

and finally ended their long, extremely trying captivity in Vietnam.

For most Americans, Operation Homecoming marked the end of U.S. involvement in the Vietnam conflict. However, the heroes that survived torture and mistreatment within Vietnamese prison camps, such as the infamous "Hanoi Hilton," know that the job is not finished.

One of our most sacred vows to members of our Armed Services is that no American soldier will be left behind on the field of battle. None understand this better than the gentleman from Texas, Congressman SAM JOHNSON—fighter pilot, prisoner of war, and American hero.

Colonel SAM JOHNSON'S 29 years in the Air Force was marked with valor and selfless service. A combat veteran of both the Korean and Vietnam conflicts, he was twice awarded the Silver Star, our nation's third highest award for gallantry in action, and the Distinguished Flying Cross for valor and heroism in aerial flight, in his more than eighty career combat missions.

Since regaining his freedom 45 years ago, Congressman JOHNSON has remained a staunch advocate for veterans and their families, as attested by being awarded the National Patriot award, the Congressional Medal of Honor Society's highest civilian accolade, for his tireless work to help improve livelihoods and to provide closure for families of missing U.S. soldiers.

The Department of Defense estimates that more than 82,000 U.S. personnel have still not been accounted for from previous wars and conflicts. We must ensure that we do everything we can to fulfill the promise to our nation's heroes: that we will not leave anyone behind on foreign battlefields.

As this resolution importantly recognizes, cooperation with foreign governments is key to efforts to recover, identify, and account for all missing U.S. personnel. I thank the gentleman from Texas, SAM JOHNSON, for his life of service, and for authoring this legislation.

I urge my colleagues to join me in supporting it.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from South Carolina (Mr. WILSON) that the House suspend the rules and agree to the resolution, H. Res. 129, as amended.

The question was taken.

The SPEAKER pro tempore. In the opinion of the Chair, two-thirds being in the affirmative, the ayes have it.

Mr. SAM JOHNSON of Texas. Mr. Speaker, on that I demand the yeas and nays.

The yeas and nays were ordered.

The SPEAKER pro tempore. Pursuant to clause 8 of rule XX, further proceedings on this motion will be postponed.

□ 1630

## LOW-DOSE RADIATION RESEARCH ACT OF 2018

Mr. MARSHALL. Mr. Speaker, I move to suspend the rules and pass the bill (H.R. 4675) to amend the Energy Policy Act of 2005 to provide for a low-dose radiation basic research program, as amended.

The Clerk read the title of the bill. The text of the bill is as follows:

H.R. 4675

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. SHORT TITLE.

This Act may be cited as the "Low-Dose Radiation Research Act of 2018".

### SEC. 2. LOW-DOSE RADIATION RESEARCH PROGRAM.

(a) IN GENERAL.—Subtitle G of title IX of the Energy Policy Act of 2005 (42 U.S.C. 16311 et seq.) is amended by inserting after section 977 the following new section:

#### "SEC. 977A. LOW-DOSE RADIATION RESEARCH PROGRAM.

"(a) IN GENERAL.—The Secretary shall carry out a basic research program on low-dose radiation to—

"(1) enhance the scientific understanding of, and reduce uncertainties associated with, the effects of exposure to low-dose radiation; and

"(2) inform improved risk-assessment and risk-management methods with respect to such radiation.

"(b) PROGRAM COMPONENTS.—In carrying out the program required under subsection (a), the Secretary shall—

"(1) formulate scientific goals for low-dose radiation basic research in the United States;

"(2) identify ongoing scientific challenges for understanding the long-term effects of ionizing radiation on biological systems;

"(3) develop a long-term strategic and prioritized basic research agenda to address such scientific challenges in coordination with other research efforts;

"(4) identify and, to the extent possible, quantify, potential monetary and health-related benefits to Federal agencies, the general public, industry, research communities, and other users of information produced by such research program;

"(5) leverage the collective body of knowledge from existing low-dose radiation research; and

"(6) engage with other Federal agencies, research communities, and potential users of information produced under this section, including institutions concerning radiation research, medical physics, radiology, health physics, and emergency response.

