ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OAR–2011–0436; FRL–9313–4]

EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population (Blue Book)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This document announces the availability of U.S. Environmental Protection Agency's (EPA) updated EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population (EPA 402–R–11–001, April 2011), also known as the *Blue Book,* which provides radiation risk assessment methodology. EPA will use the scientific information on radiation risks provided in the *Blue Book,* together with information from other sources, when considering potential modifications and updates to radiation protection rules and guidance.

FOR FURTHER INFORMATION CONTACT: David Pawel, Radiation Protection Division (6608J), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington DC 20460; telephone number: 202–343–9202; fax number: 202–343–2302; e-mail address: *pawel.david@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. How can i get copies of this document and other related information?

1. *Docket.* EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2011–0436; FRL–9313–4]. Publicly available docket materials are available either electronically through *http://www.regulations.gov* or in hard copy at the Air and Radiation Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Air and Radiation Docket is (202) 566–1742. As provided in EPA's regulations at 40 CFR Part 2, and in accordance with normal EPA docket procedures, if copies of any docket materials are requested, a reasonable fee may be charged for photocopying.

2. *Electronic Access.* You may access this **Federal Register** document electronically through the EPA Internet under the "Federal Register" listings at *http://www.epa.gov/fedrgstr/.*

II. Background

The U.S. Environmental Protection Agency develops estimates of risk from low-level ionizing radiation as part of its responsibilities for regulating environmental exposures and in its role of providing Federal Guidance on radiation protection.

The *EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population,* also known as the *Blue Book,* is a revision to EPA's methodology for estimating radiogenic cancer risks. These updates are based on the National Research Council's latest report on *Biological Effects of Ionizing Radiation* (BEIR VII) as well as other updated science.

The *Blue Book* uses the best science available to calculate cancer risk estimates separately by age at exposure, sex, and potentially affected organ. More specifically, the *Blue Book* presents new EPA estimates of cancer incidence and mortality risk coefficients pertaining to low dose exposures to ionizing radiation for the U.S. population, as well as their scientific basis. (Risk here refers to the probability of a health effect, *i.e.,* a cancer or a cancer death; a risk coefficient refers to the risk per unit dose of ionizing radiation.)

The *Blue Book* has undergone an extensive peer review process. It takes into account recommendations made by the Agency's Science Advisory Board (SAB), which completed its review in January 2010. For the *Blue Book* review, the SAB relied on advice from its Radiation Advisory Committee—a panel of non-EPA scientists, who are chosen for their objectivity, integrity, and expertise in radiation science and protection.

As in BEIR VII, models in the *Blue Book* are provided which describe how radiogenic cancer risks depend on such factors as: (1) When a person is exposed, (2) at what age a person might get cancer, (3) sex, (4) and the type of cancer. Estimates of cancer risk are based on these models. However, a number of extensions and modifications to the BEIR VII models have been implemented. Most notably, the Blue Book provides: (1) Risk estimates for α-particles which were not addressed in BEIR VII; (2) risk estimates for some types of cancer that were not considered in BEIR VII: basal cell carcinomas, kidney cancer, bone sarcomas, and also cancers from prenatal exposures, and (3) a more thorough analysis of uncertainties associated with the radiogenic risk estimates.

Underlying the risk models is a large body of epidemiological and radiobiological data. In general, results from both lines of research are consistent with a linear, no-threshold dose (LNT) response model in which the risk of inducing a cancer in an irradiated tissue by low doses of radiation is proportional to the dose to that tissue. The BEIR VII Committee unequivocally recommended continuing adherence to the LNT approach. EPA also finds strong scientific support for LNT, while acknowledging that new research might conceivably lead to revisions in the future.

The most important source of data on radiogenic health effects is a long-term epidemiological study of Japanese atomic bomb survivors, who received an essentially instantaneously delivered dose of radiation, mostly in the form of γ-rays. This study has important strengths, including: An exposure which can be pinpointed in time; a large, relatively healthy exposed population encompassing both genders and all ages; a wide range of radiation doses to all organs of the body, which can be estimated reasonably accurately; and detailed epidemiological follow-up for about 50 years. The precision of the derived risk estimates is higher than all other studies for most cancer types. Nevertheless uncertainties in the risk estimates are often quite large for specific cancers, and the uncertainties are even larger if one focuses on a specific gender, age at exposure, or time after exposure. Calculating radiogenic risks is further complicated because radiogenic risks may be different for the U.S. population than for the Japanese A-bomb survivors. Such differences may be due to genetic or environmental factors, *e.g.,* radiogenic lung cancer risks likely depend on patterns of tobacco use.

In addition to the Japanese Life Span Study (LSS), other epidemiological studies provide important information about radiogenic cancer risks. These include studies of medically irradiated patients and groups receiving occupational or environmental exposures. For thyroid and breast cancers, risk estimates are based on data from both the A-bomb survivors and medically irradiated cohorts. While studies on populations exposed occupationally or environmentally have, so far, been of limited use in quantifying radiation risks, they can provide valuable insight into the risks from chronic exposures.

