detailed justification in the Federal Register. Finally, section 1605(d) of the Recovery Act states that the Buy American provision must be applied in a manner consistent with the United States' obligations under international agreements.

II. Nonavailability Finding

The Commission's Executive Director determined—as applied to certain water quality treatment and monitoring equipment components to be used in a hatchery rearing June sucker, an endangered species—application of the Buy American provision is not possible because the components, specifically rotating drum filter upgrades and a water quality monitoring system expansion, are not available from American manufacturers in sufficient and reasonably available commercial quantities of a satisfactory quality.

Expansion of the recirculation system requires adding a second drum filter for aquaculture water treatment. The existing system uses a drum filter manufactured by PRAqua Supplies Ltd.—Nanaimo, British Columbia, Canada. The Division owns an RFM 4872 drum filter also manufactured by PRAqua Supplies Ltd that will be used for the system expansion. This drum filter requires modification with new drum filter seals, screen panels and a new control panel to be suitable for use in the aquaculture system. This will allow the expanded system to match the existing equipment and drum filter.

The existing recirculation facility is equipped with a variety of automated sensors that allow system operators to monitor water quality, flow and temperature in the fish hatchery. The existing equipment was provided and installed by Point Four Systems Inc. of Coquitlam, BC, Canada.

Recirculation system expansion will also require new components to expand aquaculture water quality monitoring. New components will include additional oxygen sensors, flow meters and related control panel wiring to connect to the existing system. Use of components sharing the same manufacturer will allow efficient operation of equipment that is in place. New monitoring system components that will function with existing components are not available from American manufacturers in sufficient and reasonably available commercial quantities of a satisfactory quality.

III. Waiver

On February 17, 2010 based on the non-availability finding discussed above and pursuant to ARRA section 1605(c), the Commission's Executive Director granted a limited waiver of the Recovery Act's Buy American requirements with respect to Agreement No. 09FCUT–RA04 between the Commission and Division for the aforementioned components of a hatchery recirculation system.

Dated: February 25, 2010.

Michael C. Weland,

Executive Director.

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DEPARTMENT OF VETERANS AFFAIRS

Determinations Concerning Illnesses Discussed in the Institute of Medicine Report on *Gulf War and Health: Updated Literature Review of Depleted Uranium*

AGENCY: Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: As required by law, the Department of Veterans Affairs (VA) hereby gives notice that the Secretary of Veterans Affairs, under the authority granted by the Persian Gulf War Veterans Act of 1998, Public Law 105–277, title XVI, 112 Stat. 2681–742 through 2681–749 (codified at 38 U.S.C. 1118), has determined not to establish a presumption of service connection at this time, based on exposure to depleted uranium in the Persian Gulf during the Persian Gulf War, for any of the diseases, illnesses, or health effects discussed in the July 30, 2008, report of the Institute of Medicine (IOM) of the National Academy of Sciences (NAS), titled *Gulf War and Health: Updated Literature Review of Depleted Uranium.* This determination does not in any way preclude VA from granting service connection for any disease, including those specifically discussed in this notice, nor does it change any existing rights or procedures.

FOR FURTHER INFORMATION CONTACT: Nancy Copeland, Regulations Staff (211D), Compensation and Pension Service, Veterans Benefits Administration, Department of Veterans Affairs, 810 Vermont Avenue, NW., Washington, DC 20420, telephone (202) 461–9685. (This is not a toll-free number.)

SUPPLEMENTARY INFORMATION:

I. Statutory Requirements

The Persian Gulf War Veterans Act of 1998, Public Law 105–277, title XVI, 112 Stat. 2681–742 through 2681–749 (codified at 38 U.S.C. 1118), and the Veterans Programs Enhancement Act of 1998, Public Law 105–368, 112 Stat. 3315, previously directed the Secretary to seek to enter into an agreement with the NAS IOM to review and evaluate the scientific literature regarding associations between illness and exposure to specific toxic agents, environmental or wartime hazards, or preventive medicines or vaccines to which service members may have been exposed during service in the Southwest Asia theater of operations during the Persian Gulf War.

In 1998, IOM began a program to examine the scientific and medical literature on the potential health effect of specific agents and hazards to which Gulf War Veterans might have been exposed during their deployment. Five reports have examined health outcomes related to (1) depleted uranium (DU), pyridostigmine bromide, sarin, and vaccines (Volume 1); (2) insecticides and solvents; (3) fuels, combustion products, and propellants; (4) health effects of serving in the Gulf War irrespective of exposure information; and (5) infectious diseases. A sixth IOM report, *Gulf War and Health, Volume 6: Deployment Related Stress,* examined the physiologic, psychologic, and psychosocial effects of deployment-related stress.