"(c) COORDINATION.—In carrying out the program, the Secretary, in coordination with the Physical Science Subcommittee of the National Science and Technology Council, shall—

"(1) support the directives under section 106 of the American Innovation and Competitiveness Act (42 U.S.C. 6601 note);

"(2) ensure that the Office of Science of the Department of Energy consults with the National Aeronautics and Space Administration, the National Institutes of Health, the Environmental Protection Agency, the Department of Defense, the Nuclear Regulatory Commission, and the Department of Homeland Security;

"(3) advise and assist the National Science and Technology Council on policies and initiatives in radiation biology, including enhancing scientific knowledge of the effects of low-dose radiation on biological systems to improve radiation risk-assessment and risk-management methods; and

"(4) identify opportunities to stimulate international cooperation relating to low-dose radiation and leverage research and knowledge from sources outside of the United States.

"(d) RESEARCH PLAN.—Not later than 180 days after the date of enactment of this Act, the Secretary shall transmit to the Com-

mittee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate a 4-year research plan that identifies and prioritizes basic research needs relating to low-dose radiation. In developing such plan, the Secretary shall incorporate the components described in subsection (b).

"(e) DEFINITION OF LOW-DOSE RADIATION.—In this section, the term 'low-dose radiation' means a radiation dose of less than 100 millisieverts.

"(f) RULE OF CONSTRUCTION.—Nothing in this section shall be construed to subject any research carried out by the Secretary for the program under this section to any limitations described in 977(e) of the Energy Policy Act of 2005 (42 U.S.C. 16317(e)).

"(g) FUNDING.—For purposes of carrying out this section, the Secretary is authorized to make available from funds provided to the Biological and Environmental Research Program—

"(1) \$20,000,000 for fiscal year 2018;

"(2) \$20,000,000 for fiscal year 2019;

"(3) \$30,000,000 for fiscal year 2020; and

"(4) \$30,000,000 for fiscal year 2021."

(b) CONFORMING AMENDMENT.—The table of contents for subtitle G of title IX of the Energy Policy Act of 2005 is amended by inserting after the item relating to section 977 the following:

"977A. Low-dose radiation research program."

### SEC. 3. SPENDING LIMITATION.

No additional funds are authorized to be appropriated to carry out this Act and the amendments made by this Act, and this Act and such amendments shall be carried out using amounts otherwise available for such purpose.

The SPEAKER pro tempore. Pursuant to the rule, the gentleman from Kansas (Mr. MARSHALL) and the gentlewoman from Texas (Ms. EDDIE BERNICE JOHNSON) each will control 20 minutes.

The Chair recognizes the gentleman from Kansas.

#### GENERAL LEAVE

Mr. MARSHALL. Mr. Speaker, I ask unanimous consent that all Members have 5 legislative days to revise and extend their remarks and to include extraneous material on H.R. 4675, the bill now under consideration.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from Kansas?

There was no objection.

Mr. MARSHALL. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I rise in support of H.R. 4675, the Low-Dose Radiation Research Act of 2018.

H.R. 4675 requires the Department of Energy to carry out a research program on low-dose radiation within the Office of Science. This program will increase our understanding of the health effects that low doses of ionizing radiation have on biological systems. Every day, humans are exposed to low doses of radiation. It is the product of industrial activities, commercial processes, medical procedures, and naturally occurring systems.

Research has consistently shown us the adverse health effects associated with high doses of radiation, but the health risks associated with exposure to low doses of radiation are much

more difficult to observe, and we are a long way away from understanding and accurately assessing this risk.

In the absence of conclusive evidence, agencies like the Department of Energy, the Food and Drug Administration, and the Environmental Protection Agency are obligated to assume that any exposure to radiation increases the risk of harmful human effects. Without additional research, Federal agencies have no way to measure if there is a safe radiation exposure threshold.

Our restricted understanding of low-dose radiation health risks directly impairs our ability to address potential radiological events and medically-based radiation exposures. It may also result in overly stringent regulatory standards, inhibiting the development of nuclear energy opportunities and posing an undue economic burden on the American people.

As a physician in my home State of Kansas, I have a firsthand understanding of the crucial importance of verified research to ensure the best medical outcomes for my patients. For instance, an adult patient who receives a computed tomography, or a CT scan, of the abdomen and pelvis is exposed to approximately 3 years' worth of natural background radiation at once.

The CT scan is an invaluable diagnostic tool, replacing many invasive surgical procedures, and is a medical necessity for countless Americans. Today, we physicians are unable to inform our patients of the specific risks associated with these types of vital imaging processes.

There is a broad consensus among the radiobiology community that more research is necessary for Federal agencies, physicians, and related experts to make better informed decisions regarding these risks. It is no surprise that H.R. 4675 has received support from the Health Physics Society, the American Association of Physicists in Medicine, the National Council on Radiation Protection and Measurements, the Radiation Research Society, the American Society for Radiation Oncology, and leading researchers from Northwestern University and Columbia University.

