

118TH CONGRESS
1ST SESSION

H. R. 1009

To require the President develop a national strategy for utilizing microreactors to assist with natural disaster response efforts, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 14, 2023

Mr. DONALDS (for himself, Mr. FLEISCHMANN, Mr. FEENSTRA, Mr. OBERNOLTE, and Ms. MACE) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure, and in addition to the Committees on Energy and Commerce, and Armed Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To require the President develop a national strategy for utilizing microreactors to assist with natural disaster response efforts, 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. SHORT TITLE.**

4 This Act may be cited as the “National Strategy to
5 Utilize Microreactors for Natural Disaster Response Ef-
6 forts Act”.

1 **SEC. 2. FINDINGS; SENSE OF CONGRESS.**

2 (a) FINDINGS.—Congress finds that—

3 (1) natural disasters often cause loss of life,
4 human suffering, loss of income, and property loss
5 and damage;

6 (2) natural disasters often disrupt the normal
7 functioning of governments and communities and
8 adversely affect individuals and families with great
9 severity; and

10 (3) special measures, designed to assist with
11 and supplement natural disaster response efforts,
12 such as replacing the wide utilization of diesel gen-
13 erators with microreactors when responding to the
14 impacts of a natural disaster, are necessary and
15 worthwhile for the wellbeing of the United States.

16 (b) SENSE OF CONGRESS.—It is the sense of Con-
17 gress that Congress should support the utilization of nu-
18 clear energy, with a priority for nuclear energy generated
19 by microreactors, during natural disaster response efforts
20 because of the following considerations:

21 (1) Nuclear energy generated by a microreactor
22 provides a safe form of consistent and reliable elec-
23 tricity that is generally sought when responding to
24 the impacts of natural disasters.

25 (2) Nuclear energy that is generated by micro-
26 reactors—

1 (A) is the most rapidly deployable source
2 of energy available that can provide uninter-
3 rupted power to assist with natural disaster re-
4 sponse efforts; and

5 (B) can be used to augment diesel-gen-
6 erated power during national disaster response
7 efforts.

8 (3) The generation of electricity from micro-
9 reactors emits fewer greenhouse gas emissions than
10 the generation of electricity from other sources of
11 electricity.

12 (4) Microreactors can be easily transported and
13 carried by aircraft, semi-trucks, or shipping vessels
14 to timely provide electricity upon demand to an area
15 that is impacted by a natural disaster.

16 (5) Microreactors can be operated autono-
17 mously, which avoids the need for on-site operators
18 in an area that is impacted by a natural disaster.

19 (6) Microreactors can be operated for several
20 years without being refueled, which avoids logistical
21 challenges associated with refueling other power
22 sources, including diesel generators, in an area that
23 is impacted by a natural disaster.

24 (7) With approval by the Nuclear Regulatory
25 Commission, microreactors can be—

1 (A) mass produced in factories around the
2 United States; and

3 (B) mass deployed to assist with natural
4 disaster response efforts.

5 (8) Nuclear energy generated by a microreactor
6 can be used to help restore electrical grids by pro-
7 viding temporary power and spot generation for crit-
8 ical electricity generating facilities while grid repairs
9 take place.

10 (9) Microreactors can—

11 (A) power lifesaving and life-sustaining fa-
12 cilities, such as hospitals;

13 (B) power mass transit systems and water
14 quality treatment plants;

15 (C) power large pumps that are often used
16 to remove water from an impacted area;

17 (D) power airport facilities and air traffic
18 control towers;

19 (E) power communications centers that are
20 vital to dispatching important announcements
21 and correspondence during natural disaster re-
22 sponse efforts; and

23 (F) support the operation of local, State,
24 and Federal facilities in the event that a nat-
25 ural disaster severely impacts such facilities and

1 results in the loss of electricity for such facili-
2 ties.

3 (10) After providing electricity to an area that
4 is impacted by a natural disaster, microreactors can
5 be easily transported out of the area to other loca-
6 tions where they are needed or to standby storage
7 locations until deployment to assist with future nat-
8 ural disaster response efforts.

