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AMENDMENT NO._____ Calendar No._____

Purpose: To modify provisions relating to the Next Generation Nuclear Plant Project.

IN THE SENATE OF THE UNITED STATES—110th Cong., 2d Sess.

S. 3036

AMENDMENT No. 4933

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of

By Craig

To:

S. 3036

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Page(s)

GPO: 2006 30-772 (Mac)

Ordered to lie on the table and to be printed

AMENDMENT intended to be proposed by Mr. Craig on behalf of himself and Mr. Inhofe

Viz:

At the end, add the following:

TITLE XVIII—NEXT GENERATION NUCLEAR PLANT

SEC. 1801. NEXT GENERATION NUCLEAR PLANT PROJECT MODIFICATIONS.

(a) PROJECT ESTABLISHMENT.—Section 641 of the Energy Policy Act of 2005 (42 U.S.C. 16021) is amended—

(1) in subsection (a)—

(A) by striking the subsection designation and heading and all that follows through "The Secretary" and inserting the following:

"(a) ESTABLISHMENT AND OBJECTIVE.—

"(1) ESTABLISHMENT.—The Secretary"; and

(B) by adding at the end the following:

"(2) OBJECTIVE.—

"(A) DEFINITION OF HIGH-TEMPERATURE, GAS-COOLED NUCLEAR ENERGY TECHNOLOGY.—In this paragraph, the term 'high-temperature, gas-cooled nuclear energy technology' means any nongreenhouse gas-emitting nuclear energy technology that provides—

"(i) an alternative to the burning of fossil fuels for industrial applications; and

"(ii) process heat to generate, for example, electricity, steam, hydrogen, and oxygen for activities such as—

"(I) petroleum refining;

"(II) petrochemical processes;

"(III) converting coal to synfuels and other hydrocarbon feedstocks; and

"(IV) desalination.

"(B) DESCRIPTION OF OBJECTIVE.—The objective of the Project shall be to carry out

demonstration projects for the development, licensing, and operation of high-temperature, gas-cooled nuclear energy technologies to support commercialization of those technologies.

"(C) REQUIREMENTS.—The functional, operational, and performance requirements for high-temperature, gas-cooled nuclear energy technologies shall be determined by the needs of marketplace industrial end-users (such as owners and operators of nuclear energy facilities, petrochemical entities, and petroleum entities), as projected for the 40-year period beginning on the date of enactment of this paragraph."; and

(2) in subsection (b)—

(A) in the matter preceding paragraph (1), by inserting "licensing," after "design,";

(B) in paragraph (1), by striking "942(d)" and inserting "952(d)"; and

(C) by striking paragraph (2) and inserting the following:

"(2) demonstrates the capability of the nuclear energy system to provide high-temperature process heat to produce—

"(A) electricity, steam, and other heat transport fluids; and

"(B) hydrogen and oxygen, separately or in combination.".

(b) PROJECT MANAGEMENT.—Section 642 of the Energy Policy Act of 2005 (42 U.S.C. 16022) is amended to read as follows:

"SEC. 642. PROJECT MANAGEMENT.

"(a) DEPARTMENTAL MANAGEMENT.—

"(1) IN GENERAL.—The Project shall be managed in the Department by the Office of Nuclear Energy.

"(2) GENERATION IV NUCLEAR ENERGY SYSTEMS INITIATIVE.—

"(A) IN GENERAL.—Subject to subparagraph (B), the Project may be carried out in coordination with the Generation IV Nuclear Energy Systems Initiative.

"(B) REQUIREMENT.—Regardless of whether the Project is carried out in coordination with the Generation IV Nuclear Energy Systems Initiative under subparagraph (A), the Secretary shall establish a separate budget line-item for the Project.

"(3) INTERACTION WITH INDUSTRY.—Any activity to support the Project by an individual or entity in the private industry shall be carried out pursu-

ant to a competitive cooperative agreement or other assistance agreement (such as a technology investment agreement) between the Department and the industry group established under subsection (c).

"(b) LABORATORY MANAGEMENT.—

"(1) IN GENERAL.—The Idaho National Laboratory shall be the lead National Laboratory for the Project.