The present report updates the review of DU presented in Volume 1. When Volume 1 was published, few studies of health outcomes of exposure to DU had been conducted. Therefore, the IOM studied the health outcomes of exposure to natural and processed uranium in workers at plants that processed uranium ore for use in weapons. After evaluating the literature, the IOM concluded that there was inadequate or insufficient evidence to determine whether an association exists between uranium exposure and 14 health outcomes: lymphatic cancer; bone cancer; nervous system disease; reproductive or developmental dysfunction; non-malignant respiratory disease; gastrointestinal disease; immune-mediated disease; effects on hematologic measures; genotoxic effects; cardiovascular effects; hepatic disease; dermal effects; ocular effects; and musculoskeletal effects. The IOM also concluded that there was limited or suggestive evidence of no association between uranium and clinically significant renal dysfunction and between uranium and lung cancer at specified cumulative internal doses.

Although previously used, the Gulf War marked the first time that DU munitions and armor were used extensively by the military. DU was used by the U.S. military for both offensive and defensive purposes in the

Gulf War. Heavy-armor tanks have a layer of DU armor to increase protection. Offensively, DU is used in kinetic-energy cartridges and ammunition rounds. The U.S. Army used an estimated 9,500 DU tank rounds during the Gulf War. Ammunition containing DU was used in Bosnia-Herzegovina in 1994–1995 and in Kosovo in 1999; about 10,800 DU rounds were fired in Bosnia-Herzegovina, and about 30,000 in Kosovo. Weapons containing DU were also used in Operation Iraqi Freedom (OIF), which began in 2003.

Military personnel have been exposed to DU as a result of friendly-fire incidents, cleanup and salvage operations, and proximity to burning DU containing tanks and ammunition. During the Gulf War, an estimated 134–164 people experienced "level I" exposure (the highest of three exposure categories as classified by the U.S. Department of Defense) through wounds caused by DU fragments, inhalation of airborne DU particles, ingestion of DU residues, or wound contamination by DU residues. Hundreds or thousands more may have been exposed to lower exposure through inhalation of dust containing DU particles and residue or ingestion from hand-to-mouth contact or contamination of clothing. Ten U.S. military personnel who served in OIF had confirmed DU detected in their urine; all 10 had DU embedded fragments or fragment injuries. When Volume 1 was published in 2000, few studies of health outcomes of exposure to natural uranium and DU had been conducted. Because DU continues to be used by the military, VA asked IOM to update its 2000 report and take into consideration information published since Volume 1.

II. Authority

Section 1602 of Public Law 105–277 provides that whenever the Secretary receives a report under section 1603 of Public Law 105–277, the Secretary must determine whether a presumption of service connection is warranted for any illness covered by that report. The statute provides that a presumption will be warranted when the Secretary determines that there is a positive association (*i.e.,* the credible evidence for an association is equal to or outweighs the credible evidence against an association) between exposure of humans or animals to a biological, chemical, or other toxic agent, environmental or wartime hazard, or preventive medicine or vaccine known or presumed to be associated with service in the Southwest Asia theater of operations during the Persian Gulf War and the occurrence of a diagnosed or undiagnosed illness in humans or animals. When a positive association exists, the Secretary will publish regulations establishing presumptive service connection for that illness. If the Secretary determines that a presumption of service connection is not warranted, he is to publish a notice of that determination, including an explanation of the scientific basis for that determination. The Secretary's determination must be based on consideration of the NAS reports and all other sound medical and scientific information and analysis available to the Secretary.

Although Section 1118 does not define "credible evidence," it does instruct the Secretary to take into consideration whether the results (of any report, information, or analysis) are statistically significant, are capable of replication, and withstand peer review. *See* 38 U.S.C. 1118(b)(2)(B). Simply comparing the number of studies that report a significantly increased relative risk to the number of studies that report a relative risk that is not significantly increased is not a valid method for determining whether the weight of evidence overall supports a finding that there is or is not a positive association between exposure to an agent, hazard, or medicine or vaccine and the subsequent development of the particular illness. Because of differences in statistical significance, confidence levels, control for confounding factors, and other pertinent characteristics, some studies are clearly more credible than others; and the Secretary has given the more credible studies more weight in evaluating the overall weight of the evidence concerning specific illnesses.