9 **SEC. 3. DEVELOPMENT OF NATIONAL STRATEGY.**

10 (a) IN GENERAL.—The President shall, in consulta-
11 tion with the Administrator of the Federal Emergency
12 Management Agency, the Secretary of Energy, the Chief
13 of the National Guard Bureau, the Chief of Engineers of
14 the Army Corps of Engineers, the Assistant Secretary of
15 the Office of Nuclear Energy of the Department of En-
16 ergy, the Under Secretary of Defense for Research and
17 Engineering, the Chairman of the Nuclear Regulatory
18 Commission, and the Deputy Assistant Secretary for the
19 Office of Reactor Fleet and Advanced Reactor Deployment
20 of the Department of Energy, develop a national strategy
21 to utilize microreactors to assist with natural disaster re-
22 sponse efforts.

23 (b) SUBMISSION TO CONGRESS.—Not later than 1
24 year after the date of enactment of this Act, and every
25 2 years thereafter, the President shall submit to the ap-

1 appropriate congressional committees a comprehensive na-
2 tional strategy developed under subsection (a).

3 (c) CONTENTS OF NATIONAL STRATEGY.—A national
4 strategy developed under subsection (a) shall include the
5 following:

6 (1) EVALUATION OF EXISTING DIESEL DEPLOY-
7 MENT EFFORTS.—An assessment of the effectiveness
8 of utilizing diesel generators to assist with natural
9 disaster response efforts, which such assessment
10 shall include—

11 (A) information on the current use of die-
12 sel generators to assist with natural disaster re-
13 sponse efforts, including—

14 (i) the prevalence of deploying diesel
15 generators around the United States as the
16 sole power source to assist with natural
17 disaster response efforts;

18 (ii) the average number of diesel gen-
19 erators deployed in natural disaster re-
20 sponse efforts based on the type of natural
21 disaster, the severity of the natural dis-
22 aster, and the location of the natural dis-
23 aster;

24 (iii) where Federal, State, and local
25 governments store diesel generators;

1 (iv) how diesel generators are trans-
2 ported to areas affected by a natural dis-
3 aster;

4 (v) any logistical concerns with refuel-
5 ing diesel generators over an extended pe-
6 riod of time;

7 (vi) the potential to utilize accessory
8 equipment that is traditionally connected
9 to diesel generators to help provide elec-
10 tricity to the area in need; and

11 (vii) any other information that is
12 necessary to understand the role of diesel
13 generators used to assist with natural dis-
14 aster response efforts;

15 (B) how the effect on the environment of
16 utilizing diesel generators to assist with natural
17 disaster response efforts compares to the esti-
18 mated effect on the environment of utilizing
19 microreactors to assist with the same natural
20 disaster response efforts; and

21 (C) the concerns to public safety when de-
22 ploying diesel generators in natural disaster re-
23 sponse efforts.

24 (2) GOALS, OBJECTIVES, AND PRIORITIES.—A
25 comprehensive, research-based, and long-term dis-

1 cussion of goals, objectives, and priorities for uti-
2 lizing microreactors instead of diesel generators to
3 assist with natural disaster response efforts.

4 (3) DEPARTMENT OF DEFENSE ANALYSIS.—An
5 analysis of—

6 (A) how the efforts of the Department of
7 Defense to develop microreactor technology for
8 operational uses could be used to inform the de-
9 velopment of microreactors to assist with nat-
10 ural disaster response efforts, including any
11 recommendations and additional direction that
12 may be necessary for such expedited deploy-
13 ment;

14 (B) how the Department of Defense can
15 most effectively translate and implement the
16 lessons learned from its operations in the field
17 to assist with natural disaster response efforts,
18 including how operations in the field related to
19 microreactors can be used to answer broad
20 questions for the nuclear industry and for fu-
21 ture issues relating to fuel reliability, energy
22 supply chain issues, reducing diesel convoy cau-
23 salities, and supporting other global humani-
24 tarian needs; and

1 (C) whether a demonstration program for
2 microreactors is needed prior to deploying
3 microreactors for natural disaster response ef-
4 forts, based on the analysis provided by sub-
5 paragraphs (A) and (B).