I would especially like to thank Chairman LAMAR SMITH, Representative DAN LIPINSKI, and Energy Subcommittee Chairman RANDY WEBER for cosponsoring this important legislation.

I encourage my colleagues to support this bill, and I reserve the balance of my time.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I rise in support of H.R. 4675, the Low-Dose Radiation Research Act of 2018.

The Department of Energy funds cutting-edge research across a variety of disciplines. For many years, DOE stewarded research into low-dose radiation exposure. This included studies into the effects of radiation exposure in

higher risk populations and the examination of the changes that a cell undergoes when exposed to low-dose radiation. These research investments resulted in notable advancements in this field and significantly expanded our understanding of radiation exposure.

Over the past several years, this research program was ramped up and eventually eliminated—or ramped down. However, there is much more that should be explored, and the Department of Energy is best positioned to lead this effort in coordination with other Federal agencies that have a stake in this work.

Expanding our understanding of low-dose radiation could improve how we utilize medical diagnostic tools or change how we regulate nuclear power plants. Radiation is all around us every day. When we fly on a plane or walk into a building made of limestone, much like the one we are in now, we experience a small increase in our radiation exposure, but we still don't have an answer to the fundamental question of what that means for our health.

Are there healthy levels of radiation exposure or are they all directly tied to an increased risk of cancer?

What is an acceptable level for long-term human health?

The answers to these fundamental questions can only be found by properly investing in the research field. I am hopeful that reconstituting this program at DOE will lead to more scientific advancements and will expand humankind's understanding of radiation exposure. DOE is the right place to do this work, and the benefits should be numerous and invaluable.

I want to thank Mr. MARSHALL for introducing this bill, and I strongly support this bill and encourage my colleagues to do the same.

Mr. Speaker, I reserve the balance of my time.

Mr. MARSHALL. Mr. Speaker, I yield 3 minutes to the gentleman from Texas (Mr. SMITH), my friend and mentor, the chairman of the Science, Space, and Technology Committee.

Mr. SMITH of Texas. Mr. Speaker, first of all, I would like to thank the gentleman from Kansas, Dr. ROGER MARSHALL, the vice chairman of the Subcommittee on Research and Technology, for yielding me time on his bill, H.R. 4675, the Low-Dose Radiation Research Act of 2018.

H.R. 4675, cosponsored by Representative DAN LIPINSKI, Energy Subcommittee Chairman RANDY WEBER, and Dr. NEAL DUNN, authorizes a revitalized low-dose radiation research program within the Biological and Environmental Research program of the Department of Energy. This basic research is part of the Science, Space, and Technology Committee's continued effort to ensure America remains a leader in foundational science and innovation.

The DOE low-dose radiation basic research program will analyze and seek to determine any health impacts of low

levels of radiation, providing critical knowledge to our Nation's researchers, industry, healthcare community, and military as they handle nuclear material, maintain the Nation's nuclear weapons program, provide medical treatment, and dispose of nuclear waste.

Low-dose radiation research can benefit regulatory agencies that set nuclear safety standards for the public. This will enable Federal emergency response agencies to more accurately set areas of evacuation for radiological incidents.

The research is also of particular importance to physicians, who rely on a thorough knowledge of radiation health risks to determine when and how to use lifesaving diagnostics to detect and deter and treat cancer in patients.

I thank Vice Chairman MARSHALL for his initiative in developing and managing this important legislation, and I urge my colleagues to support this bipartisan bill.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Speaker, I continue to reserve the balance of my time.

Mr. MARSHALL. Mr. Speaker, I yield 2 minutes to the gentleman from Texas (Mr. WEBER), the chairman of the Energy Subcommittee.

Mr. WEBER of Texas. Mr. Speaker, I appreciate Congressman MARSHALL's bill coming up today.

I rise, Mr. Speaker, in support of H.R. 4675, the Low-Dose Radiation Research Act of 2018. This legislation authorizes a research program on the health effects of low-dose radiation within the Department of Energy's Office of Science.

Currently, key functions of the United States nuclear and medical industries are guided by assumption-based radiation dose limits and protections. In order to best serve our Nation's energy, medical, and defense needs, we need foundational research in radiology and biology to directly define the impact of low doses of radiation. The United States should not rely on a "best approximation" when it comes to our nuclear regulatory policies.