"(2) COLLABORATION.—The Idaho National Laboratory shall collaborate regarding research and development activities with other National Laboratories, institutions of higher education, research institutes, representatives of industry, international organizations, and Federal agencies to support the Project.

"(c) INDUSTRY GROUP.—

"(1) ESTABLISHMENT.—The Secretary shall establish a group of appropriate industrial partners in the private sector to carry out cost-shared activities with the Department to support the Project.

"(2) COOPERATIVE AGREEMENT.—

"(A) IN GENERAL.—The Secretary shall offer to enter into a cooperative agreement or other assistance agreement with the industry group established under paragraph (1) to man-

age and support the development, licensing, construction, and initial operation of the Project.

"(B) REQUIREMENT.—The agreement under subparagraph (A) shall contain a provision under which the industry group may enter into contracts with entities in the public sector for the provision of services and products to that sector that reflect typical commercial practices regarding terms and conditions for risk, accountability, performance, and quality.

"(C) PROJECT MANAGEMENT.—

"(i) IN GENERAL.—The industry group shall use commercial practices and project management processes and tools in carrying out activities to support the Project.

"(ii) INTERFACE REQUIREMENTS.—The requirements for interface between the project management requirements of the Department (including the requirements contained in the document of the Department numbered DOE O 413.3A and entitled 'Program and Project Management for the Acquisition of Capital Assets') and the

commercial practices and project management processes and tools described in clause (i) shall be defined in the agreement under subparagraph (A).

"(3) COST SHARING.—Activities of industrial partners funded by the Project shall be cost-shared in accordance with section 988.

"(4) PREFERENCE.—Preference in determining the final structure of industrial partnerships under this part shall be given to a structure (including designating as a lead industrial partner an entity incorporated in the United States) that retains United States technological leadership in the Project while maximizing cost sharing opportunities and minimizing Federal funding responsibilities.

"(d) PROTOTYPE PLANT SITING.—The prototype nuclear reactor and associated plant shall be sited at the Idaho National Laboratory in Idaho.

"(e) REACTOR TEST CAPABILITIES.—The Project shall use, if appropriate, reactor test capabilities at the Idaho National Laboratory.

"(f) OTHER LABORATORY CAPABILITIES.—The Project may use, if appropriate, facilities at other National Laboratories.".

(c) PROJECT ORGANIZATION.—Section 643 of the Energy Policy Act of 2005 (42 U.S.C. 16023) is amended—

(1) in subsection (a)(2), by inserting "transport and" before "conversion";

(2) in subsection (b)—

(A) in paragraph (1)—

(i) by striking subparagraph (C); and

(ii) by redesignating subparagraphs (A), (B), and (D) as clauses (i), (ii), and (iii), respectively, and indenting the clauses appropriately;

(B) in paragraph (2)—

(i) in subparagraph (B), by striking ", through a competitive process,";

(ii) in subparagraph (C), by striking "reactor" and inserting "energy system";

(iii) in subparagraph (D), by striking "hydrogen or electricity" and inserting "energy transportation, conversion, and"; and

(iv) by redesignating subparagraphs (A) through (D) as clauses (i) through (iv), respectively, and indenting the clauses appropriately;

(C) by redesignating paragraphs (1) and (2) as subparagraphs (A) and (B), respectively, and indenting the subparagraphs appropriately;

(D) by striking "The Project shall be" and inserting the following:

"(1) IN GENERAL.—The Project shall be"; and

(E) by adding at the end the following:

"(2) OVERLAPPING PHASES.—The phases described in paragraph (1) may overlap for the Project or any portion of the Project, as necessary."; and

(3) in subsection (c)—

(A) in paragraph (1)(A), by striking "powerplant" and inserting "power plant";

(B) in paragraph (2), by adding at the end the following:

"(E) INDUSTRY GROUP.—The industry group established under section 642(c) may enter into any necessary contracts for services, support, or equipment in carrying out an agreement with the Department."; and

(C) in paragraph (3)—

(i) in the paragraph heading, by striking "RESEARCH";

(ii) in the matter preceding subparagraph (A), by striking "Research";

(iii) by striking "NERAC" each place it appears and inserting "NEAC";

(iv) in subparagraph (A), by striking clause (i) and inserting the following:

"(i) review program plans for the Project prepared by the Office of Nuclear Energy and all progress under the Project on an ongoing basis; and";