Summary risk coefficients are provided for the U.S. population, which can be used to calculate average risks for persons exposed throughout life to a

constant dose rate. The average lifetime dose from natural background radiation (not including radon) is about 75 mGy. Using the summary risk coefficients in the *Blue Book,* this corresponds to about 87 out of 10,000 people in the U.S. who would get cancer from natural background radiation, with 44 out of the 87 resulting in death. Radiogenic risks (per unit dose) are substantially larger for childhood than adult exposures, and tend to be larger for females than males. Risks per unit dose are larger for breast, lung and colon cancers than for most other cancer sites.

For both males and females, the estimated risk for cancer incidence (for all cancers combined) increased by about 35% from EPA's previous estimates published in Federal Guidance Report 13 (FGR–13). However, for some individual cancer sites, relative changes in cancer incidence are more than two-fold. In general, the new EPA mortality estimates do not differ greatly from those in FGR–13; remarkably, for all sites combined, the estimates for mortality changed by less than 2% for both males and females.

Aside from the case of radon (which is not in the scope of this report), human data on risks from α-particles are much more limited than for most other types of radiation. For most cancer types, results from laboratory experiments indicate that the risk per unit dose may be about 20 times greater for α-particles than for γ-rays. Thus, risk coefficients for α-particles (for most cancers) are derived by multiplying the corresponding risk coefficients for γ-rays by a factor of 20.

EPA will use the scientific information on radiation risks provided in the *Blue Book,* together with information from other sources, when considering potential modifications and updates to radiation protection rules and guidance. The complete *Blue Book, EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population* (EPA 402–R–11–001, April 2011), can be accessed at *http://epa.gov/radiation/assessment/blue-book/index.html.*

Dated: May 24, 2011.

Michael P. Flynn,

Director, Office of Radiation and Indoor Air.

[FR Doc. 2011–13395 Filed 5–27–11; 8:45 am]

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ENVIRONMENTAL PROTECTION AGENCY

[FRL –9303–7]

Notice of a Regional Project Waiver of Section 1605 (Buy American) of the American Recovery and Reinvestment Act of 2009 (ARRA) to the City of Marathon, FL

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA is hereby granting a project waiver of the Buy American requirements of ARRA Section 1605 under the authority of Section 1605(b)(2) [manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality] to the City of Marathon, Florida for the purchase of nine submerged membrane units (SMUs), as part of an overall membrane bioreactor system (MBR), from Kubota Corporation in Japan. The submerged membrane unit is a specialty product for this project. The membrane bioreactor system for which this SMU will be used is an advanced wastewater treatment process, which is designed to meet the high quality effluent requirements of the waste load allocation, under the National Pollutant Discharge Elimination System (NPDES) permit. Additionally, the City of Marathon facility has specific technical design requirements for the installation of the SMUs with the membrane bioreactor treatment process, including tankage footprint, geometry, and configuration. Only the Kubota Corporation product meets all these requirements. The City stated that there are no apparent domestic manufactured submerged membrane units with the design specifications as required for this project. This is a project specific waiver and only applies to the use of the specified product for the ARRA project being approved. Waivers for these types of products and components have already been published in the **Federal Register**, however, any other ARRA recipient that wishes to use the same product must apply for a separate waiver based on project specific circumstances. Based on the review of the information provided, EPA has concluded that a waiver of the Buy American provisions is justified. The Regional Administrator is making this determination based on the review and recommendation of the EPA Region 4, Water Protection Division, Grants and Infrastructure Branch. The Assistant Administrator of the Office of Administration and Resources Management has concurred on this decision to make an exception to Section 1605 of ARRA. This action permits the City to purchase nine submerged membrane units manufactured by Kubota, for the proposed project being implemented by the City of Marathon, Florida.

DATES: *Effective Date:* May 31, 2011.

FOR FURTHER INFORMATION CONTACT: Cynthia Y. Edwards, Project Officer, Grants and SRF Section, Water Protection Division (WPD), (404) 562–9340, USEPA Region 4, 61 Forsyth St., SW., Atlanta, GA 30303.

SUPPLEMENTARY INFORMATION: In accordance with ARRA Section 1605(c), the EPA hereby provides notice that it is granting a project waiver of the requirements of Sections 1605(a) of Public Law 111–5, Buy American requirements, to the City of Marathon, Florida, for the purchase of nine submerged membrane units, manufactured by Kubota of Japan.

Section 1605 of the ARRA requires that none of the appropriated funds may be used for the construction, alteration, maintenance, or repair of a public building or public work unless all of the iron, steel, and manufactured goods used in the project are produced in the United States, or unless a waiver is provided to the recipient by the head of the appropriate agency, here the EPA. A waiver may be provided if EPA determines that (1) applying these requirements would be inconsistent with the public interest; (2) iron, steel, and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron, steel, and the relevant manufactured goods produced in the United States will increase the cost of the overall project by more than 25 percent.

The City has requested a waiver from the Buy American Provision for the purchase of nine submerged membrane units, a specialty product for this project. The membrane bioreactor system for which this SMU will be used is an advanced wastewater treatment process, which is designed to meet the high quality effluent requirements of the waste load allocation, under the NPDES permit. The Marathon Area 5 Waste Water Treatment Plant (WWTP) Upgrade Project is a retrofit of an existing WWTP that will allow it to meet additional flow demands generated by Area 5. There is no additional land available for the expansion of the WWTP. Therefore, it is necessary to use membrane technology to increase capacity without expanding