III. Prior NAS Report

NAS issued its initial report, *Gulf War and Health, Volume 1: Depleted Uranium, Pyridostigmine Bromide, Sarin, Vaccines,* on January 1, 2000. In that report, NAS limited its analysis to the health effects of DU, the chemical warfare agent sarin, vaccinations against botulism toxin and anthrax, and pyridostigmine bromide, which was used in the Gulf War as a pretreatment for possible exposure to nerve agents. On July 6, 2001, VA published a notice in the **Federal Register** announcing the Secretary's determination that the available evidence did not warrant a presumption of service connection for any disease discussed in that report. *See* 66 FR 35702 (2001).

IV. Gulf War and Health: Updated Literature Review of DU

On July 30, 2008, the IOM issued an updated report, *Gulf War and Health: Updated Literature Review of Depleted Uranium.* The report updated the review of DU that appeared in Volume 1. IOM conducted an extensive search of the scientific literature from among 3,500 titles and abstracts from which approximately 1,000 relevant articles were selected. These articles included epidemiologic, toxicologic, and exposure-assessment studies with additional information obtained from invited experts and the public.

V. Categories of Strength of Association

The IOM used the evidence in the scientific literature to draw conclusions about associations between exposure to DU and specific adverse health outcomes. Those conclusions are presented as categories of strength of association. The categories have been used in many previous IOM studies, and they have gained wide acceptance by Congress, government agencies, researchers, and Veteran groups. In its report, IOM classified the evidence of an association between exposure to a specific agent and a specific health outcome in the categories summarized as follows:

- *Sufficient Evidence of a Causal Relationship:* This category means that the evidence is sufficient to conclude that a causal relationship exists between the exposure to uranium and a specific health outcome in humans. The evidence fulfills the criteria for sufficient evidence of an association and satisfies several of the criteria used to assess causality: strength of association, dose-response relationship, consistency of association, temporal relationship, specificity of association, and biological plausibility.

IOM did not find any health outcomes that met the criteria for this category.

- *Sufficient Evidence of an Association:* This category means that the evidence is sufficient to conclude that there is an association. That is, a consistent association unlikely to be due to sampling variability has been observed between exposure to uranium and a specific health outcome in human studies that were free of severe bias and that controlled for confounding.

IOM did not find any health outcomes that met the criteria for this category.

- *Limited/Suggestive Evidence of an Association:* This category means that the evidence is suggestive of an association between exposure to uranium and a specific health outcome, but the body of evidence is limited by

insufficient avoidance of bias, insufficient control for confounding, or large sampling variability.

IOM did not find any health outcomes that met the criteria for this category.

• *Limited/Suggestive Evidence of No Association:* This category means that the evidence is consistent in not showing an association between exposure to uranium of any magnitude and a specific health outcome. A conclusion of no association is inevitably limited to the conditions, magnitudes of exposure, and length of observation in the available studies.

IOM did not find any health outcomes that met the criteria for this category.

• *Inadequate/Insufficient Evidence to Determine Whether an Association Exists:* This category means that the evidence is of insufficient quantity, quality, or consistency to permit a conclusion regarding the existence of an association between exposure to uranium and a specific health outcome in humans.

IOM concluded that there is inadequate/insufficient evidence to determine whether an association exists between exposure to uranium and each health outcome described in the report because well-conducted studies showed equivocal results, the magnitude or frequency of the health outcome may be so low that it cannot be reliably detected given the sizes of the study populations, and the available studies had limitations that prevented the IOM from reaching clear conclusions about health outcomes. The health outcomes are discussed below.

VI. Uranium and DU

Uranium is a dense, radioactive element that occurs naturally in soil, rocks, surface and underground water, air, plants, and animals. It also occurs in trace amounts in many foods and drinking water as a result of its presence in the environment. Uranium is the heaviest naturally occurring element. Its density is 19 times that of water and 1.65 times that of lead. The primary civilian use of uranium is as fuel for nuclear power plants.

DU is a byproduct of the uranium enrichment process used to generate fuel for nuclear power plants. As a byproduct of uranium enrichment, DU is abundant and inexpensive. The U.S. Army began researching the use of DU for military applications in the early 1970s, and DU is now used both offensively and defensively. In the Gulf War, heavy-armor tanks had a layer of DU armor to increase protection, and DU was used in kinetic-energy cartridges and ammunition rounds by the U.S. Army, Air Force, Marine Corps, and Navy.