Mr. Speaker, today we have an opportunity to ensure that we as a nation are doing everything we can to make certain that the regulations, the guidelines, and the protections that we put in place are grounded in sound science.

Again, I want to thank Congressman MARSHALL for introducing this important legislation.

Ms. EDDIE BERNICE JOHNSON of Texas. Mr. Speaker, I urge the passage of the bill. I have no further requests for time, and I yield back the balance of my time.

Mr. MARSHALL. Mr. Speaker, I yield myself such time as I may consume.

H.R. 4675 authorizes a critical research program in radiation biology and will help ensure that we are basing our industrial, commercial, and medical regulations on the best available science.

I want to once again thank my colleagues on the Science, Space, and Technology Committee who have co-sponsored H.R. 4675, including Chairman LAMAR SMITH, Representative DAN LIPINSKI, and Energy Subcommittee Chairman RANDY WEBER. I also want to thank the numerous researchers and stakeholders who provided feedback as we developed this legislation.

I encourage my colleagues to support this bipartisan legislation, and I yield back the balance of my time.

The SPEAKER pro tempore. The question is on the motion offered by the gentleman from Kansas (Mr. MARSHALL) that the House suspend the rules and pass the bill, H.R. 4675, as amended.

The question was taken; and (two-thirds being in the affirmative) the rules were suspended and the bill, as amended, was passed.

A motion to reconsider was laid on the table.

## ACCELERATING AMERICAN LEADERSHIP IN SCIENCE ACT OF 2018

Mr. HULTGREN. Mr. Speaker, I move to suspend the rules and pass the bill (H.R. 4377) to direct the Secretary of Energy to carry out certain upgrades to research equipment and construct research user facilities, and for other purposes, as amended.

The Clerk read the title of the bill.

The text of the bill is as follows:

H.R. 4377

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

### SECTION 1. SHORT TITLE.

This Act may be cited as the “Accelerating American Leadership in Science Act of 2018”.

### SEC. 2. ADVANCED PHOTON SOURCE UPGRADE.

(a) IN GENERAL.—The Secretary of Energy shall provide for the upgrade to the Advanced Photon Source described in the publication approved by the Basic Energy Sciences Advisory Committee on June 9, 2016, titled “Report on Facility Upgrades”, including the development of a multi-bend achromat lattice to produce a high flux of coherent x-rays within the hard x-ray energy region and a suite of beamlines optimized for this source.

(b) DEFINITIONS.—In this section:

(1) FLUX.—The term “flux” means the rate of flow of photons.

(2) HARD X-RAY.—The term “hard x-ray” means a photon with energy greater than 20 kiloelectron volts.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the upgrade under this section occurs before December 31, 2025.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the upgrade under this section—

- (1) \$93,000,000 for fiscal year 2018;
- (2) \$130,000,000 for fiscal year 2019;
- (3) \$152,400,000 for fiscal year 2020;
- (4) \$150,000,000 for fiscal year 2021;
- (5) \$73,600,000 for fiscal year 2022; and
- (6) \$20,000,000 for fiscal year 2023.

### SEC. 3. LONG-BASELINE NEUTRINO FACILITY FOR DEEP UNDERGROUND NEUTRINO EXPERIMENT.

(a) IN GENERAL.—The Secretary of Energy shall provide for a Long-Baseline Neutrino

Facility to facilitate the international Deep Underground Neutrino Experiment to enable a program in neutrino physics to measure the fundamental properties of neutrinos, explore physics beyond the Standard Model, and better clarify the nature of matter and antimatter.

(b) FACILITY CAPABILITIES.—The Secretary shall ensure that the facility described in subsection (a) will provide, at a minimum, the following capabilities:

(1) A broad-band neutrino beam capable of 1.2 megawatts (MW) of beam power and upgradable to 2.4 MW of beam power.

(2) Four caverns excavated for a forty kiloton fiducial detector mass and supporting surface buildings and utilities.

(3) Neutrino detector facilities at both the Far Site in South Dakota and the Near Site in Illinois to categorize and study neutrinos on their 800-mile journey between the two sites.

(4) Cryogenic systems to support neutrino detectors.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the facility under this section occurs before December 31, 2026.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the construction of the facility under this section—

- (1) \$95,000,000 for fiscal year 2018;
- (2) \$160,000,000 for fiscal year 2019;
- (3) \$195,000,000 for fiscal year 2020;
- (4) \$195,000,000 for fiscal year 2021;
- (5) \$200,000,000 for fiscal year 2022;
- (6) \$200,000,000 for fiscal year 2023;
- (7) \$195,000,000 for fiscal year 2024;
- (8) \$150,000,000 for fiscal year 2025; and
- (9) \$50,000,000 for fiscal year 2026.

