petitioner also requests that the NRC add a new section that would specify training and experience requirements for qualified physicians responsible for placing radioisotope stents in patients.

Also enclosed is a copy of the Federal Register notice that contains additional information concerning the petition. The notice will be published requesting public comment for a 75-day period.

Sincerely,

Dennis K. Rathbun. Director
Office of Congressional Affairs

Enclosures:
1. PRM-35-14
2. Federal Register Notice

cc: Rep. Frank Pallone

CCS2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 25, 1996

The Honorable Lauch Faircloth, Chairman
Subcommittee on Clean Air, Wetlands, Private
Property and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Enclosed for your information is a copy of a petition for rulemaking (PRM-35-14) requesting that the Nuclear Regulatory Commission (NRC) amend 10 CFR Part 35. The petition was filed with the NRC by IsoStent, Inc.

The petition requests that the NRC amend its regulations by adding a new section to address permanently implanted intraluminal stents, including phosphorus-32 and strontium-89 radioisotope stents. These stents would be permanently implanted in the patient's vessels and arteries. The petitioner also requests that the NRC add a new section that would specify training and experience requirements for qualified physicians responsible for placing radioisotope stents in patients.

Also enclosed is a copy of the Federal Register notice that contains additional information concerning the petition. The notice will be published requesting public comment for a 75-day period.

Sincerely,

Dennis K. Rathbun. Director
Office of Congressional Affairs

Enclosures:
1. PRM-35-14
2. Federal Register Notice

cc: Senator Bob Graham

IsoStent, Inc.

PRM-35-14

May 9, 1996

Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attn.: Chief, Docketing and Service Branch

re: **Petition for Rulemaking**

Dear Mr. Secretary:

Pursuant to Part 2.802 of Title 10 of the Code of Federal Regulations, IsoStent, Inc. respectfully requests that the Nuclear Regulatory Commission amend its current regulations under Part 35 in order to address an innovative approach for the treatment of stenotic arteries and vessels with low-activity, beta-emitting stents. Preliminary data indicates that stents combined with a low-activity, beta-emitting source (less than 3 microCuries per millimeter of length) may significantly reduce restenosis (renarrowing) of the vessel following therapeutic intervention. It is estimated that "the total societal costs of restenosis in the United States alone is somewhere between 800 million and 2 billion dollars a year," (refer to "Discoveries in Radiation for Restenosis," presented at Emory University, January 11-12, 1996).

Since radioactive stents could have a significant beneficial impact, not only on the healthcare system, but on the quality of life of patients who suffer from this condition, we believe that it is important to ensure that they are appropriately classified and regulated. We have reviewed the existing categories pertaining to the medical uses of byproduct materials and have determined that a new category is necessary to address permanently implanted radioisotope intraluminal stents. These stents would have less than 3 microCuries of beta-emitting isotope (e.g. Phosphorous 32) per millimeter of length. Thus, standard coronary stents, 15 millimeters in length would contain less than 20 microCuries (740 kBq) of beta-emitting isotope. However, longer and larger diameter stents will be required for other anatomical sites, but all of these will contain less than 3 microCuries of beta-emitting isotope per millimeter of length.

957 Industrial Road • San Carlos, California 94070
Tel: (415) 593-2555 • Fax: (415) 593-4479

9607030225 TAP

The existing regulations do not include Phosphorous 32 and Strontium 89 as a sealed source for medical therapeutic use; therefore, these devices would be regulated under Title 10, Subpart G, section 35.400 "Use of sources for brachytherapy." These sources are used for traditional brachytherapy and require expert knowledge of dwell time and dose calculations, as well as, extensive radiobiology, radiation physics, and radiation protection. We believe that this category is not appropriate to control low-activity, beta-emitting stents for the following reasons:

1) Training and Competency Requirements

1.1) Low-activity, beta-emitting stents differ significantly from those sources that are used for traditional brachytherapy. Traditional brachytherapy sources have higher activity and require significant dose calculations; thus, to be used safely, the traditional brachytherapy sources require extensive knowledge in radiobiology, radiation physics, and radiation protection. The low-activity beta-emitting stents do not require this same level of radiation expertise, because they have significantly lower radioactivity levels and are permanently implanted devices that do not require any calculation of dose or dwell time.

1.2) Under the current regulations, any procedure using a source defined under section 35.400 would require the supervision of a certified radiation oncologist. Stents are currently prescribed and implanted by physicians trained in cardiovascular specialties, and once given required training in the proper handling of these low dose-rate, beta-emitting sources, could safely and effectively implant radioactive stents. Access to low-activity, beta-emitting stents should be allowed to those physicians who are already certified for stent implantation specialties. Requiring the additional oversight of a radiation oncologist for these stent applications, could potentially limit the accessibility of this technology and add significant cost to each procedure which would unnecessarily burden the medical system.