6 (4) RECOMMENDATIONS FOR THE NUCLEAR
7 REGULATORY COMMISSION.—Recommendations on
8 how the Nuclear Regulatory Commission can work
9 with other Federal agencies to expedite—

10 (A) the approval of designs for microreac-
11 tors; and

12 (B) issuing licenses for the utilization,
13 transportation, and operation of microreactors
14 in rapid deployment scenarios, such as natural
15 disaster response efforts.

16 (5) UTILIZING FEASIBILITY STUDIES.—An
17 analysis of available academic literature and studies,
18 including site feasibility studies, to identify high risk
19 areas that are prone to natural disasters that should
20 be prioritized during emergency planning.

21 (6) STRATEGIC CONSIDERATIONS WHEN DE-
22 PLOYING MICROREACTORS.—An assessment of var-
23 ious strategic considerations to improve the effi-
24 ciency, timeliness, and cost-effectiveness of deploying

1 microreactors to assist with natural disaster re-
2 sponse efforts, including—

3 (A) whether the Department of Defense,
4 the Federal Emergency Management Agency,
5 or any other government entity should build,
6 own, or operate microreactors that are used to
7 assist with natural disaster response efforts, in-
8 cluding whether it would be viable to lease
9 microreactors from private industry and wheth-
10 er it would be viable to facilitate public-private
11 partnerships to find cost effective options to
12 utilize microreactors for natural disaster re-
13 sponse efforts;

14 (B) the recommended number of individ-
15 uals charged with the usage, maintenance, and
16 upkeep of the microreactors, including the rec-
17 ommended qualifications, training requirements,
18 availability requirements, and oversight respon-
19 sibility of such individuals;

20 (C) the number of microreactors needed,
21 initially and in the long-term, to effectively re-
22 spond to a natural disaster based on past nat-
23 ural disaster trends and the specific geographic
24 location of the area;

1 (D) where microreactors used to assist
2 with natural disaster response efforts would be
3 stored, including information on—

4 (i) how different microreactor storage
5 locations may affect swift and economically
6 feasible natural disaster response efforts;

7 (ii) the feasibility of utilizing already-
8 built facilities instead of constructing new
9 microreactor storage facilities;

10 (iii) the cost of constructing new
11 microreactor storage facilities;

12 (iv) how to properly store the micro-
13 reactor when not being utilized for natural
14 disaster response efforts; and

15 (v) potential storage locations, such
16 as—

17 (I) the Strategic Alliance for
18 FLEX Emergency Response locations
19 in Memphis, Tennessee and Phoenix,
20 Arizona; and

21 (II) Department of Defense
22 bases;

23 (E) how to maintain a microreactor and
24 replace, store, and dispose of fuel used by a
25 microreactor, including whether public-private

1 partnerships may be used to assist with such
2 maintenance, replacement, storage, and dis-
3 posal;

4 (F) when a diesel generator will suffice in
5 the event of a natural disaster of limited pro-
6 portions, in comparison to utilizing microreac-
7 tors to assist with natural disaster response ef-
8 forts;

9 (G) which States and territories and pos-
10 sessions of the United States that are prone to
11 natural disasters, such as hurricanes, should be
12 prioritized when initially selecting locations to
13 deploy microreactors to assist with natural dis-
14 aster response efforts;

15 (H) the methods, capabilities, and costs as-
16 sociated with transporting microreactors that
17 were or may be impacted by natural disasters,
18 including considerations about transporting new
19 microreactors, in addition to microreactors that
20 have been put to use, and any regulatory or
21 legal issues that may arise during the transpor-
22 tation;

23 (I) any other strategic considerations that
24 should be taken into account before deploying

1 microreactors to assist with natural disaster re-
2 sponse efforts;

3 (J) how to integrate microreactors into ex-
4 isting electrical grids in emergency situations,
5 including how grid connection points, microgrid
6 limits, site load limits, existing infrastructure,
7 and the standard process for grid interconnec-
8 tions may impact the integration of microreac-
9 tors into existing electrical grid;

10 (K) whether microreactors will be suscep-
11 tible to cyberattacks, including whether autono-
12 mous control will impact the microreactor's
13 cyberattack susceptibility and what systems or
14 microreactor designs would be ideal for com-
15 bating such cyberattacks during a natural dis-
16 aster response effort; and

17 (L) how the weight of a microreactor, com-
18 pared to the weight of a diesel generator, af-
19 fects deploying microreactors and diesel genera-
20 tors to assist with natural disaster response ef-
21 forts.