After reviewing approximately 1,000 articles, the IOM focused on a number of relevant health outcomes on which to draw conclusions. The selected health outcomes were ten types of cancer and several non-malignant diseases or conditions. The types of cancer were lung cancer, leukemia, lymphoma, bone cancer, renal cancer, bladder cancer, brain and other central nervous system cancers, stomach cancer, prostatic cancer and testicular cancer. The non-malignant diseases or conditions included renal disease, respiratory disease, neurologic disease, and reproductive and developmental effects. With the exception of prostatic and testicular cancers, the health outcomes were selected by the IOM because there are plausible mechanisms of action (for example, lung cancer and respiratory disease were selected because inhaled insoluble uranium oxides lodge in the lung). Prostatic cancer is the most frequently diagnosed cancer in all men in the U.S., and any slight increase in risk could result in large numbers of cases and deaths. Testicular cancer, the most common cancer in young men, is of special interest to Gulf War Veterans, and some recent studies of Veterans suggested a higher but non-significant risk in Gulf War Veterans than in their nondeployed counterparts.

VII. Conclusions

A. Lung Cancer

Lung cancer is the leading cause of cancer deaths in the U.S. and the second-most common cancer in both American men and women. Tobacco-smoking is the predominant risk factor, and it is thought to account for about 87 percent of lung-cancer deaths.

Twenty-three studies of uranium-processing workers examined the association between exposure to uranium and lung cancer, as did three studies of military populations and three studies of residents. In the studies reviewed, the IOM found no consistent evidence of an effect of exposure to natural uranium or DU on lung-cancer incidence. Even considering the evidence from the studies with the strongest designs, the pattern among the studies varied: some studies show increases in risk of lung cancer, and other show decreases. A major shortcoming of the studies is the lack of individual data on smoking, a primary risk factor for lung cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and lung cancer exists.

B. Leukemia

Leukemia originates in the bone marrow and is a malignant blood disease. Leukemia is a relatively uncommon malignancy, so large study populations are generally needed to demonstrate any significant moderate effects. The studies reviewed by the IOM generally did not have adequate sample size. The results of only 1 of 23 studies reviewed by the IOM achieved statistical significance, indicating a reduction in mortality from leukemia. However, that study was limited by a lack of exposure data and information on other risk factors. The remaining 22 studies showed both increases and decreases in risk associated with exposure to uranium, all of which were non-significant. There was no consistent evidence of effect, and the pattern among studies was highly varied. The same pattern was observed after restriction of consideration to larger studies. On the basis of the evidence to date, the IOM would assign a low priority to additional study of an association between exposure to DU and leukemia.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and leukemia exists.

C. Lymphomas

1. Hodgkin Lymphoma

Hodgkin Lymphoma (also known as Hodgkin's disease) is a very rare cancer that originates in lymphatic tissue. The studies considered by the IOM split virtually evenly between showing an increase in risk of Hodgkin Lymphoma associated with exposure to natural uranium or DU and showing no change or a decrease in the risk of Hodgkin Lymphoma associated with uranium exposure. Only one study achieved a statistically significant finding, showing a significant increase in the risk of Hodgkin Lymphoma. Most of the smaller studies show a non-significant decrease in risk of incidence or death. The IOM noted that the pattern among the studies was highly varied, as would be expected if there truly were no effect in the population.

2. Non-Hodgkin Lymphoma and Other Lymphatic Cancers

Non-Hodgkin Lymphoma (NHL) encompasses the types of cancers of the lymphatic tissues that remain after exclusion of Hodgkin lymphoma. IOM evaluated 24 published studies of a possible relationship between exposure to natural uranium or DU and NHL. Most of the studies showed that the exposed subjects experienced a risk of

NHL equal to or lower than that in unexposed subjects.

On the basis of the available evidence, the IOM concludes that there is a lack of strong and consistent evidence of an association between uranium exposure and lymphatic cancers. Although the available evidence does not justify further consideration of a possible association between DU and lymphatic cancers, IOM concludes that further study of this type of cancer may be warranted on biologic grounds, given that uranium is known to accumulate in the lymph nodes.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and lymphomas exists. This conclusion applies to both Hodgkin Lymphoma and NHL.