(v) in subparagraph (B), by striking "or appoint" and inserting "by appointing"; and

(vi) in subparagraph (D)—

(I) by striking "On a determination" and inserting the following:

"(i) IN GENERAL.—On a determination";

(II) in clause (i) (as designated by subclause (I))—

(aa) by striking "subsection (b)(1)" and inserting "subsection (b)(1)(A)"; and

(bb) by striking "subsection (b)(2)" and inserting "subsection (b)(1)(B)"; and

(III) by adding at the end the following:

"(ii) SCOPE.—The scope of the review conducted under clause (i) shall be in accordance with an applicable cooperative agreement or other assistance agreement (such as a technology investment agreement) between the Secretary and the industry group established under section 642(c).".

(d) NUCLEAR REGULATORY COMMISSION.—Section 644 of the Energy Policy Act of 2005 (42 U.S.C. 16024) is amended—

(1) in subsection (b)—

(A) by redesignating paragraphs (1) through (4) as subparagraphs (A) through (D), respectively, and indenting the subparagraphs appropriately;

(B) by striking "Not later than" and inserting the following:

"(1) IN GENERAL.—Not later than"; and

(C) by adding at the end the following:

"(2) REQUIREMENT.—To the maximum extent practicable, in carrying out subparagraphs (B) and (C) of paragraph (1), the Nuclear Regulatory Com-

mission shall independently review and, as appropriate, use the results of analyses conducted for or by the license applicant."; and

(2) by striking subsection (c) and inserting the following:

"(c) ONGOING INTERACTION.—The Nuclear Regulatory Commission shall establish a separate program office for advanced reactors—

"(1) to develop and implement regulatory requirements consistent with the safety bases of the type of nuclear reactor developed by the Project, with the specific objective that the requirements shall be applied to follow-on commercialized high-temperature, gas-cooled nuclear reactors;

"(2) to avoid conflicts in the availability of resources with licensing activities for light water reactors;

"(3) to focus and develop resources of the Nuclear Regulatory Commission for the review of advanced reactors;

"(4) to support the effective and timely review of preapplication activities and review of applications to support applicant needs; and

"(5) to provide for the timely development of regulatory requirements, including through the

preapplication process, and review of applications for advanced technologies, such as high-temperature, gas-cooled nuclear technology systems.".

(e) PROJECT TIMELINES AND AUTHORIZATION OF APPROPRIATIONS.—Section 645 of the Energy Policy Act of 2005 (42 U.S.C. 16025) is amended—

(1) by striking subsections (a) and (b) and inserting the following:

"(a) SUMMARY OF AGREEMENT.—Not later than December 31, 2009, the Secretary shall submit to Congress a report that contains a summary of each cooperative agreement or other assistance agreement (such as a technology investment agreement) entered into between the Secretary and the industry group under section 642(a)(3), including a description of the means by which the agreement will provide for successful completion of the development, design, licensing, construction, and initial operation and demonstration period of the prototype facility of the Project.

"(b) OVERALL PROJECT PLAN.—

"(1) IN GENERAL.—Not later than December 31, 2009, the Secretary shall submit to Congress an overall plan for the Project, to be prepared jointly by the Secretary and the industry group established under section 642(c), pursuant to a cooperative

agreement or other assistance agreement (such as a technology investment agreement).

"(2) INCLUSIONS.—The plan under paragraph (1) shall include—

"(A) a summary of the schedule for the design, licensing, construction, and initial operation and demonstration period for the nuclear energy system prototype facility and hydrogen production prototype facility of the Project;

"(B) the process by which a specific design for the prototype nuclear energy system facility and hydrogen production facility will be selected;

"(C) the specific licensing strategy for the Project, including—

"(i) resource requirements of the Nuclear Regulatory Commission; and

"(ii) the schedule for the submission of a preapplication, the submission of an application, and application review for the prototype nuclear energy system facility of the Project;

"(D) a summary of the schedule for each major event relating to the Project; and

"(E) a time-based cost and cost-sharing profile to support planning for appropriations."; and

(2) in subsection (d), in the matter preceding paragraph (1), by striking "research and construction activities" and inserting "research and development, design, licensing, construction, and initial operation and demonstration activities".