22 (7) DEPLOYMENT CHALLENGES AND BAR-
23 RIERS.—An assessment of—

1 (A) the challenges and barriers to deploy-
2 ing microreactors to assist with natural disaster
3 response efforts; and

4 (B) solutions to address each such chal-
5 lenge and barrier.

6 (8) REVIEW OF AND RECOMMENDATIONS FOR
7 LEGISLATION.—

8 (A) REVIEW.—A review of existing law
9 that can be used to ease the burden of utilizing
10 microreactors to assist with natural disaster re-
11 sponse efforts, including the Robert T. Stafford
12 Disaster Relief and Emergency Assistance Act
13 (42 U.S.C. 5121 et seq.), the Energy Policy Act
14 of 2005 (42 U.S.C. 15801 et seq.), the Atomic
15 Energy Act of 1954 (42 U.S.C. 2011 et seq.),
16 the Nuclear Energy Innovation and Moderniza-
17 tion Act (42 U.S.C. 2215 note), and any other
18 relevant law.

19 (B) RECOMMENDATIONS.—Recommendations
20 for legislation to—

21 (i) assist with—

22 (I) deploying microreactors to as-
23 sist with natural disaster response ef-
24 forts;

1 (II) the maintenance and upkeep
2 of such microreactors; and

3 (III) the initial and long-term
4 storage of such microreactors; and

5 (ii) pay for the activities described in
6 subclauses (I) through (III) of clause (i).

7 (9) PARTNERSHIPS TO ENHANCE NATURAL DIS-
8 ASTER RESPONSE EFFORTS.—An assessment
9 about—

10 (A) the current status of any collaboration
11 between the National Guard, Federal Emer-
12 gency Management Agency, and the Army
13 Corps of Engineers during natural disaster re-
14 sponse efforts;

15 (B) the specific roles of each entity speci-
16 fied in subparagraph (A) (disaggregated, in the
17 case of the National Guard, by State and by
18 military department) during a natural disaster
19 response effort, and their respective roles when
20 participating in natural disaster response ef-
21 forts;

22 (C) the current emergency responsibilities
23 of the Department of Energy and the Nuclear
24 Regulatory Commission that relate to deploying

1 microreactors during natural disaster response
2 efforts;

3 (D) the potential opportunity to set up an
4 annual listening group session or consortium to
5 provide all the necessary information needed to
6 deploy microreactors to assist with natural dis-
7 aster response efforts and to ensure a smooth
8 transition from the use of diesel generators to
9 the use of microreactors to assist with natural
10 disaster response efforts;

11 (E) how the Emergency Management As-
12 sistance Compact, consented to by Congress in
13 the joint resolution entitled “Joint resolution
14 granting the consent of Congress to the Emer-
15 gency Management Assistance Compact” (Pub-
16 lic Law 104–321), can be utilized to allow
17 States to allocate their unused microreactors to
18 other States that are in need of microreactors
19 to assist with natural disaster response efforts;
20 and

21 (F) how to improve the collaboration be-
22 tween Federal, State, and local government en-
23 tities and private entities when deploying micro-
24 reactors to assist with natural disaster response
25 efforts.

1 (10) UTILIZING MICROREACTORS TO CHARGE
2 ELECTRIC VEHICLES.—Recommendations on how to
3 utilize microreactors as charging stations for electric
4 vehicles in the event of a mass evacuation resulting
5 from a natural disaster, including recommendations
6 on—

7 (A) how to deploy microreactors to charge
8 electric vehicles before an evacuation;

9 (B) the primary transportation corridors
10 that would be used for such a mass evacuation;

11 (C) how many microreactors would be
12 needed to charge electric vehicles during such a
13 mass evacuation, based on the size and popu-
14 lation of the State in which the mass evacuation
15 occurs;

16 (D) the best placement of microreactors
17 throughout the primary transportation corridors
18 to ensure a smooth electric vehicle charging
19 process and subsequent evacuation;

20 (E) any potential public-private partner-
21 ships that would be useful in utilizing micro-
22 reactors to charge electric vehicles during a
23 mass evacuation, including an estimate of the
24 costs that would be associated with establishing
25 these partnerships;

- 1 (F) how to—
- 2 (i) transport microreactors to mass
- 3 evacuation locations along primary trans-
- 4 portation corridors for purposes of charg-
- 5 ing electric vehicles; and
- 6 (ii) pay for such transportation; and
- 7 (G) any other topic related to subpara-
- 8 graphs (A) through (F).