D. Bone Cancer

Twelve studies of uranium-processing workers, one study of a deployed population, and two residential studies assessed bone-cancer outcomes. In most of the studies, the risk of bone cancer was the same or decreased after exposure to natural uranium or DU. Only one study had a significant finding: a statistically significant increase in bone-cancer incidence—four cases—in a Danish military population deployed to the Balkans. However, because three of the four cases occurred within the first year after deployment, it is unlikely that deployment-related exposure was a factor, given the latency of cancer. The studies generally did not have adequate sample size to detect any significant moderate effects. Overall, the available studies did not provide clear and consistent evidence of an association between natural uranium or DU, and bone cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and bone cancer exists.

E. Renal Cancer

The IOM considered 20 studies of an association between natural uranium or DU and renal cancer. None of the published results demonstrated a significant increase in risk after uranium exposure. One study indicated a statistically significant decrease in renal-cancer mortality associated with uranium exposure. That study did not include exposure assessment or information on other risk factors. On the basis of the available evidence, the IOM would assign a low priority to further study of an association between exposure to DU and renal cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and renal cancer exists.

F. Bladder Cancer

The IOM evaluated 20 published studies of a potential association between exposure to natural uranium or DU and bladder cancer: 14 uranium-processing studies, two studies of military populations, and four residential studies. Most of the studies reported the same or reduced bladder-cancer mortality or incidence in exposed subjects. Only one finding achieved statistical significance, a reduction in bladder-cancer incidence. That study is limited by a lack of data on internal radiation exposure and other risk factors. Overall, the IOM finds little evidence that exposure to natural uranium or DU increases the risk of bladder cancer. The IOM would assign a low priority to further study of an association between exposure to DU and bladder cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and bladder cancer exists.

G. Brain and Other Central Nervous System Cancers

Of the 20 published studies of an association between uranium exposure and brain and other central nervous system cancers reviewed by the IOM, almost all failed to demonstrate statistically significant associations. The studies are roughly evenly split between those showing increases in and those showing the same or decreases in mortality or incidence. The two studies that had statistically significant results showed decreases in risk after uranium exposure.

The published studies show inconsistent results that do not lead to a conclusion of an association between natural uranium or DU and cancers of the central nervous system. Studies of some other cancers (for example, bladder cancer) showed an equal or reduced risk after exposure, but the distribution of studies of brain and other central nervous system cancers is more balanced. Because of that pattern, the IOM believes that further study of an association between DU and central nervous system cancers may be warranted but should not be assigned a high priority.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and cancers of the central nervous system, including brain cancer, exists.

H. Stomach Cancer

The IOM considered 21 published studies of a possible association between natural uranium or DU, and stomach cancer, including 16 processing studies, one study of military populations, and four residential studies. All but three had statistically non-significant results, and most demonstrated the same or decreased mortality or incidence. The three studies that had statistically significant results all showed a decrease in mortality or incidence. Overall, the IOM finds little evidence to suggest that exposure to natural uranium or DU increases the risk of stomach cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and stomach cancer exists.

I. Male Genital Cancers

1. Prostatic Cancer

The IOM evaluated 19 published studies of a potential association between exposure to natural or depleted uranium and prostatic cancer, including 14 processing studies, two studies of deployed populations, and three residential studies. Only one reported a statistically significant finding: a significant reduction in prostatic-cancer incidence, but not mortality. This study is limited by a lack of data on internal radiation exposure. Three other studies of processing workers reported increased prostatic-cancer mortality, but none of the standard mortality rates were statistically different from the null value, indicating no effect (Ritz, 1999; Beral *et al.,* 1988; Loomis and Wolf, 1996).

Of the 19 studies considered, none demonstrated a significant increase in the risk of prostatic cancer after exposure to uranium, and one showed a significant decrease in cancer incidence but not mortality. On the basis of the available evidence, IOM would assign a low priority to further study of an association between exposure to DU and prostatic cancer.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and prostatic cancer exists.

2. Testicular Cancer

IOM considered 15 published studies for a possible relationship between exposure to natural uranium or DU and testicular cancer, including 11 studies of uranium-processing workers, three studies of military populations, and one study of residents living near a nuclear facility in Pennsylvania. None of the results achieved statistical significance,

although all occupational cohorts had lower mortality. IOM finds no consistent evidence that uranium exposure increases the risk of testicular cancer. Testicular cancer, although very rare in the general population, is common in young adult males and therefore prevalent in deployed Veterans. Despite the inconsistent evidence, testicular cancer is of special interest to Gulf War Veterans. The IOM believes that further study of an association between DU and testicular cancer may be warranted, but should not be assigned a high priority.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and testicular cancer exists.