2) Safety Requirements

Low-activity, beta-emitting stents can be shielded with approximately one centimeter of plastic material and have shorter half-lives of less than two months, as compared with other sources. Thus, as shielded, these materials should not pose a significant hazard to the public or medical staff. Also note that the radioactive stent remains within the shield until it is passed into the patient by means of a stent delivery catheter. Once in the patient, these beta emitters are shielded by the patient's tissues, and because of the shorter half-lives, do not represent a significant long term risk to the public or medical personnel. A precedent for the release of patients with such short half-life sources has been set with sources such as Iodine 125 seeds which have a 60 day half-life and 10^3 to 10^4 times higher activity per seed, as well as, the more penetrating photon radiation.

3) Facility Licensing Requirements

Access to low-activity, beta-emitting stents should be allowed to non-broad scope licensed medical facilities. Under current regulations, radioisotope stents could only be utilized by facilities with a broad scope license. There are a large number of medical facilities that currently implant stents, that do not meet these licensing requirements. Maintaining these licensing requirements could also limit the accessibility of this technology.

Based upon these issues, this petition specifically requests:

1) an amendment to 10 C.F.R. § 35 to include a new section for "permanently implanted intraluminal stents." These are to include Phosphorous 32 and Strontium 89 radioisotope stents. And as the proposed title implies, these sources are to be implanted in the patient's vessels and arteries and be capable of being left permanently. These "sealed sources" will have removable contamination that will be less than 1% of the total device activity. The total device activity will be less than 3 microCuries of beta-emitting isotope per millimeter of stent length; and,

2) a new category of training and experience should be created which requires that the stents be placed in the patient by a licensed physician who:

2.1) is certified either:

2.1) by the American Board of Radiology in diagnostic radiology with additional specialization in intravascular radiology; or

2.2) by the American Board of Internal Medicine with special competence in cardiology; and

2.2) who has received 8 hours of classroom and laboratory training in the basic handling of beta-emitting sources.

I appreciate your prompt review and consideration of our petition. Also, since this technology has a potentially large benefit to patients, as well as, the healthcare system, we would like to request that our petition be considered for an expedited review. If you have any questions or require any additional information, please feel free to contact me at 415-593-2555.

Sincerely,

Jill Schweiger,
Vice President,
Regulatory & Clinical Affairs

EMORY UNIVERSITY
SCHOOL OF MEDICINE

The Robert W. Woodruff Health Sciences Center

DISCOVERIES IN RADIATION FOR RESTENOSIS

Presented by

THE ANDREAS GRUENTZIG CARDIOVASCULAR CENTER
AND
THE DEPARTMENT OF RADIATION ONCOLOGY OF
EMORY UNIVERSITY SCHOOL OF MEDICINE

Course Directors

SPENCER B. KING, III, M.D. - RON WAKSMAN, M.D. - IAN CROCKER, M.D.

Selected Literature

J.W. MARRIOTT HOTEL
AT LENOX
Atlanta, Georgia

JANUARY 11-12, 1996

Andreas Gruentzig Cardiovascular Center and the
Department of Radiation Oncology of Emory University
Presents

DISCOVERIES IN RADIATION FOR RESTENOSIS

The first international workshop devoted to this exciting new field

Course Directors:

Spencer B. King III, M.D. **Ron Waksman M.D.** **Ian R. Crocker M.D.**

JANUARY 11-12 1996
at
J.W.MARRIOTT, BUCKHEAD
ATLANTA, GEORGIA

Mechanisms of Restenosis
Basic Radiobiology
Physics of Radiation
Radiation for Restenosis in Animal Models
Stents and Radiation
Endovascular Radiation in Peripheral Vascular System
Endovascular Radiation in Human Coronary Arteries
Industry Demonstration of New Devices
Economic and Regulatory Issues

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 35

[Docket No. PRM-35-14]

IsoStent, Inc.,
Receipt of a Petition for Rulemaking

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; Notice of receipt.

SUMMARY: The Nuclear Regulatory Commission (NRC) has received and requests public comment on a petition for rulemaking filed by IsoStent, Inc. The petition has been docketed by the Commission and assigned Docket No. PRM-35-14. The petitioner requests that the NRC amend its regulations by adding a new section to address permanently implanted intraluminal stents, including phosphorus-32 and strontium-89 radioisotope stents. These stents would be permanently implanted in the patient's vessels and arteries. The petitioner also requests that the NRC add a new section to specify training and experience requirements for qualified physicians responsible for placing radioisotope stents in patients. The petitioner believes the suggested amendments would address an innovative approach for the treatment of stenotic arteries and vessels with low-activity, beta-emitting stents.