### SEC. 4. SPALLATION NEUTRON SOURCE PROTON POWER UPGRADE.

(a) IN GENERAL.—The Secretary of Energy shall provide for a proton power upgrade to the Spallation Neutron Source.

(b) DEFINITION OF PROTON POWER UPGRADE.—For the purposes of this section, the term “proton power upgrade” means the Spallation Neutron Source power upgrade described in—

(1) the publication of the Office of Science of the Department of Energy titled “Facilities for the Future of Science: A Twenty-Year Outlook”, published December 2003;

(2) the publication of the Office of Science of the Department of Energy titled “Four Years Later: An Interim Report on Facilities for the Future of Science: A Twenty-Year Outlook”, published August 2007; and

(3) the publication approved by the Basic Energy Sciences Advisory Committee on June 9, 2016, titled “Report on Facility Upgrades”.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the upgrade under this section occurs before December 31, 2025.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the upgrade under this section—

- (1) \$26,000,000 for fiscal year 2018;
- (2) \$70,800,000 for fiscal year 2019;
- (3) \$33,500,000 for fiscal year 2020;
- (4) \$40,500,000 for fiscal year 2021;
- (5) \$21,100,000 for fiscal year 2022;
- (6) \$13,200,000 for fiscal year 2023; and
- (7) \$2,900,000 for fiscal year 2024.

### SEC. 5. SPALLATION NEUTRON SOURCE SECOND TARGET STATION.

(a) IN GENERAL.—The Secretary of Energy shall provide for a second target station for the Spallation Neutron Source.

(b) DEFINITION OF SECOND TARGET STATION.—For the purposes of this section, the term “second target station” means the Spallation Neutron Source second target station described in—

(1) the publication of the Office of Science of the Department of Energy titled “Facilities for the Future of Science: A Twenty-Year Outlook”, published December 2003;

(2) the publication of the Office of Science of the Department of Energy titled “Four Years Later: An Interim Report on Facilities for the Future of Science: A Twenty-Year Outlook”, published August 2007; and

(3) the publication approved by the Basic Energy Sciences Advisory Committee on June 9, 2016, titled “Report on Facility Upgrades”.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the second target station under this section occurs before December 31, 2030, with the option for early operation in 2028.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the construction of the facility under this section—

- (1) \$5,000,000 for fiscal year 2018;
- (2) \$10,000,000 for fiscal year 2019;
- (3) \$15,000,000 for fiscal year 2020;
- (4) \$25,000,000 for fiscal year 2021;
- (5) \$50,000,000 for fiscal year 2022;
- (6) \$200,000,000 for fiscal year 2023;
- (7) \$275,000,000 for fiscal year 2024;
- (8) \$275,000,000 for fiscal year 2025;
- (9) \$275,000,000 for fiscal year 2026;
- (10) \$250,000,000 for fiscal year 2027; and
- (11) \$120,000,000 for fiscal year 2028.

### SEC. 6. SPENDING LIMITATION.

No additional funds are authorized to be appropriated to carry out this Act and the amendments made by this Act, and this Act and such amendments shall be carried out using amounts otherwise available for such purpose.

The SPEAKER pro tempore. Pursuant to the rule, the gentleman from Illinois (Mr. HULTGREN) and the gentleman from Texas (Ms. EDDIE BERNICE JOHNSON) each will control 20 minutes.

The Chair recognizes the gentleman from Illinois.

#### GENERAL LEAVE

Mr. HULTGREN. Mr. Speaker, I ask unanimous consent that all Members may have 5 legislative days to revise and extend their remarks and to include extraneous material on H.R. 4377, the bill now under consideration.

The SPEAKER pro tempore. Is there objection to the request of the gentleman from Illinois?

There was no objection.

Mr. HULTGREN. Mr. Speaker, I yield myself such time as I may consume.

Mr. Speaker, I rise today to urge support for H.R. 4377, the Accelerating American Leadership in Science Act.

This legislation is another key component in today's package of bills that maintains the American commitment to the basic scientific research necessary to advance our economy and maintain our national defense.

I commend Chairman SMITH for his work on these bills and his support for the underlying bill. I also thank my colleagues from Illinois for their bipartisan support of this legislation, as well as the ranking member for her support.