VIII. Non-Cancer Outcomes

A. Non-malignant Renal Disease

1. Mortality

Fourteen studies assessed the association between occupational exposure and renal-disease mortality. In many of the 14 studies, the computed death rates included all genitourinary conditions instead of focusing on renal diseases. In several of the plants, uranium exposure coexisted with other relevant heavy-metal or chemical exposure. Generally, most researchers were unable to isolate the effects of uranium exposure alone. Four studies found an excess mortality that was not statistically significant. One study reported a statistically significant decrease in mortality. Other studies also reported a decrease or no difference in mortality after uranium exposure.

2. Morbidity

IOM concludes that there is inadequate/insufficient evidence to determine whether an association between exposure to uranium and non-malignant renal disease exists.

B. Non-maligant Respiratory Disease

IOM evaluated 16 studies of exposure to uranium and non-malignant respiratory disease. The results of several of the studies support an effect of employment in uranium-processing facilities on nonmalignant respiratory disease, but their applicability to military DU exposure is limited by the extent of concomitant coexposure of such workers to other respiratory toxicants. Several other studies found decreases in lung-disease mortality in exposed populations. On the basis of the evidence, IOM would assign a high priority to further study of an association between exposure to DU and nonmalignant respiratory disease.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and nonmalignant respiratory disease exists.

C. Neurologic Effects

Overall, the published studies of neurologic outcomes are either negative studies that do not find any evidence of health effects of exposure to DU or relatively small studies that find inconstant associations. On the basis of the available evidence, IOM would assign a high priority to further study of an association between exposure to DU and neurologic effects.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and nonmalignant respiratory disease exists.

D. Reproductive and Developmental Effects

A few studies examined the effects of natural uranium or DU on human reproduction and development. Relatively large populations are generally necessary to demonstrate significant but subtle reproductive or developmental effects. The studies reviewed generally had too few subjects or relied on insufficiently precise exposure assessment to support definitive conclusions. On the basis of the available evidence, IOM would assign a high priority to further study of an association between exposure to DU and reproductive and developmental effects.

IOM found inadequate/insufficient evidence to determine whether an association between exposure to uranium and reproductive and developmental effects exist.

IX. Other Health Outcomes

For other health outcomes, IOM found that the effects of exposure to natural uranium or DU have not been studied in detail in humans, and that the evidence from which to draw conclusions is sparse. Consequently, IOM found inadequate/insufficient evidence to determine whether an association exists between exposure to uranium and cardiovascular effects, genotoxic effects, hematologic effects, immunologic effects and skeletal effects.

Summary

The likelihood of detecting an association between exposure and a health outcome depends on several factors. For the health outcomes discussed, IOM concluded that exposure to uranium is not associated with a large or frequent effect. Nevertheless, it is possible that DU-exposed Veterans will have a small increase in the likelihood of developing the disease. Typically, extremely large study populations are necessary to demonstrate that a specific exposure is not associated with a health outcome. IOM's evaluation of the literature supports the conclusion that a large or frequent effect is unlikely, but it is not possible to state conclusively that a particular health outcome cannot occur.

IOM concluded that there is inadequate/insufficient evidence to determine whether an association exists between exposure to uranium and the following health outcomes: lung cancer; leukemias; lymphomas; bone cancer; renal cancer; bladder cancer; brain and other central nervous system cancers; stomach cancer; male genital cancers (prostatic and testicular cancers); non-malignant renal disease; non-malignant respiratory disease; neurologic effects; reproductive effects; and other health outcomes (cardiovascular effects, genotoxicity, hematologic effects, immunologic effects, and skeletal effects).

Conclusion

After careful review of the findings of the IOM Report, *Gulf War and Health: Updated Literature Review of Depleted Uranium,* the Secretary has determined that the scientific evidence presented in the 2008 IOM report and other information available to the Secretary indicates that no new presumption of service connection is warranted at this time for any of the illnesses described in the 2008 IOM report.

Approved: March 1, 2010.

John R. Gingrich,

Chief of Staff, Department of Veterans Affairs.

[FR Doc. 2010–4882 Filed 3–8–10; 8:45 am]

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