DATE: Submit comments by (75 days after date of publication). Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given except to those comments received on or before this date.

ADDRESSES: For a copy of the petition, write: Rules Review Section, Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Submit comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Attention: Docketing and Service Branch.

Deliver comments to 11555 Rockville Pike Rockville, Maryland, between 7:45 am and 4:15 pm on Fe[illegible]rkdays.

For information on sending comments by electronic format, see "Electronic Access," under the Supplementary Information section of this notice.

FOR FURTHER INFORMATION CONTACT: Michael T. Lesar, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Telephone: 301-415-7163 or Toll Free: 800-368-5642, or E-mail MTL@NRC.GOV.

SUPPLEMENTARY INFORMATION:

Receipt of Petition for Rulemaking

The NRC received the IsoSt[illegible], Inc., petition for rulemaking on May 10, 1996. The petition is dated May 9, 1996, and was docketed as PRM-35-14 on May 20, 1996.

Background

The petitioner states that preliminary data indicates that stents, combined with a low-activity, beta-emitting source (less than 3 microcuries per millimeter of length), may significantly reduce restenosis of the vessel following therapeutic intervention. The petitioner refers to a source that estimates total societal costs of restenosis in the United States is somewhere between $800 million and $2 billion a year.

The petitioner states that it is important to ensure that the stents are appropriately classified and regulated because radioactive stents could significantly benefit the healthcare system and the quality of life of patients suffering from restenosis of the vessel following therapeutic intervention. The petitioner believes, after reviewing existing NRC regulations pertaining to the medical uses of byproduct materials, that a new section is necessary to address permanently implanted radioisotope intraluminal stents. The petitioner states that standard coronary stents, 15 millimeters in length, would contain less than 20 microcuries (740 kBq) of beta-emitting isotope, and longer and larger diameter stents for other anatomical sites would contain less than 3 microcuries of beta-emitting isotope per millimeter of length.

Petitioner's Suggested Amendments

The petitioner requests that the NRC amend its regulations by adding a new section that would be applicable to permanently

implanted intraluminal stents. The new section would govern stents that include phosphorus-32 and strontium-89 radioisotope sealed sources. These sealed sources would have removable contamination of less than 1 percent of the total device activity. The petitioner further requests a new section be created on training and experience requiring the stents to be placed in the patient by a licensed physician who--

(1) Is certified either by the American Board of Radiology in diagnostic radiology with additional specialization in intravascular radiology or by the American Board of Internal Medicine with special competence in cardiology; and

(2) Has received 8 hours of classroom and laboratory training in the basic handling of beta-emitting sources.

Discussion of the Petition

The petitioner states that the existing regulations do not include phosphorus-32 and strontium-89 as sealed sources for medical therapeutic use. Therefore, the petitioner believes that these sources would be regulated under sources used for traditional brachytherapy. The petitioner believes this category is not appropriate to control low-activity, beta-emitting stents for the following reasons:

1. Training and Competency Requirements.

Low-activity, beta-emitting stents differ significantly from those sources that are used for traditional brachytherapy. Traditional brachytherapy sources have higher activity and

require significant dose calculations. To be used safely, traditional brachytherapy sources require extensive knowledge in radiobiology, radiation physics, and radiation protection. Low-activity beta-emitting stents do not require this same level of radiation expertise because they have significantly lower radioactivity levels and are permanently implanted devices that do not require any calculation of dose or dwell time.

Under current NRC regulations, any procedure using a source defined under § 35.400 would require the supervision of a certified radiation oncologist. Stents are currently prescribed and implanted by physicians trained in cardiovascular specialties. Once given required training in the proper handling of these low dose-rate, beta-emitting sources, these physicians could safely and effectively implant radioactive stents. Access to low-activity, beta-emitting stents should be allowed for those physicians who are already certified for stent implantation specialties. Requiring the additional oversight of a radiation oncologist for these stent applications could potentially limit the accessibility of this technology and add significant cost to each procedure. Such a requirement would unnecessarily burden the medical system.

2. Safety Requirements.

Low-activity, beta-emitting stents can be shielded with approximately 1 centimeter of plastic material and have half-lives of less than two months, and, when shielded, should not pose a significant hazard to the public or medical staff. The

radioactive stent remains within the shield until it is passed into the patient by means of a stent delivery catheter. Once in the patient, these beta-emitters are shielded by the patient's tissues, and because of their shorter half-lives, do not represent a significant long-term risk to the public or to medical personnel. A precedent for the release of patients with such short half-life sources has been set with sources such as iodine-125 seeds having a 60-day half-life and 10^3 to 10^4 times higher activity per seed, as well as with the more penetrating photon radiation.

