116TH CONGRESS
1ST SESSION

S. 1534

To require the Secretary of Defense to conduct an assessment of quantum computing technology to address problems associated with exposure to PFAS, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 16, 2019

Mr. PETERS (for himself and Ms. ERNST) introduced the following bill; which was read twice and referred to the Committee on Armed Services

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A BILL

To require the Secretary of Defense to conduct an assessment of quantum computing technology to address problems associated with exposure to PFAS, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. ASSESSMENT OF QUANTUM COMPUTING TECH-**
4 **NOLOGY TO ADDRESS PFAS EXPOSURE.**

5 (a) ASSESSMENT REQUIRED.—Not later than one
6 year after the date of the enactment of this Act, the Sec-
7 retary of Defense, acting through the Under Secretary of
8 Defense for Research and Engineering and in consultation

1 with the Assistant Secretary of Defense for Installations,

2 Environment, and Energy, shall complete an assessment

3 of quantum computing and how it may be used to address

4 problems associated with exposure to PFAS.

5   (b) ELEMENTS.—The assessment required by sub-

6 section (a) shall include the following:

7   (1) Analysis of the potential of hybrid quantum

8   classical computing to utilize the unique attributes

9   of such computing for addressing issues of chemical

10   contamination such as that caused by PFAS.

11   (2) Assessment of the potential of quantum

12   computing to address problems of exposure to

13   PFAS, to remediate solutions, and to develop alter-

14   natives to PFAS for materials that otherwise con-

15   tain PFAS.

16   (3) An inventory of the existing and potential

17   work on exposure to PFAS and possible partnership

18   opportunities with academic institutions, private sec-

19   tor technology and chemical companies, and other

20   Federal and State government entities.

21   (4) Assessment of the availability of current

22   and near-term quantum computing resources such

23   as cloud based quantum systems, as well as a road-

24   map for long-term quantum development.

1   (5) An assessment of the current quantum com-

2 puting efforts of the Department and how each ex-

3 isting quantum computing effort may assist or serve

4 as a model for the Department.

5   (6) A description of the amount of funding that

6 would be required to take initial steps to leverage

7 near term quantum computing to address problems

8 relating to exposure to PFAS.

9 (c) PFAS DEFINED.—In this section, the term

10 "PFAS" means the group of chemicals known as "per-

11 and polyfluoroalkyl substances".

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