9 (11) DEPLOYING MICROREACTORS TO UNITED

10 STATES TERRITORIES AND POSSESSIONS.—Rec-

11 ommendations on deploying microreactors to terri-

12 tories and possessions of the United States to assist

13 with natural disaster response efforts.

14 (12) USING MILITARY EQUIPMENT WITH NU-

15 CLEAR CAPABILITIES.—Recommendations on how to,

16 in the event of a natural disaster and when the de-

17 ployment of a microreactor is not timely or ideal for

18 the circumstance, deploy military equipment of the

19 United States with nuclear capabilities, such as nu-

20 clear aircraft carriers and nuclear submarines, to

21 provide temporary electricity to an area severely im-

22 pacted by a natural disaster.

23 (13) BUDGET PRIORITIES.—A multiyear budget

24 plan that identifies the necessary resources to suc-

25 cessfully carry out the recommendations and imple-

1 ment any lessons learned from the assessments and
2 other analysis under this subsection.

3 (14) TECHNOLOGY ENHANCEMENTS.—An anal-
4 ysis of current and developing ways to leverage exist-
5 ing and innovative technology to improve the effec-
6 tiveness of efforts to deploy microreactors to assist
7 with natural disaster response efforts.

8 (15) USING INNOVATIVE TOOLS TO PREDICT
9 NATURAL DISASTERS.—A description of how to uti-
10 lize innovative technology, such as artificial intel-
11 ligence and predictive meteorological tools, to pre-
12 pare for the utilization of microreactors before a
13 natural disaster.

14 (16) FLOATING NUCLEAR BARGES.—An assess-
15 ment of how floating nuclear barges compare to
16 using portable microreactors, including—

17 (A) the advantages and disadvantages of
18 using a portable microreactor compared to a
19 floating nuclear barge; and

20 (B) an identification of scenarios during
21 which a floating nuclear barge would be pre-
22 ferred over a portable microreactor.

23 **SEC. 4. DEFINITIONS.**

24 In this Act—

1 (1) APPROPRIATE CONGRESSIONAL COMMIT-
2 TEES.—The term “appropriate congressional com-
3 mittees” means—

4 (A) the Committee on Energy and Com-
5 merce, the Committee on Armed Services, the
6 Committee on Oversight and Accountability,
7 and the Committee on Science, Space, and
8 Technology of the House of Representatives;
9 and

10 (B) the Committee on Energy and Natural
11 Resources, the Committee on Armed Services,
12 the Committee on Environment and Public
13 Works, and the Committee on Commerce,
14 Science, and Transportation of the Senate.

15 (2) LOCAL GOVERNMENT.—The term “local
16 government” has the meaning given such term in
17 section 102 of the Robert T. Stafford Disaster Relief
18 and Emergency Assistance Act (42 U.S.C. 5122).

19 (3) MICROREACTOR.—The term “microreactor”
20 means a nuclear reactor, including a portable nu-
21 clear reactor, that has an electricity generating ca-
22 pacity of not more than 20 megawatts of thermal
23 energy.

24 (4) NATURAL DISASTER.—The term “natural
25 disaster” has the meaning given the term “Major

1 disaster” in section 102 of the Robert T. Stafford
2 Disaster Relief and Emergency Assistance Act (42
3 U.S.C. 5122), except that the term “natural dis-
4 aster” does not include a wildfire.

5 (5) NATURAL DISASTER RESPONSE EFFORT.—
6 The term “natural disaster response effort” means
7 a circumstance in which a State or local government
8 requests assistance under the Robert T. Stafford
9 Disaster Relief and Emergency Assistance Act (42
10 U.S.C. 5121 et seq.), including assistance to address
11 the loss of primary electrical capacity as a result of
12 a natural disaster.

13 (6) STATE.—The term “State” means a State
14 of the United States and the District of Columbia.

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