3. Facility Licensing Requirements.

Medical facilities without a broad-scope license also should have access to low-activity, beta-emitting stents, as do facilities with a broad-scope license under current regulations. There are a large number of medical facilities that currently implant stents, but do not meet these licensing requirements. Therefore, maintaining these requirements also could limit the accessibility of this technology.

The petitioner believes that these suggested changes would have a potentially large benefit to patients and the healthcare system.

Electronic Access

Comments may be submitted electronically in either ASCII text or WordPerfect format (version 5.1 or later) by calling the NRC Electronic Bulletin Board (BBS) on FedWorld. The bulletin

board may be accessed using a personal computer, a modem, and one of the commonly available communications software packages, or directly via Internet. Background documents on the petition for rulemaking also are available, as practical, for downloading and viewing on the bulletin board.

If using a personal computer and modem, the NRC rulemaking subsystem on FedWorld can be accessed directly by dialing the toll free number 800-303-9672. Communication software parameters should be set as follows: parity to none, data bits to 8, and stop bits to 1 (N,8,1). Using ANSI or VT-100 terminal emulation, the NRC rulemaking subsystem can then be accessed by selecting the "Rules Menu" option from the "NRC Main Menu." Users will find the "FedWorld Online User's Guides" particularly helpful. Many NRC subsystems and data bases also have a "Help/Information Center" option that is tailored to the particular subsystem.

The NRC subsystem on FedWorld also can be accessed by a direct-dial telephone number for the main FedWorld BBS, 703-321-3339, or by using Telnet via Internet: fedworld.gov. If using 703-321-3339 to contact FedWorld, the NRC subsystem will be accessed from the main FedWorld menu by selecting the "Regulatory, Government Administration and State Systems," then selecting "Regulatory Information Mall." At that point, a menu will be displayed that has an option "U.S. Nuclear Regulatory Commission" that will take the user to the NRC online main menu. The NRC online area also can be accessed directly by typing "/go nrc" at a FedWorld command line. If NRC is accessed from

FedWorld's main menu, the user may return to FedWorld by selecting the "Return to FedWorld" option from the NRC online main menu. However, if NRC is accessed at FedWorld by using NRC's toll-free number, the user will have full access to all NRC systems, but will not have access to the main FedWorld system.

If FedWorld is contacted using Telnet, the user will see the NRC area and menus, including the Rules Menu. Although the user will be able to download documents and leave messages, he or she will not be able to write comments or upload files (comments). If FedWorld is contacted using FTP, all files can be accessed and downloaded, but uploads are not allowed. Only a list of files will be shown without descriptions (normal Gopher look). An index file listing all files within a subdirectory, with descriptions, is available. There is a 15-minute time limit for FTP access.

Although FedWorld also can be accessed through the World Wide Web, like FTP, that mode only provides access for downloading files and does not display the NRC Rules Menu.

For more information on NRC bulletin boards, call Mr. Arthur Davis, Systems Integration and Development Branch, NRC, Washington, DC 20555-0001, telephone 301-415-5780; E-mail AXD3@nrc.gov.

Single copies of this petition for rulemaking may be obtained by written request or telefax (301-415-5144) from the Rules Review and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration,

Mail Stop T6-D59, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001. Certain documents related to this petition for rulemaking, including comments received, may be examined at the NRC Public Document Room, 2120 L Street NW. (Lower Level), Washington, DC. These same documents also may be viewed and downloaded electronically via the Electronic Bulletin Board established by NRC for this petition for rulemaking as indicated above.

Dated at Rockville, Maryland, this 21st day of June 1996.

For the Nuclear Regulatory Commission.

John C. Hoyle,
Secretary of the Commission.

CONGRESSIONAL CORRESPONDENCE SYSTEM
DOCUMENT PREPARATION CHECKLIST

This check list is to be submitted with each document (or group of Qs/As) sent for processing into the CCS.

1. *BRIEF DESCRIPTION OF DOCUMENT(S)* Ltr. to Rep. Schaefer

2. *TYPE OF DOCUMENT* X *CORRESPONDENCE* ____ *HEARINGS (Qs/As)*

3. *DOCUMENT CONTROL* ___ *SENSITIVE (NRC ONLY)* X *NON-SENSITIVE*

4. *CONGRESSIONAL COMMITTEE AND SUBCOMMITTEE (if applicable)*
   _____ *Congressional Committee*
   _____ _____ *Subcommittee*

5. *SUBJECT CODES*
   (A) _____
   (B) _____
   (C) _____

6. *SOURCE OF DOCUMENTS*
   (A) _____ *5520 (DOCUMENT NAME* _____*)*
   (B) _____ *SCAN (C)* _____ *ATTACHMENTS*
   (D) _____ *OTHER* _____

7. *SYSTEM LOG DATES*
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RELEASE TO PDR