[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR 40

[Docket No. PRM-40-29]

Terrence O. Hee, Ion Technology; Receipt of Petition for Rulemaking

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemakings; Notice of receipt.

SUMMARY: The Commission seeks public comment on a petition for rulemaking filed August 7, 2003, by Terrence O. Hee, Ion Technology (the petitioner), docketed PRM-40-29. The petition requests amendment of the NRC's regulations regarding unimportant quantities of source material to exempt end users of a catalytic device containing thorium from the NRC's licensing requirements. The petitioner asserts that this device, in conjunction with a patented new methodology, could substantially reduce air pollution chemicals from mobile and stationary combustion processes.

DATE: Submit comments by (75 days after publication in the Federal Register). Comments received after this date will be considered if it is practical to do so, but the Commission is able to ensure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any one of the following methods. Please include the following number *(*PRM-40-29) in the subject line of your comments. Comments on petitions submitted in writing or in electronic form will be made available to the public in their entirety on the NRC rulemaking web site. Personal information will not be removed from your

comments.

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: SECY@nrc.gov. If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1966. You may also submit comments via the NRC's rulemaking web site at http://ruleforum.llnl.gov. Address questions about our rulemaking website to Carol Gallagher (301) 415-5905; email cag@nrc.gov.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 am and 4:15 pm Federal workdays. (Telephone (301) 415-1966).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at (301) 415-1101.

Publicly available documents related to this petition may be viewed electronically on the public computers located at the NRC's Public Document Room (PDR), O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. The PDR reproduction contractor will copy documents for a fee. Selected documents, including comments, may be viewed and downloaded electronically via the NRC rulemaking web site at http://ruleforum.llnl.gov.

Publicly available documents created or received at the NRC after November 1, 1999, are available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737 or by email to pdr@nrc.gov.

FOR FURTHER INFORMATION CONTACT: Michael T. Lesar, Chief, Rules and Directives

Branch, Division of Administrative services, Office of Administration, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001 or e-mail: MTL@nrc.gov.

SUPPLEMENTARY INFORMATION:

The Petitioner

The petitioner, Terrence O. Hee, (Ion Technology), has U.S. distribution rights to a catalytic device containing thorium. The petitioner states that the device is part of a “new technology for the reduction of air pollution chemicals” produced by mobile and industrial combustion processes, and gives two reasons for submitting this petition: (1) to contribute to the cleaning up of the air, and (2) a monetary interest.

Background

The petitioner states that 10 CFR 40.13 (c), Unimportant quantities of source material, currently would not exempt each end user of a catalytic device containing thorium from having to obtain an NRC license to possess such a device. The petitioner asserts that there are potentially millions of users for this device, and that obtaining “an individual license for each application would prove to be burdensome for the state agencies issuing the individual licenses and to those wishing to use the devices.”

Proposed Action

The current regulations at 10 CFR 40.13(c) exempt from licensing requirements certain uses of thorium (e.g., in incandescent gas mantles, vacuum tubes, welding rods, electric lamps, personnel neutron dosimeters). Also exempted is source material contained in products such as glazed ceramic tableware, piezoelectric ceramic, and glassware. The petitioner proposes to add an exemption to this section of the Commission’s regulations for catalytic devices containing thorium, and suggests the following language:

Any patented catalyst used in the treatment of fuel, gas or air streams for combustion

processes, or other processes provided that the thorium content does not exceed 6 percent by weight. The weight percentage to be calculated for either a homogeneous mixture or as a coating on a substrate base, with the base and the coating being considered the same as a homogeneous mixture, and the finished product is constructed in a manner that will prevent the exposure of the public to any radiation during the normal application and use of this technology.

Rationale

The Petitioner offers the following rationale in support of its petition:

(1) The "environmental and quality of life benefits" derived from the application of this technology are "currently enjoyed by the citizens of Japan." The petitioner goes on to state that this technology is proposed for license in China as a way to reduce air pollution;

(2) Implementation of these devices can reduce the cost of air emissions pollution control to U.S. industry over the cost of current methods, thus enhancing the ability of industry to meet strict air emission standards;

(3) Workers involved with the devices will be protected from the low levels of radiation exposure by a metal housing encasing the thorium-bearing material;

(4) The devices are manufactured in Japan, so no U.S. workers will have direct contact with the thorium-bearing material; and

(5) The long-term effect on the environment would be "reduced emissions of air pollutants from mobile and stationary combustion sources", and the petitioner states that the device "could also lead to a reduction in the volume of hydrocarbon fuels used."

In addition, the petitioner explains that the public is protected by housings shielding the radiation-emitting material, and that the housings are designed not to be "readily disassembled by the curious." The petitioner states the product will have warning labels which instruct users in the proper disposal method, which is only by return of the product to the distributor; the petitioner

anticipates that these labels would prevent long-term negative effects on the environment. The petitioner notes that disposal instructions would also be in the “Material Safety Data Sheet” delivered with each device.

The Petitioner projects the product to have a 30-year life cycle, and expects no short-term negative effects on the environment from disposal of the devices. The petitioner believes that the product is a safe and cost-effective method for contributing to the reduction of air pollution chemicals in the air in the United States and claims that it poses no adverse risk to the public or to workers involved in installing or removing the devices.

Relevant Technical Information

The petitioner states that Honda Motor Company is currently installing the technology as a factory-installed device on their diesel-powered vehicles, and claims use of this technology in Japan has demonstrated a reduction of air pollution chemicals and a reduction in fuel consumption. The petitioner submits test data showing reductions of soot emissions after installation of the device on diesel bus engines on the Okayama Bus Line company and a Caterpillar/Mitsubishi diesel-powered shovel. The petitioner also submits data showing reductions in nitrogen oxides, carbon monoxide, and hydrocarbons for a 1989 gasoline-fueled Mercedes Benz, and similar data for a 1998 Mitsubishi van. The petitioner also presents “fuel usage reduction examples” comparing various makes and models of vehicles before and after installation of the catalytic device. The petitioner’s data claims fuel savings ranging from 53.96 percent for a Mitsubishi Minicar to 8.19 percent for a Mitsubishi truck.

Conclusion

The petitioner believes that the proposed change to the Commission’s regulations to

allow the use of catalytic devices containing thorium in the United States is appropriate because it will benefit citizens by increasing the efficiency of combustion processes, reducing the use of hydrocarbon fuels, and lowering air pollutant emissions. The petitioner concludes that this technology poses no hazard to users or the public.

Dated at Rockville, Maryland, this 7th day of October, 2003.

For the Nuclear Regulatory Commission.

/ RA /

Annette Vietti-Cook,
Secretary of the Commission.